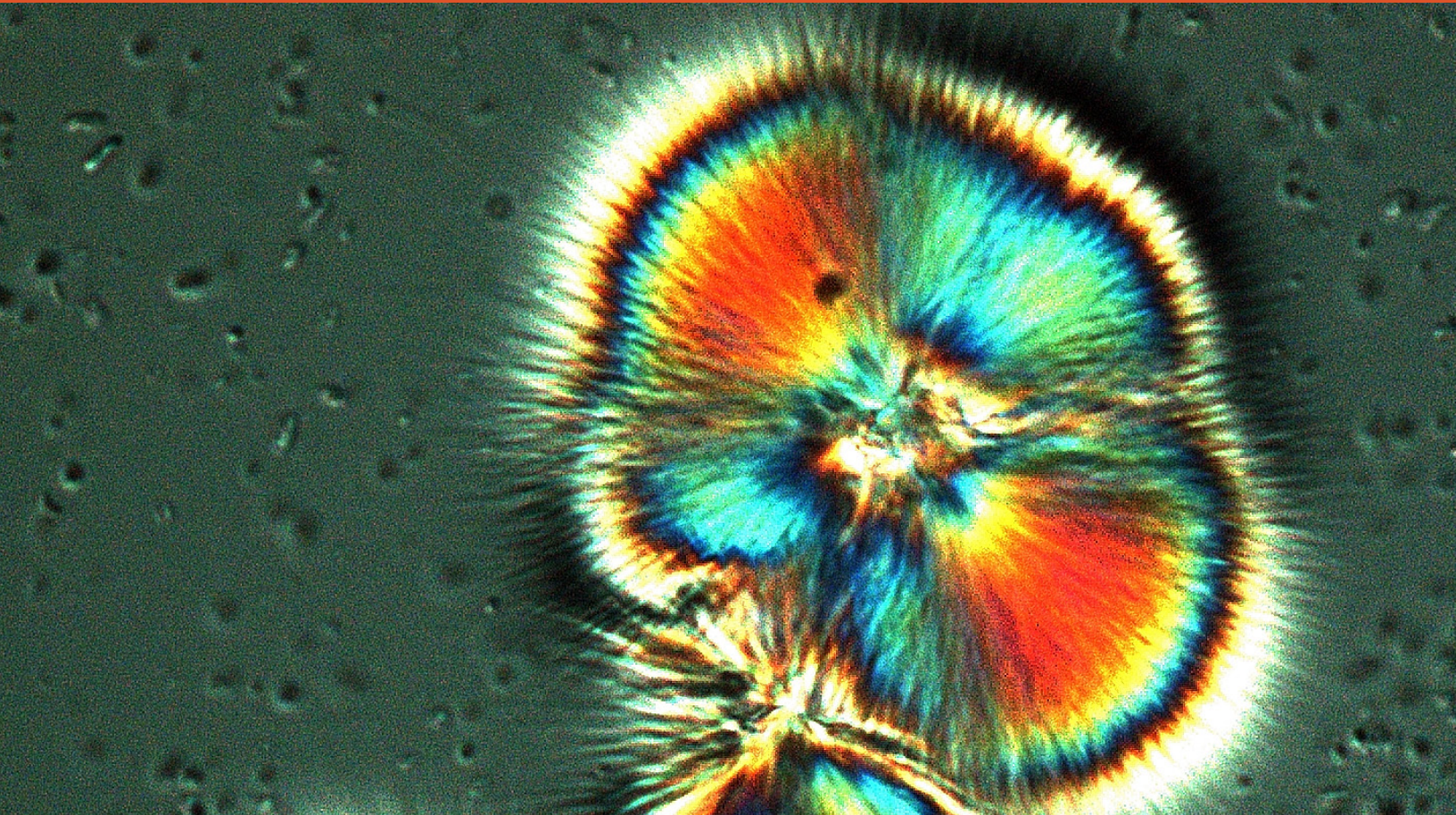


U N I T E D S T A T E S
National Science Foundation



FY 2012

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: Microbe vs., Mineral — Life and Death Struggle in the Desert

Credit: Michael P. Zach, University of Wisconsin–Stevens Point

Although the bursts of rainbow colors in this photograph are mesmerizing, microbes fight for their lives in the background. Chemist Michael P. Zach of the University of Wisconsin–Stevens Point, snapped this image of a salt sample he collected in a hot, arid valley near Death Valley National Park in California. He crushed the salt, placed it under a microscope slide and added a drop of water. Suddenly, a slew of microbes came to life as the salt crystals dissolved. Then when the water started evaporating, he took a picture. The colors come from light passing through the growing crystals, which act like prisms. This image received an Honorable Mention in the 2009 International Science and Engineering Visualization Challenge sponsored by NSF and the journal *Science*.

For more information see: www.nsf.gov/news/special_reports/scivis/winners_2009.jsp



www.nsf.gov

About This Report

For FY 2012, in accordance with Office of Management and Budget (OMB) Circular A-136, *Financial Reporting Requirement*, the National Science Foundation (NSF) is preparing three reports to 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 2013 management challenges, as well as management's report on the progress made on the management challenges identified by the IG for FY 2012. The **AFR** also includes a summary of NSF's key performance metrics.
- The **Annual Performance Report (APR)** will include the results of NSF's FY 2012 performance goals, including the agency's priority goals, related to the Government Performance and Results Act of 1993 (GPRA) and the GPRA Modernization Act of 2010. The **APR** will be included in NSF's *FY 2014 Budget Request*, which will be transmitted to Congress on February 4, 2013.
- NSF's **Performance and Financial Highlights** report summarizes key information from the **AFR** and **APR**. It will be available on February 15, 2013.

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

NSF by the Numbers	
\$7.0 billion	<i>FY 2012 Appropriations (does not include mandatory accounts)</i>
1,895	<i>Colleges, universities, and other institutions receiving NSF funding in FY 2012</i>
48,600	<i>Proposals evaluated in FY 2012 through a competitive merit review process</i>
11,500	<i>Competitive awards funded in FY 2012</i>
236,000	<i>Proposal reviews conducted in FY 2012</i>
319,000	<i>Estimated number of people NSF supports directly (researchers, postdoctoral fellows, trainees, teachers, and students)</i>
45,800	<i>Students supported by NSF Graduate Research Fellowships since 1952</i>

NATIONAL SCIENCE FOUNDATION FY 2012 Agency Financial Report

www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf13002

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A MESSAGE FROM THE DIRECTOR

I am pleased to present the National Science Foundation's (NSF) *Agency Financial Report* (AFR) for fiscal year (FY) 2012. NSF's mission is to promote and advance progress in science and engineering research and education in the United States. Innovation is fundamental to NSF's mission and is necessary for the economic prosperity and national security of our country. Innovation arises from basic research in science and engineering. NSF accounts for over 20 percent of the total federal support for basic research conducted at U.S. colleges and universities, and this share increases to 61 percent when medical research supported by the National Institutes of Health is excluded. In many fields such as computer science, NSF is the primary source of federal academic support.



It is innovation that drives our vision of a nation that capitalizes on new concepts in science and engineering and provides global leadership in advancing research and education. NSF's global leadership is of profound importance as we are at the forefront of a new era of science. This new era cuts across every field of science and engineering and may be categorized into the "Era of Observation" and the "Era of Data and Information." In the era of observation, we have the experimental tools and infrastructure that allow scientists to observe from the outer edges of the solar system and universe, to the physical, chemical, geological and biological variables in the ocean and on the seafloor. The new era of observation also includes supporting research phenomena at the nano-, pico-, and femto-scales—observing, for example, a single biological molecule or a neuron in the human brain. That experimental capability, combined with advances in computational hardware and software gives us an infrastructure to develop new knowledge at a level that we could not have foreseen even a few years ago. The new era of observation has led to a new era of data and information in which unprecedented amounts of data and information must be archived and stored to ensure interoperability of data across platforms that will allow investigators to extract useful knowledge that will move the community forward collectively.

Two notable efforts in FY 2012 exemplify the important work being done at the Foundation:

- In May 2012, NSF convened the inaugural Global Summit on Merit Review with participation from nearly 50 heads of primary science funding agencies from around the world and leaders of about 20 science organizations and institutions from the United States and overseas. This forum of international science leadership is the first step toward a more unified approach to the scientific process and developing a foundation for international collaboration. Adoption of a common set of merit review principles was a major achievement of the Summit as this will bolster more effective and efficient international research cooperation. Another key Summit outcome was the formation of the Global Research Council, which will strengthen international collaboration, tackle science process challenges, and share best practices. The next Summit will be co-hosted by Brazil and Germany in Berlin in May 2013; it will address core principles of scientific integrity.
- NSF launched the Innovation Corps (I-Corps) program to leverage productive public-private partnerships and extend the impact of fundamental research discoveries. I-Corps participants learn to

identify valuable product opportunities that can emerge from academic research. The program reached a pivotal one-year milestone in July 2012. Several teams already are receiving public and private follow-on investment and participants have built a novel I-Corps Mentor Network that connects experts from the academic and entrepreneurial communities. Nearly 100 teams composed of academic researchers, student entrepreneurs—undergraduates, graduate students and post-docs—and business mentors participated in the six-month I-Corps program. I-Corps has inspired the research and business communities to collaborate in new ways.

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 15th 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 15 of 18 annual performance goals for which results are available at this time, including the agency's three priority goals. In keeping with the requirements of the Government Performance and Results Act (GPRA), NSF will report the complete results of our FY 2012 performance goals in NSF's *Annual Performance Report* (APR) as part of the agency's *FY 2014 Budget Request to Congress*. The APR and the *Highlights* report will be available in February 2013, 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, 2012



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 Fundamental to this mission is innovation, which arises from basic research in science and engineering and is necessary for economic prosperity and national security.² Our vision is a nation that capitalizes on new concepts in science and engineering and provides global leadership in advancing research and education.³

NSF is the only federal agency dedicated to supporting non-biomedical research and education across all fields of science and engineering. NSF is the funding source for approximately 20 percent of all the federally supported basic scientific research conducted by America’s colleges and universities. In many fields—such as mathematics, computer science, and the social sciences—NSF is the predominant source of federal funding. For example, NSF supports 81 percent of the computer science research at universities.⁴ These investments in research and education have fueled many important innovations that have stimulated economic growth and improved the quality of life and health for all Americans.

In keeping with our mission, NSF aims to accelerate the application of scientific discoveries by investing in a national “culture of innovation.” This investment builds on our legacy of more than 60 years in supporting basic research and spawning innovation by broadening the impact of select, NSF-funded, basic research projects, and by preparing scientists and engineers to extend their focus beyond the laboratory and contribute to 21st century science and engineering from the frontiers. In addition, our investments integrate research and education to support the development of a world-class scientific workforce that can engage fully in and contribute imaginatively to a 21st century world that increasingly relies on technology to meet challenges and leverage opportunities.

As part of our investment in the development of this workforce, NSF has funded 45,768 Graduate Research Fellowships since 1952. The ranks of NSF fellows include numerous individuals who have made transformative breakthroughs in science and engineering research. Many have become leaders in their chosen fields; 356 have become members of the National Academy of Sciences or National Academy of Engineering, and 40 have been honored as Nobel laureates. In fact, 204 Nobel Prize winners have received NSF support at some point in their careers, including five of the most recent winners announced in October 2012.⁵ These investments are a critical means by which NSF achieves its mission; we excel at identifying, nurturing, and investing in scientific potential.

We also achieve our mission by making awards and managing a portfolio of the highest quality research and education projects that further our strategic goals, reflect our national priorities, and keep the United States at the forefront of innovation as a global leader of the 21st century science and engineering enterprise. In doing so, NSF is visionary, pursuing 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

¹ The National Science Foundation Act of 1950 (Public Law 81-507).

² Bush, V. (1945). *Science—The Endless Frontier: A Report to the President* available at www.nsf.gov/about/history/vbush1945.htm

³ *Empowering the Nation Through Discovery and Innovation, the NSF Strategic Plan for Fiscal Years (FY) 2011–2016* available at www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf11047.

⁴ See NSF FY 2013 Budget Request to Congress, page Overview-12 at www.nsf.gov/about/budget/fy2013/toc.jsp.

⁵ See www.nsf.gov/news/news_summ.jsp?cntn_id=100683.

inclusive, seeking to include 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—*Transforming the Frontiers*, *Innovating for Society*, and *Performing as a Model Organization*. Our pursuit of our mission can be assessed through our success in achieving our performance goals, which include measurable targets for our near-, mid-, and long-term actions. Figure 4 (page I-11) depicts our FY 2011–2016 strategic plan, which we continued to use in FY 2012 as our roadmap to achieving the NSF mission and vision.⁶

Following the Money

NSF is funded primarily through six congressional appropriations, which totaled \$7,033 million in FY 2012 (Figure 1).⁷ Research and Related Activities (R&RA), Education & Human Resources (EHR), and Major Research Equipment and Facilities Construction (MREFC) fund the agency's programmatic activities and account for 95 percent of NSF's total appropriations.

- R&RA supports basic research and education activities at the frontiers of science and engineering, including high-risk and transformative research. It accounted for 81 percent of FY 2012 funding.
- EHR supports activities that ensure a diverse, competitive, and globally engaged U.S. science, technology, engineering, and mathematics workforce and a scientifically literate citizenry. It accounted for 12 percent of FY 2012 funding.
- The MREFC appropriation, which supports the construction of unique national research platforms and major research equipment that enable cutting-edge research, accounted for 3 percent of FY 2012 funding.
- The Agency Operations and Award Management (AOAM) appropriation supports NSF's administrative and management activities. It accounted for 4 percent of the agency's FY 2012 funding.



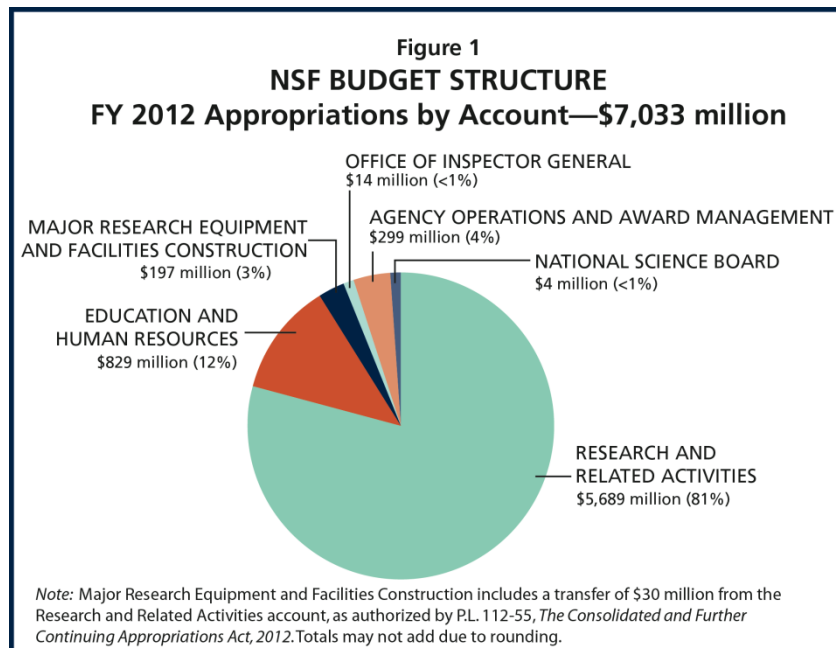
Photo credit: Lisa Hunter, University of Hawaii. James Linden built this thermal enclosure for the ATS telescope.

Alumni of the NSF-supported Akamai Workforce Initiative are finding high-tech jobs within the state of Hawaii. This is a major triumph for the program and a success of the model that provides internships and ongoing support for undergraduate students with high-tech companies and observatories on the islands of Maui and Hawaii. In addition to supporting the advancement of STEM learning within Hawaii, Akamai also cultivates local talent and places that talent into jobs within the state, an outcome that is especially important to Native Hawaiian students and students who have lived in Hawaii for all or most of their lives. See <http://cfao.ucolick.org/EO/awi> for more information.

⁶ The NSF strategic plan details our mission and vision, along with the core values, strategic and performance goals, targets and core strategies, and evaluation and assessment mechanisms designed to ensure that we are achieving our mission and vision. The strategic plan is available at www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf11047.

⁷ In Figure 2, FY 2012 appropriations of \$7,033 million plus Trust Funds (\$47 million) and H1-B Nonimmigrant Petitioner Receipts (\$129 million) equal \$7,209 billion as shown in the Statement of Budgetary Resources.

- Separate appropriations support the activities of the Office of Inspector General (OIG) and National Science Board (NSB).



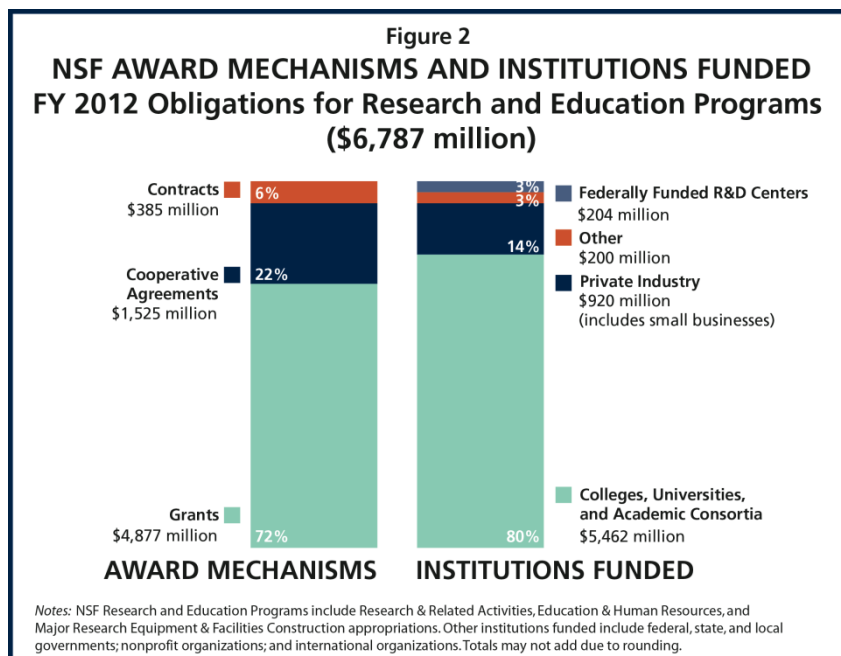
In FY 2012, 89 percent of research funding was allocated based on competitive merit review.⁸ Nearly 38,000 members of the science and engineering community participated in the merit review process as panelists and proposal reviewers.⁹ Awards were made to 1,895 institutions in 50 states, the District of Columbia, and 3 U.S. territories. These institutions employ America's leading scientists, engineers, and educators, and train the leading-edge innovators of tomorrow. NSF estimates that in FY 2012, 319,000 people were directly involved in NSF programs and activities, receiving salaries, stipends, or participant support. Beyond these figures, NSF programs indirectly impact millions of people. These programs reach K-12 students and teachers, the general public, and researchers through activities including workshops; informal science activities such as museums, television, videos, and journals; outreach efforts; and dissemination of improved curriculum and teaching methods.

In FY 2012, NSF funded 11,534 new awards, mostly to academic institutions. As shown in Figure 2, 80 percent of support for research and education programs (\$5,462 million) was to colleges, universities, and academic consortia. Private industry—including small businesses, which were an important focus of the Administration—accounted for 14 percent (\$920 million) and support to Federally Funded R&D Centers accounted for 3 percent (\$204 million). Other recipients included federal, state, and local governments; nonprofit organizations; and international organizations. A small number of awards funded research in collaboration with other countries, which adds value to the U.S. scientific enterprise and maintains the U.S. leadership at the helm of the global scientific enterprise.

⁸ NSF does not require merit review for certain kinds of proposals, including proposals for international travel grants and some conferences, symposia, and workshops.

⁹ 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 2011* (NSB-12-28) at www.nsf.gov/nsb/publications/2012/nsb1228.pdf.

Most NSF awards (94 percent) were funded through grants or cooperative agreements (Figure 2). 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 during the project performance period (e.g., research centers, multi-use facilities). Contracts (procurement instruments) are used to acquire products, services, and studies (e.g., program evaluations) required primarily for NSF or other government use.



Organizational Structure

NSF is an independent federal agency headed by a Director appointed by the President and confirmed by the U.S. Senate.¹⁰ 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.¹¹ The NSF Director is a member *ex officio* of the Board. Both the Director and the other NSB members serve 6-year terms. The NSF workforce includes about 1,400 permanent staff.¹² NSF also regularly recruits visiting scientists, engineers, and educators as rotators who work at NSF for up to 4 years.¹³ The blend of permanent staff and rotators who infuse new talent and expertise into the agency is reflective of our core values and integral to effectuating NSF's mission to support the entire spectrum of science and engineering research and education at the frontier.

¹⁰ Biographies of the Director and Deputy Director, appointed by the President and confirmed by the Senate, are available on the NSF website: www.nsf.gov/od.

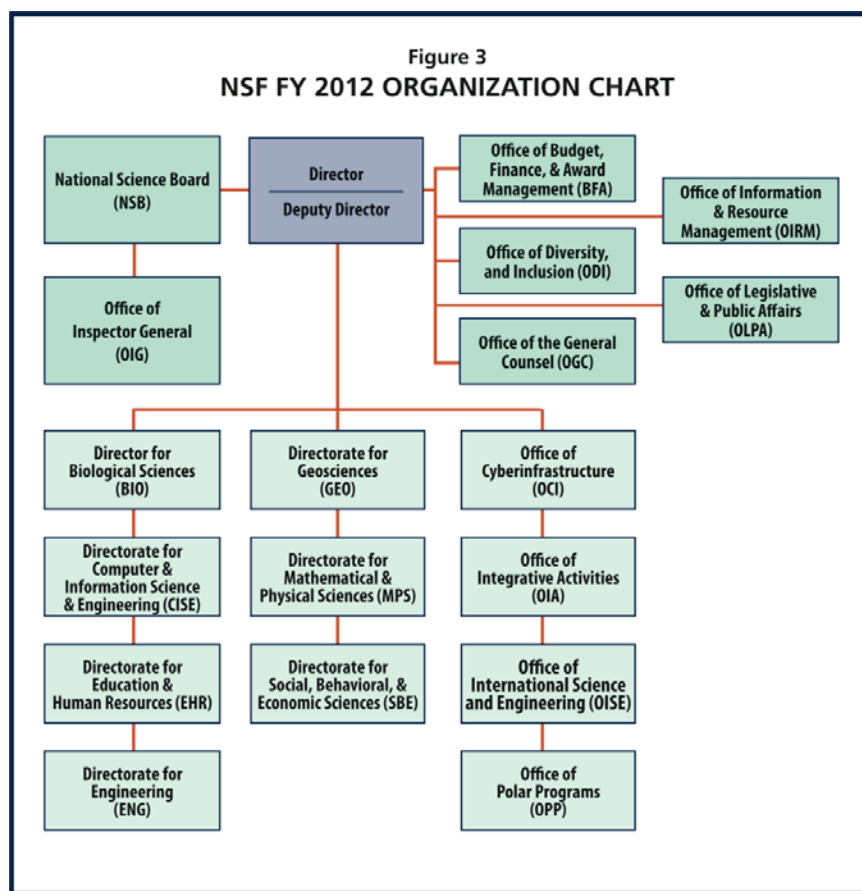
¹¹ On August 10, 2012, the President signed the [Presidential Appointment Efficiency and Streamlining Act of 2011](#), P.L. 112-166 (effective October 10, 2012), which removes the Senate confirmation requirement for NSB members. For additional information about the NSB, see Appendix 6 and www.nsf.gov/nsb.

¹² Full-time equivalents.

¹³ As of September 2012, temporary appointments included 184 under the Intergovernmental Personnel Act.

As shown in Figure 3, NSF's organizational structure aligns with the major fields of science and engineering (www.nsf.gov/staff/organizational_chart.pdf). In September 2012, NSF announced that in FY 2013, three program offices now falling under the Office of the Director will be realigned and reintegrated into units where there is more programmatic and administrative depth and expertise. The Office of Cyberinfrastructure will become a division within the Directorate for Computer and Information Science and Engineering; the Office of Polar Programs will become a division within the Directorate for Geosciences; and the Office of International Science and Engineering will be merged with the Office of Integrative Activities. This realignment will improve the scientific impact and organizational efficiency of the affected organizations, by creating stronger integration across programs and setting a tone for considering organizational arrangements more broadly.

In addition to the agency's headquarters located in Arlington, Virginia, NSF maintains offices in Paris, France; Tokyo, Japan; and Beijing, China to facilitate international activities. To support the U.S. Antarctic Program (USAP), NSF maintains an office in Christchurch, New Zealand.



Management Challenges

In FY 2012, the NSF Office of Inspector General (OIG) identified seven major management and performance challenges facing the agency: ensuring proper stewardship of Recovery Act funds, improving grant administration, strengthening contract administration, implementing improvements in workforce management and the workplace environment, encouraging the ethical conduct of research,

effectively managing large facilities and instruments, and managing programs and resources in times of budget austerity. The OIG also identified two emerging challenges: transitioning to cloud computing and the trusted internet connection, and planning for the next NSF headquarters.¹⁴ Management's report on the significant activities undertaken in FY 2012 to address these challenges is included as Appendix 4B of this report. The report also discusses activities planned for FY 2013 and beyond. Some of the agency accomplishments in FY 2012 are highlighted below:

- *To ensure proper stewardship of Recovery Act funds:* NSF continued to implement a robust, comprehensive, and multi-stage review program for recipient reporting. This process has matured over the past 12 reporting quarters, receiving recognition from the Office of Management and Budget (OMB) and the Recovery Accountability and Transparency Board (RATB) and contributing to process-improvement recommendations government-wide. NSF delivered a reporting compliance rate of more than 99 percent over the last eleven reporting quarters with the highest rate in FY 2012 reaching 99.8 percent compliance, which exceeded the government-wide reporting compliance rate in each quarter. 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. In addition, NSF implemented an aggressive communication strategy to notify all American Recovery and Reinvestment Act (ARRA) award recipients of the OMB directive to accelerate spending in order to exhaust remaining funds by September 30, 2013. All NSF communications have emphasized *responsible* acceleration of ARRA expenditures, in accordance with the terms and conditions of the award and allowable pursuant to the applicable cost principles.
- *To improve grant administration:* NSF established the operationally focused NSF-OIG Audit Quality Subgroup under the Stewardship Collaborative. The Subgroup agreed to segregate internal (NSF) versus external (awardee) audit findings and release of detailed schedules of questioned costs upon issuance of audit reports. NSF has finished initial development of the Award Cash Management Service (ACM\$), which will increase control over how awardees draw down funds, including on contingency budgets on large-scale construction projects. Selection of a system solution for iTRAK, NSF's new financial management system, was completed and the initial implementation phase has begun, including staffing for the iTRAK Project Management Office that will oversee the process. NSF continues to expand and upgrade mechanisms and tools for communicating policies, regulations, and business practices to staff and external stakeholder communities. NSF also piloted four successful virtual Award Monitoring and Business Assistance Program site visits to mitigate current and future resource restraints while still maintaining adequate oversight.
- *To strengthen contract administration:* NSF has continued to take a comprehensive approach by improving policies, procedures, and human capital initiatives. Specifically, guidance to address gaps related to cost reimbursement contracting has been reinforced and key acquisition workforce policy has been updated to ensure full compliance with recent policy changes issued by OMB's Office of Federal Procurement Policy. In addition, NSF added language to its contracting manual addressing the importance of monitoring incurred cost audits, as well as continues to work on obtaining all incurred cost audits for close-out of the U.S. Antarctic Program contract.
- *To implementing improvements in workforce management and the workplace environment:* NSF has made consistent progress in addressing past recommendations, as well as in responding to new or

¹⁴ The OIG's memorandum on NSF's FY 2012 management challenges is included in Appendix 3A in NSF's FY 2011 Agency Financial Report at www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf12001.

modified recommendations as they arise from internal or external sources. Actions have been taken in the context of NSF's Strategic Plan and annual Government Performance and Results Act performance goals, and to align with the NSF Human Capital Strategic Plan and the NSF Diversity and Inclusion Strategic Plan. Management actions regarding workforce issues have included hiring a new Chief Human Capital Officer and including human resource topics in the weekly meetings of NSF's senior management groups, which are now more broadly engaged in establishing effective human capital management practices.

- *To encourage the ethical conduct of research:* As part of NSF's response to the America Competes Act, NSF has continued to strengthen awardee understanding and adherence to conduct 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. NSF, as part of its outreach efforts, has also presented information on the responsible conduct of research at various conferences, seminars, and orientation meetings.

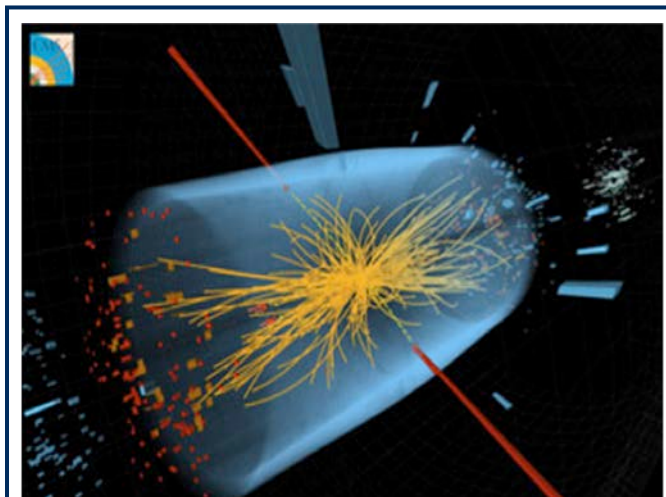


Photo credit: CERN/CMS collaboration 2011. Photo is a rendering of a typical candidate event from the Compact Muon Solenoid (CMS) Experiment in the search for the Higgs boson.

- *To effectively manage large facilities and instruments:* NSF has continued to ensure that all projects were on time, on budget, and meeting performance expectations by participating in construction and final design reviews, as well as regularly monitoring all open construction projects funded through the Major Research Equipment and Facility Construction (MREFC) appropriations account. NSF also assessed performance of awardees by conducting Business Systems Reviews (BSR) and related post-BSR monitoring activities on several active MREFC projects, including the National Radio Astronomy Observatory, and Phase I reviews of the National Optical Astronomy Observatory, National Solar Observatory, and Advanced Technology Solar Telescope.
- *To manage programs and resources in times of budget austerity:* NSF has made significant progress towards reducing certain administrative costs by identifying and implementing efficiencies, by prioritizing work, eliminating or scaling back the scope of some activities, and exploring new ways of getting the job done. Travel costs have been reduced by 9 percent below the FY 2010 baseline. Efforts are also underway to streamline how NSF procures and uses telecommunications services (including mobile devices) and to reduce the cost of light refreshments in support of conferences and panels.

With respect to the emerging challenges, NSF will:

- *Transition to cloud computing and to the trusted internet connection:* NSF has begun adopting cloud computing and implementing the Trusted Internet Connection (TIC) capabilities in alignment with federal information technology (IT) priorities. NSF's focus for both efforts has been to maintain a strong security capability throughout service transitions while ensuring limited impact on agency operations. The agency reports periodically to OMB on implementation of its cloud computing and TIC efforts.
- *Plan for the next NSF headquarters:* NSF has worked with GSA to revise the new lease procurement strategy and provided significant support to GSA and other stakeholders in efforts to secure Congressional approval of NSF's prospectus. We have continued to assess internal technology, communications and furniture assessments, and pilot programs related to this effort.

Future Challenges and Opportunities: Vision for 2013 and Beyond

The most important driver of challenges and opportunities for NSF is the agency's position as a global leader at the forefront of a new era of science. This new era cuts across every field of science and engineering, including social sciences. It may be categorized into two areas: the "Era of Observation" and the "Era of Data and Information."

In the new era of observation, NSF funding supports large-scale experimental tools and infrastructure across all research domains. Examples of such funding include neutrino research in Antarctica and astronomical research through telescopes in Chile, Hawaii, Arizona, and Puerto Rico. Community-based observational platforms provide the infrastructure to engage large, interdisciplinary teams of scientists in addressing extremely complex and challenging questions. Additional examples include EarthScope, the Ocean Observatories Initiative, and the National Ecological Observatory Network. NSF's investments will expand the frontiers of human discovery by enabling scientists to observe from the outer edges of the solar system and the universe, to the physical, chemical, geological and biological variables in the ocean and on the seafloor. The new era of observation also includes supporting research phenomena at the nano-, pico-, and femto-scales—observing, for example, a single biological molecule or a neuron in the human brain, or displacements of a nanometer with a level of sophistication that could not have been achieved even five years ago.

The unprecedented amounts of data yielded by this new era of observation have ushered in a new era of data and information. Data are viewed as a valuable part of the research enterprise. NSF's data management and sharing plan furthers this vision, requiring that investigators share research results with other researchers at no more than incremental cost.¹⁵ NSF's commitment to enabling the development of next-generation data assets and data-intensive science across research disciplines, further exemplifies this new era. This requires ever increasing levels of transparency and accessibility of NSF publications and data.

Recognizing the complexities that increased transparency can bring—including issues of privacy, intellectual property, cost, national security, competitiveness, and cybersecurity—NSF's leadership

¹⁵ Proposals submitted to NSF must include a short supplementary document labeled "Data Management Plan" (DMP) that describes how the proposal will conform to NSF policy on the dissemination and sharing of research results. The agency will not accept proposals without a DMP. For more information, see the [Grant Proposal Guide, Chapter II.C.2.j](#), www.nsf.gov/pubs/policydocs/pappguide/nsf11001/gpg_2.jsp#dmp and the [Data Management and Sharing Frequently Asked Questions\(FAQs\)](#), www.nsf.gov/bfa/dias/policy/dmpfaqs.jsp.

envisions building a policy infrastructure to deal with these challenges, not just in the United States, but globally. NSF is creating an international policy hub based on a centralized infrastructure for data gathering, evaluation, and analysis. At its inaugural, 2-day Global Summit on Merit Review in May 2012, research councils from 50 countries established the Global Research Council (GRC). The global summit was the first step toward a more unified approach to the scientific process. The GRC will create principles of engagement for all the funding agencies in the world, taking up issues beyond merit review and fostering multilateral research and collaboration across continents. Global scientific collaboration expands the pool of knowledge that belongs to everyone and serves as a tool to improve health, security, and opportunity. The next GRC meeting will be held in May 2013. This meeting will be hosted by the German Research Foundation, which has asked NSF to chair it.



Members of the Global Research Council (GRC) gather at NSF headquarters in May 2012 for the GRC's inaugural meeting.

This vision for the future challenges NSF is to scale-up and think big. NSF must foster cutting-edge research for knowledge creation to ensure economic prosperity and keep

America at the forefront of innovation. NSF must do so in a tight fiscal environment that compels prioritization of resources and pushes the limits of leadership and staff creativity. NSF must continue to broaden the participation of underrepresented groups, leveraging the full range of U.S. scientific potential; remove disciplinary barriers and organizational silos to encourage interdisciplinary research projects; embed education into research and research into education; develop a global perspective for every activity; gain leverage through collaboration; and define and articulate science's grand challenges.

At the core of these efforts is the OneNSF philosophy, which guides all agency investments, and the principles for NSF's interactions globally, nationally, and within agency headquarters. OneNSF envisions NSF as an agency that works seamlessly and in a well-integrated way across organizational and disciplinary boundaries. It strives to create new knowledge, stimulate discovery, address complex societal problems, and promote national prosperity through a variety of mechanisms. The *FY 2013 NSF Budget Request* established agency priorities through a OneNSF framework. OneNSF helps to define investment priorities such as Cyberenabled Materials, Manufacturing, and Smart Systems; Cyberinfrastructure Framework for 21st Century Science and Engineering; Expeditions in Education (E²); NSF Innovation Corps (I-Corps); Integrated NSF Support Promoting Interdisciplinary Research and Education (INSPIRE); Secure and Trustworthy Cyberspace; and Science, Engineering, and Education for Sustainability (SEES).¹⁶

¹⁶These and other budget priorities are highlighted in the Overview of NSF's FY 2013 Budget Request to Congress, www.nsf.gov/about/budget/fy2013. Other highlighted priorities include Clean Energy; Advanced Manufacturing; The Faculty Early Career Development program (CAREER); The Graduate Research Fellowship program (GRF); Science and Technology Centers (STCs); Research at the Interface of the Biological, Mathematical, and Physical Sciences (BioMaPS); Experimental Program to Stimulate Competitive Research (EPSCoR); Enhancing Access to the Radio Spectrum (EARS); US Ignite; Science, Technology, Engineering, and Mathematics (STEM) Education; and the Federal Cyberservice: Scholarship for Service (SFS).

Performance

This discussion of NSF's FY 2012 performance management activities focuses on the agency's efforts related to the Government Performance and Results Act of 1993 (GPRA), the GPRA Modernization Act of 2010,¹⁷ the American Recovery and Reinvestment Act (ARRA or Recovery Act), and management workload metrics.

FY 2012 Strategic Framework

NSF is subject to the Government Performance and Results Act of 1993 and the GPRA Modernization Act of 2010, as well as related performance reporting guidance issued by OMB.¹⁸ NSF's Strategic Plan, *Empowering the Nation Through Discovery and Innovation: NSF Strategic Plan for Fiscal Years (FY) 2011–2016*,¹⁹ lays out the following strategic goals:

- *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.

These three strategic goals are broken down into ten specific strategic objectives (Figure 4). Progress toward these objectives is monitored through annual performance targets. In FY 2012, a total of 15 targets were set.

In addition to these strategic goals and objectives, which are intended to monitor agency performance against its entire mission, NSF set three agency Priority Goals for FY 2012--FY 2013 to monitor progress in specific areas where near-term focus on agency execution can have the most impact. In FY 2012, the agency instituted quarterly data-driven performance reviews for each of the three agency Priority Goals, led by agency leaders.

The following discussion of NSF's performance goals and results summarizes information available to date. NSF's *FY 2012 Annual Performance Report* (APR) will provide a fuller 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 2012 performance goals have undergone an independent verification and validation review by an external consultant using GAO guidance.²⁰ More detailed information about NSF's GPRA verification and validation review will be part of the APR. NSF's FY 2012 APR will be included in the agency's FY 2014 Budget Request to Congress, which will be available February 4, 2013 at www.nsf.gov/about/performance.

¹⁷ See www.whitehouse.gov/omb/mgmt-gpra/index-gpra.

¹⁸ OMB Circular A-11, *Preparation, Submission, and Execution of the Budget* (Part 6); see www.whitehouse.gov/omb/circulars_a11_current_year_a11_toc.

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.

Figure 4: NSF Strategic and Performance Goals



FY 2012 Progress Toward Strategic and Priority Goals

In FY 2012, NSF tracked progress toward three strategic goals and three Priority Goals. All program activities within the agency were covered by the 15 targets used to monitor the three strategic goals. A list of these targets can be found in Appendix 5 of this report.

Transform the Frontiers. Progress towards this goal's objectives involved measuring a combination of new and pre-existing activities.

- Two new programs worked to establish funding mechanisms more flexible and adaptable to current realities: INSPIRE supports unusually novel, potentially transformative, and interdisciplinary research, while Career-Life Balance investments support greater use of the talents of Americans in all sectors of the population.
- All NSF-funded facilities under construction kept cost variance within 10 percent of targets. All but one construction project kept schedule variance within 10 percent of targets.
- Funding opportunities were screened for possible international implications by the Office of International Science and Engineering.

Innovate for Society. In FY 2012, NSF met the objectives under this strategic goal by the applying new approaches to the design and monitoring of existing portfolios.

- In the Directorate for Engineering, the Division of Industrial and Innovation Partnerships (IIP) continued to develop tools to monitor its portfolio of investments. Baseline data were collected for the number of partnerships made by companies in IIP.
- The Directorate for Education and Human Resources has been leading efforts to establish a single set of evidentiary standards for programs in different parts of the Foundation that have thematic, if not organizational, linkages. In FY 2012, the themes were: K-12 education ready for scale-up, public understanding and communication of science, and innovative learning systems/cyberlearning.

Perform as a Model Organization. Targets to achieve this strategic goal focused in FY 2012 on human resources development, customer service, and technological upgrades.

- Seventy-eight percent of applicants were informed whether their proposals were declined or recommended for funding within 6 months of submission. This exceeded the target of 70 percent.
- A training module was developed for program officers on how to use virtual meeting technology in merit review processes.
- As in previous years, NSF took steps toward achieving “Model EEO Agency” status.
- For the second year, NSF’s temporary scientific staff members were included under the same performance management system used for full-time employees.
- The Division for Human Resources Management completed an agency-wide training needs assessment and delivered an action plan for improving NSF’s employee management systems.
- The contract to replace NSF’s financial system was awarded.

Priority Goal—Undergraduate Programs. This priority goal addresses NSF’s long-term core commitment to the role of undergraduate education in engaging and preparing a diverse and highly qualified science and engineering workforce. While many factors influence whether students stay in science, technology, engineering, and mathematics (STEM) majors, one challenge students report is lackluster introductory courses that do not provide the support they need to succeed in STEM classes. Research shows that evidence-based instructional practices lead to improved student learning, making them a useful metric for assessing the impact of educational practices on a well-prepared workforce. In order to encourage and facilitate the use of empirically-based instructional practices in STEM undergraduate education, NSF must first establish baseline information about their use. While the ultimate deadline for this goal is the end of FY 2013, NSF met the interim deadlines for FY 2012. The Priority Goal Group established that institutions of higher education that received NSF funding for STEM education as of September 30, 2012, will be counted among the metrics for this goal.

For this goal, NSF adopted multiple strategies, which cover a wide variety of regular NSF processes such as solicitation development, monitoring system development, data collection, and outreach. Progress toward quantitatively meeting this goal should also contribute to improvement on and better coordination of these NSF processes. For more details, refer to the Priority Goal section of www.performance.gov.

Priority Goal—NSF Innovation Corps. The NSF Innovation Corps (I-Corps) is a set of activities and programs that prepares scientists and engineers to extend their focus beyond the laboratory and broadens the impact of select, NSF-funded basic research projects. While knowledge gained from these projects frequently advances a particular field of science or engineering, some of the research results also show immediate potential for broader applicability and impact in the commercial world. These results may be translated through I-Corps into technologies with near-term benefits for the economy and society. Combining experience and guidance from established entrepreneurs with a targeted curriculum, I-Corps is a public-private partnership program that teaches grantees to identify valuable product opportunities that might emerge from academic research. I-Corps also offers entrepreneurship training to student participants.

In FY 2012, a total of 100 teams were accepted into the six-month program. The completion rate was 93 percent, well above the 80 percent target. For more details, refer to the Priority Goal section of www.performance.gov.

Priority Goal—Access to Digital Products. Digital data are increasingly becoming one of the primary products of scientific research. Access to the digital products of research enhances openness and transparency in the scientific enterprise and enables new types of multi-disciplinary research and education. Therefore, it is increasingly important for NSF to facilitate and encourage access to data and research results. This Priority Goal supports collaborative and multidisciplinary science by enabling data to flow more easily across traditional disciplinary boundaries. While the ultimate deadline for this goal is the end of FY 2013, NSF met the interim target for FY 2012 to convene a cross-agency group that would assess the state of NSF's policies in this area and make recommendations to the Goal Leader. The group determined that many NSF-funded large facilities, which represent their scientific domains, already have established policies for public access to high-value data and software. For example, in earth sciences, the National Center for Atmospheric Research (NCAR) provides the online Community Data Portal, which is a collection of earth science datasets from NCAR and other participating organizations. The portal hosts over 8,000 datasets in over one million files, and has resulted in over 2,000 registered users downloading over four terabytes of data. The Community Data Portal also provides access to five separate high-value software packages for earth science data analysis. The group recommended that future activities towards achieving this goal should shift the focus from large facilities to other types of NSF investments. For more details, refer to the Priority Goal section of www.performance.gov.

Recovery Act Performance Results

In FY 2012, NSF continued implementing our three programs funded through the American Recovery and Reinvestment Act (ARRA): R&RA, 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."²¹ NSF targets investments that fuel economic growth by yielding new discoveries that will enhance future productivity and help prepare a dynamic U.S. workforce.



Photo credit: L. Phelps, ATST/NSO/AURA/NSF. Image is a rendering of ATST atop the construction site at the Haleakala High Altitude Observatory on Maui, Hawaii.

NSF's entire ARRA portfolio of more than 5,000 awards and \$3 billion has been obligated since the end of FY 2010. Our key focus for FY 2012 continued to be monitoring awardee performance, including compliance with requirements for quarterly recipient reporting;

Funded in part by the American Recovery and Reinvestment Act of 2009, the Advanced Solar Technology Solar Telescope (ATST) will be the largest solar telescope constructed in the world, with unprecedented abilities to view details of the sun. Using adaptive optics technology, ATST will be able to provide the sharpest views ever taken of the solar surface, which will allow scientists to learn even more about the Sun and solar-terrestrial interactions. As the design and planning phase is coming to an end, the project hopes to begin construction before the end of calendar year 2012.

assessing ARRA lessons learned; and continuing effective awardee communication, outreach, and oversight to ensure the timely expenditure of award funds. ARRA outlays were \$2.1 billion as of September 30, 2012. FY 2012 ARRA activities included:

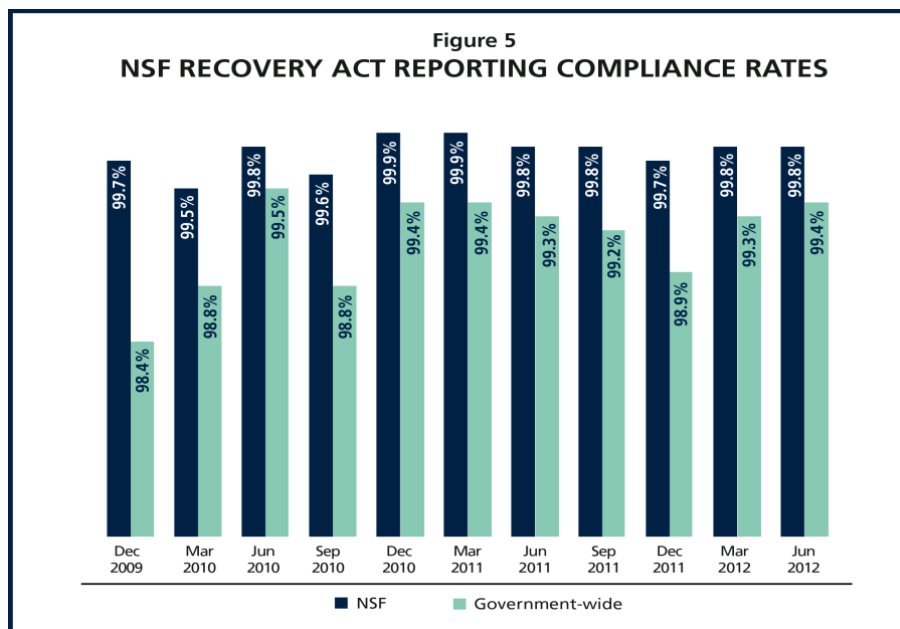
- **Monitoring compliance with ARRA recipient report requirements and enhancing NSF review program.** As noted previously, NSF continued to implement a comprehensive, multi-stage review program for recipient reporting. Our effective program and 99 percent compliance rate over the last eleven reporting quarters firmly establish NSF as a leader on which the accountability and transparency community can rely for government-wide process-improvement recommendations.²² Figure 5 depicts NSF's recipient reporting results over the past eleven quarters compared to the government-wide average.

Also in FY 2012, NSF collaborated with the Recovery Accountability and Transparency Board (RATB) to run our recipient reporting data through the RATB-designed FastAlert system. FastAlert provides agency and oversight officials a one-stop shop for quickly reviewing data sources for adverse information on existing or potential awardees. The RATB expects FastAlert to reduce cost/time in agency manual checks, liability, and improper payments. This effort not only supported the RATB's government-wide fraud, waste, and abuse goals, but also gave NSF a chance to test and

²¹ 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.

²² NSF has overseen twelve recipient reporting quarters to date, delivering compliance rates of 99 percent over the last eleven quarters, with several quarters at 99.8 percent.

confirm the adequacy of its internal controls. Ultimately, NSF's data run was successful, disclosing no unexpected or major issues.



- **Assessing ARRA “lessons learned.”** In FY 2012, NSF focused on identifying and assessing which processes and mechanisms were effective or posed challenges in implementing and administering ARRA programs. Learning what worked and what did not can help to improve transparency and accountability of federal funds. Some of NSF’s lessons learned from implementing the Recovery Act are summarized below:
 - *Expenditure monitoring.* Because ARRA required awardees to spend funds quickly, NSF monitored expenditure rates and included an award provision that ARRA awardees must begin spending funds within 12 months of the award date or risk award termination. Now, we have begun developing processes and tools to help agency business and program staff monitor awardee expenditures and spending rates for all NSF awards.
 - *Data quality/financial system modernization.* ARRA required NSF to implement an extensive data quality plan to review recipient quarterly reporting data. Now, NSF is implementing system edits to Central Contractor Registration (CCR) verification and zip codes to strengthen our award data. We anticipate applying these lessons learned as we plan our financial system modernization.
 - *Outreach and communication.* ARRA required an enormous outreach and communication effort. NSF built on our existing culture of communication with award recipients to ensure that all viable communication techniques were used as appropriate. For example, NSF used virtual technology, such as webcasts, during early phases of ARRA implementation; emails and staff phone calls to enhance our recipient reporting and “burn rate” monitoring programs; speaking and participation in external stakeholder meetings in all appropriate instances; and early and continual communications outreach to research administration communities (including through social media) in connection with NSF’s implementation of OMB Memo 11-34. NSF will continue to use all technologies and strategies as appropriate in the future.
 - *Workplace flexibilities/increased workload.* Because ARRA represented an unprecedented and unexpected infusion of funds for NSF to obligate by a date certain, the impact on staff workload was substantial. To deal with the increased workload, NSF extended workplace flexibilities, such

as allowing telework on the weekends and earlier work start times for the NSF office most impacted. Recently, NSF implemented a new policy allowing all agency staff to start work at an earlier time. We are considering other flexibilities as we expand our telework program.

The government-wide ARRA lessons learned review will be released by the RATB in FY 2013. In addition to the above, the process of assessing ARRA lessons learned presented an opportunity for NSF management and our Office of Inspector General to think collaboratively about the shared goals of stewardship, accountability, risk management, and effective oversight.

- **Continued communication with awardees to ensure the timely expenditure of ARRA funds.** In FY 2012, NSF concluded its “burn rate monitoring” program launched to implement Article 1(e) of ARRA Terms and Conditions, dated May 2009, which required that ARRA awardees begin making expenditures within the first 12 months of their awards or risk award termination.²³ Throughout the program, no award was terminated for this reason. NSF implemented a multi-level awardee outreach initiative to achieve this success. The initiative connected NSF financial contacts 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.

In FY 2013, NSF will continue to implement our recipient reporting program, working with RATB and the Government Accountability and Transparency Board (GATB) as appropriate. We will continue our enhanced outreach and communication with ARRA awardees. We will also continue to implement OMB M-11-34 to accelerate ARRA expenditures. Finally, we will use ARRA lessons learned to inform NSF-wide management practices, particularly in the area of expenditure monitoring.

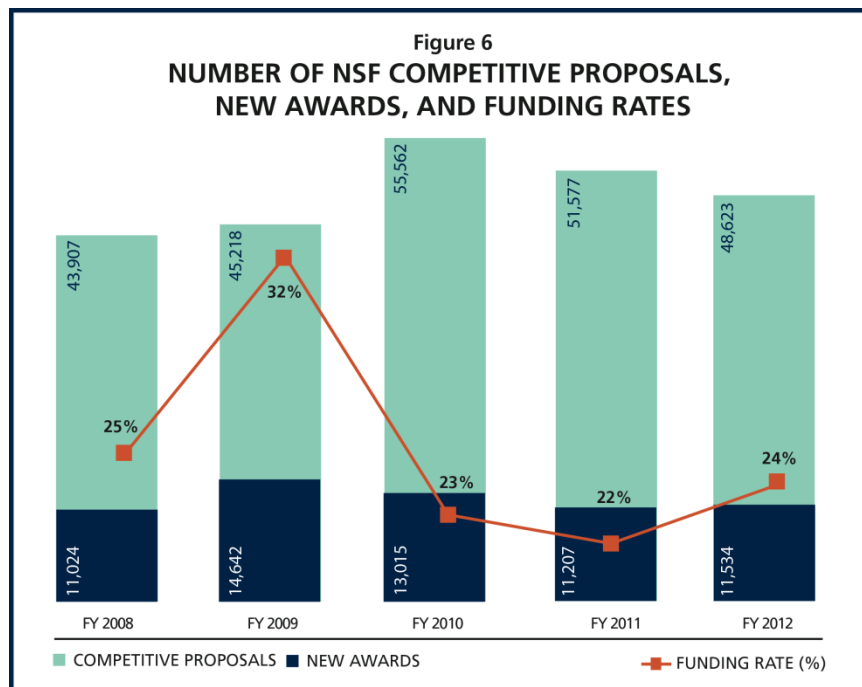
Workload and Management Trends

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

- In FY 2012, the number of competitive proposals reviewed by NSF decreased 6 percent (by 2,954 proposals), to 48,623 (Figure 6). Most of this decrease reflects the drop in the number of proposals received by the Directorate of Biological Sciences (BIO). In an effort to address workload issues, in FY 2012, BIO introduced a pre-proposal step for solicitations to reduce the number of full proposals. At the same time, half of BIO divisions chose to go to one deadline a year. The number of proposals received by BIO dropped by nearly 30 percent, from 7,437 in FY 2011 to 5,271 in FY 2012. Similarly, in the Directorate for Engineering (ENG) a single submission window was put in place by 17 programs in the Division of Chemical, Bioengineering, Environmental, and Transport System (CBET), which resulted in a decrease of over 600 proposals.
- In FY 2012, the number of new awards increased 3 percent, to 11,534. The increase in new awards coupled with a decrease in the number of competitive proposals resulted in an increased funding rate, from 22 percent in FY 2011 to 24 percent in FY 2012. There was an increase of 327 new competitive awards in FY 2012.

²³ NSF ARRA Terms and Conditions, dated May 2009, can be found at www.nsf.gov/pubs/policydocs/arra/arratc_509.pdf

- The average annual award size decreased 2 percent, to \$169,217 in FY 2012. The FY 2012 average annual award size is more than 3 percent below the average annual award size of \$175,435 of the previous 4-year period, which included funding from ARRA. Adequate award size is important for enabling science of the highest quality and ensuring that the proposed work can be accomplished as planned. Larger award size may also permit the participation of more students and allow investigators to devote a greater portion of their time to conducting research.²⁴



- NSF's workforce in terms of full-time equivalents (FTE) was 1,415, unchanged from the previous year. FTE has increased at an average annual rate of 1 percent since FY 2008 while the number of competitive proposals has increased at an average annual rate of 3 percent during this same period (Figure 7).
- There was a minimal increase (18) in the number of active awards FY 2012, in contrast to the increase in FY 2011 of 965.
- 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). For FY 2012, 90 percent of the FFRs were submitted by the due date and 99.91 percent of the FFRs (6,939 of 6,945) were submitted by the end of the reporting period. High FFR submission levels can be attributed to increased emphasis on timely reporting. The high FFR submission rate contributes directly to the overall accuracy and completeness of NSF grant expenses as reported on NSF financial statements.
- NSF's emphasis on grantee cash monitoring has resulted in continual improvement in cash management by grantees, resulting in less governmental risk and improved cash flow for NSF. Unexpended federal cash held by grantees has decreased to \$16 million in FY 2012, from a quarterly

²⁴ See *Report to the National Science Board on the NSF's Merit Review Process, FY 2011* (NSB-12-28) at <http://www.nsf.gov/nsb/publications/2012/nsb1228.pdf>.

average of \$26 million in FY 2008. During the same 5-year period, NSF payments to grantees have increased by 35 percent.

Figure 7. Workload and Management Trends

Measure		FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	Rate of Change (FY 2012/ FY 2011)	Annual Rate of Change, FY 2008 FY 20 12
Portfolio	Competitive proposal actions	43,907	45,218	55,562	51,577	48,623	-6%	3%
	Competitive award actions	11,024	14,642	13,015	11,207	11,534	3%	1%
	Average annual award size (competitive awards)	\$167,300	\$172,569	\$189,338	\$172,533	\$169,217	-2%	<1%
	Funding rate	25%	32%	23%	22%	24%	-2% points	25% ***
Workload	Number of employees (FTE, usage)	1,339	1,386	1,424	1,415	1,415	0	1%
	Number of active awards*	48,799	52,858	55,449	56,414	56,432	<1%	4%
	Proposal reviews conducted	248,772	241,712	287,017	262,005	235,654	-10%	-1%
Financial	Cash-on-hand** (in millions)	\$26	\$26	\$19	\$21	\$16	-24%	-10%
	Number of grant payments	19,481	25,723	22,782	29,214	28,016	-4%	11%
	Federal Financial Reports (FFR) submitted	99.80%	99.60%	99.80%	99.89%	99.91%	<1% point	99.80% ***

* Active Awards include all active awards regardless of whether they received funding during the fiscal year.

** FY 2012 is through the third quarter.

*** Average rate from FY 2008 to FY 2012.

- In FY 2012, NSF conducted a statistical review of FFR expenditures for improper payments. Consistent with prior year results, the error rate noted in the review by an independent consultant was well below the materiality levels defined in OMB standards. NSF intends to continue its grant expenditure sampling process as part of our integrated and comprehensive grant financial monitoring program strategy.
- For FY 2012, 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 ARRA awards. This increased activity level is gradually diminishing as NSF begins the close-out process for these awards. In January 2013, NSF will begin implementation of the Award Cash Management Service (ACM\$). ACM\$ will transition NSF awardees from the pooling process for grant payments to providing award level detail at the time of the payment request.

Financial Discussion and Analysis

In FY 2012, NSF upheld its commitment to incorporate performance and accountability within all programs and operations. The agency's leadership is dedicated to improving efficiency while providing useful and significant information to staff and stakeholders, to enable better management and resource allocation decisions in the current environment of fiscal austerity. Through an innovative internal control approach, NSF validated its controls to provide assurance that they are functioning effectively; see discussion on NSF's Internal Control Quality Assurance Program on page I-23.

During the past year, NSF pursued information technology (IT) advancements that will ensure the availability of relevant, reliable, and timely accounting and management information. After a 4-year planning and pre-acquisition phase, in September 2012 NSF awarded a contract to modernize the agency's 25-year-old financial accounting system. The new iTRAK system will increase the agency's capabilities for more informed operational and programmatic decision-making and improve the effectiveness and efficiency of financial and business processes. (For more details, see the discussion on Financial System Strategy on page I-27.) NSF also began development of an Award Cash Management Service (ACM\$). The ACM\$ will transition NSF awardees from the pooling process for grant payments to an award level process at the time of the payment request.

NSF achieved another year of very low improper payment rates in FY 2012. NSF was one of the first agencies to pilot the use of centralized solutions for preventing improper payments through the Do Not Pay List (DNP); see the discussion on Improper Payments Elimination and Recovery Act of 2010 (IPERA) on page I-26. By implementing the DNP Solution, the agency is integrating the requirements of IPERA with existing policies and procedures for award management.

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, 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, 2012 and 2011.

For FY 2012, NSF received its 15th consecutive unqualified audit opinion. The audit report noted no material weaknesses. However, it repeated the prior year significant deficiency on the monitoring of construction type cooperative agreements. NSF management concurs with the overall need to strengthen controls in this area but disagrees with key aspects of the significant deficiency. NSF management will continue to work with the Office of Inspector General and its auditors to reach agreement and resolve the audit findings. A detailed discussion of the independent audit is included in the audit report, which can be found on page II-3. Management's response to the audit report can be found on page II-15.

Understanding the Financial Statements

NSF's FY 2012 financial statements and notes are presented in accordance with OMB Circular 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 8 summarizes the changes in NSF's financial position in FY 2012.

Figure 8. Changes in NSF's Financial Position in FY 2012 (dollars in thousands)

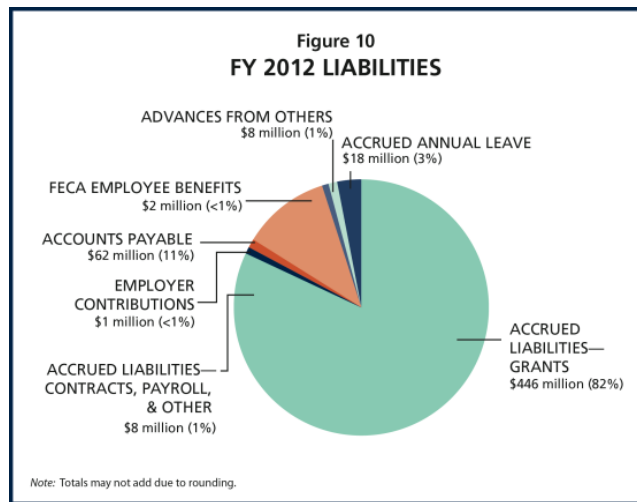
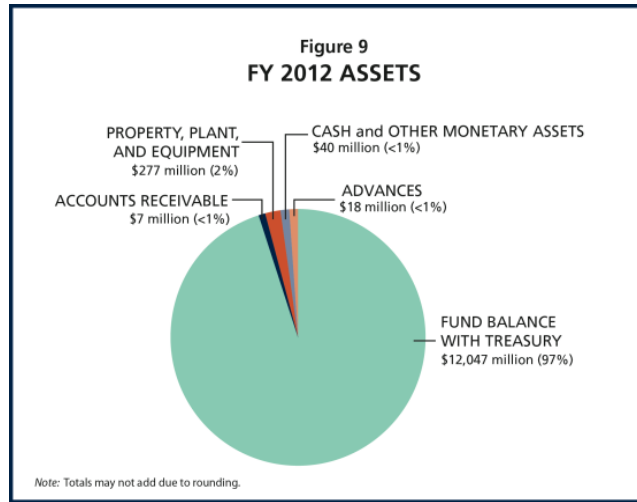
Net Financial Condition	FY 2012	FY 2011	Increase/ (Decrease)	% Change
Assets	\$12,388,642	\$12,584,734	(\$196,092)	-1.6%
Liabilities	\$543,474	\$581,123	(\$37,649)	-6.5%
Net Position	\$11,845,168	\$12,003,611	(\$158,443)	-1.3%
Net Cost	\$7,335,657	\$7,139,994	\$195,663	2.7%

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 2012, *Total Assets* (Figure 9) decreased 1.6 percent from FY 2011 assets. The bulk of the change occurred in the *Fund Balance with Treasury* account, which decreased by \$127.9 million in FY 2012. *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. The *Advances* balance also decreased \$51.5 million, as the United States Antarctic Program (USAP) contract ceased to be operated on an advanced basis with quarterly expense reporting and is now on a biweekly reimbursable cycle.

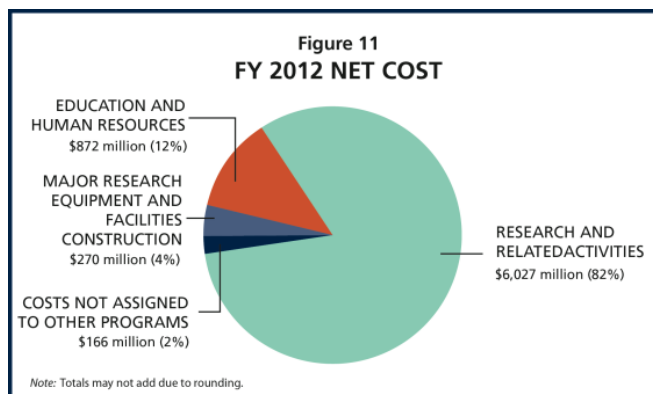
NSF's *Total Liabilities* (Figure 10) decreased by 6.5 percent in FY 2012. The majority of this change is related to the decrease in *Accrued Liabilities—Contracts, Payroll, & Other* balance,



as NSF no longer accrues quarterly for the USAP contract addressed above. *Advances From Others* also decreased as a result of NSF's strides to encourage its partnering agencies to work on a reimbursable basis.

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 96 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 4 percent of the total current year Net Cost of Operations (Figure 11). 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 1.3 percent, or \$158.4 million, in FY 2012.

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 2012, *Total Budgetary Resources* increased by \$225.3 million. *Budget Authority—Appropriation* for the R&RA, EHR, and MREFC accounts were \$5,719 million, \$829 million, and \$167.1 million, respectively. The combined new *Budget Authority—Appropriation* in FY 2012 for the NSB, OIG, and AOAM accounts totaled \$318 million. NSF also received funding via warrant from the special earmarked H-1B receipt account in the amount of \$129 million, and via donations from foreign governments, private companies, academic institutions, nonprofit foundations, and individuals in the amount of \$47.2 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 2012 and 2011, these costs amounted to \$333.7 million and \$337.2 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 2012 financial statements, which appear in Chapter 2 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 \$6.7 million at September 30, 2012. Of that amount, \$6.5 million is due from other federal agencies. The remaining \$184,000 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 2012, NSF had no awards covered under Cash Management Improvement Act (CMIA) Treasury-State Agreements. NSF's FastLane system with grantee draws of cash makes the timeliness of payments issued under the Act essentially not applicable to the agency. No interest payments were made in FY 2012.

Systems, Controls, and Legal Compliance



National Science Foundation FY 2012 Statement of Assurance

The National Science Foundation (NSF) management is responsible for maintaining effective internal control and financial management systems that meet the objectives of the Federal Managers Financial Integrity Act of 1982 (Integrity Act), as well as related laws and regulations. The agency is required to perform an evaluation of management and financial system internal control as required by Sections 2 and 4 of the Integrity Act.

NSF's internal control program is designed to ensure full compliance with the objectives of the Integrity Act, laws and regulations, and Office of Management and Budget (OMB) guidance, including: (1) OMB Circular No. A-123, *Management's Responsibility for Internal Control*, including Appendix A, *Internal Control over Financial Reporting*; Appendix B, *Improving the Management of Government Charge Cards*; Appendix C, *Requirements for Effective Measurement and Remediation of Improper Payments*; and *Conducting an Acquisition Assessment Under OMB Circular A-123*; (2) OMB Circular No. A-127, *Financial Management Systems*; and (3) OMB Circular No. A-130, *Management of Federal Information Resources*.

NSF completed its evaluation and carefully considered the appropriate balance between controls and risk in programs and operations. Based on the results of these evaluations, NSF provides reasonable assurance that as of September 30, 2012, its internal control 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 control under Section 2 of the Integrity Act and no system non-conformances were identified under Section 4 of the Integrity 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, 2012, 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 internal control.

For FY 2012, NSF is providing an unqualified statement of assurance that its internal control and financial management systems meet the objectives of the Integrity Act, as well as related laws and guidance.

A handwritten signature in black ink, appearing to read "Subra Suresh".

Subra Suresh
Director

November 15, 2012

Management Assurances

Federal agencies are subject to numerous legislative and regulatory requirements that promote and support effective internal control. The Integrity Act provides the statutory basis for management's responsibility for and assessment of internal control. In addition, the Chief Financial Officers (CFO) Act of 1990 requires agency CFOs to "develop and maintain an integrated agency accounting and financial system, including financial reporting and internal controls."

The Integrity Act requires federal agencies to establish internal control and financial systems that provide reasonable assurance that the three objectives are achieved: (1) effectiveness and efficiency of operations, (2) compliance with applicable laws and regulations, and (3) reliability of financial reporting.

Agencies are also required to report on the effectiveness of internal control over financial reporting, the safeguarding of assets, and compliance with applicable laws and regulations, in accordance with the requirements of Appendix A of OMB Circular A-123, *Management's Responsibility for Internal Control*. The head of the agency, based on an annual evaluation, provides a Statement of Assurance as to whether the agency has met these requirements.

The NSF Director has provided an unqualified Statement of Assurance for FY 2012. The agency evaluated its management control systems and financial management systems for the fiscal year ending September 30, 2012. This evaluation provided reasonable assurance and formed the basis for the Director to state, in the Statement of Assurance, that the objectives of the Integrity Act were achieved for FY 2012

Highlights from NSF's Internal Control Quality Assurance Program

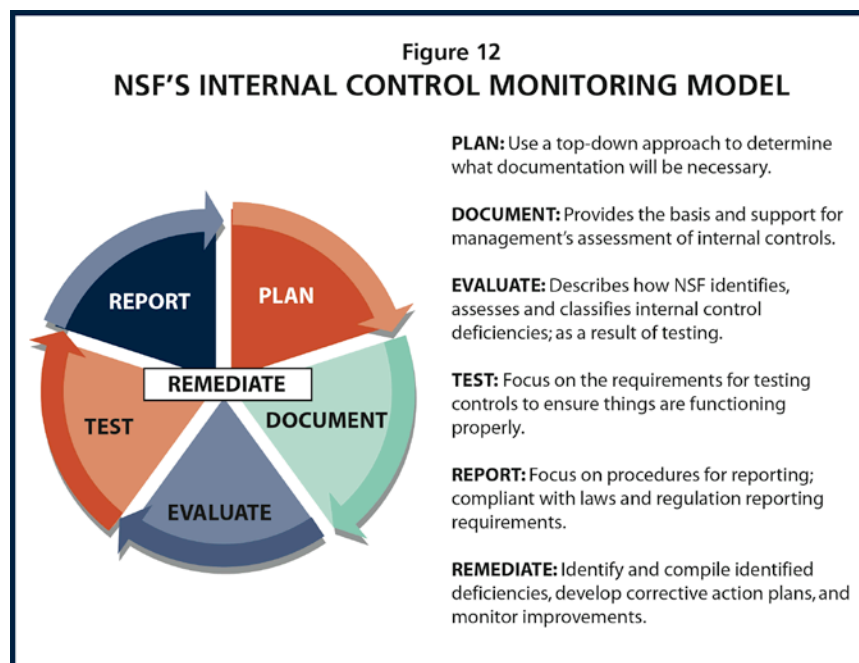
In FY 2012, NSF's Internal Control Quality Assurance Program had significant accomplishments related to both new and ongoing initiatives. Management's ongoing internal control review for 11 business processes for the period July 1, 2011 through June 30, 2012, determined that the agency's internal control was adequately designed, properly executed, and effective. This was the result of a concerted effort on an ongoing basis to systematically document, test, evaluate, and improve NSF's internal control processes. This process also encouraged standardization of similar processes in use in different parts of the agency.

The growing open government movement emphasizing transparency, collaboration, and participation is supported throughout NSF's internal control reviews and corrective actions. NSF gained efficiencies in time and attendance with the implementation of WebTA, a web-based time and attendance solution that simplifies time keeping with online functionality that allows employees to request leave and premium pay and to donate leave. WebTA, which is nearly paperless, has streamlined the request process and enhanced transparency in the collection, delivery, and use of workforce information. Time is saved with a default timesheet that automatically pre-populates time entries for each pay period, reducing transaction errors and manual processing.

NSF's Integrated Approach for Monitoring Internal Control

NSF implements the Committee of Sponsoring Organizations of the Treadway Commission (COSO) integrated framework to monitor internal control. NSF's internal control model for monitoring internal control consists of planning, documenting, evaluating, testing, reporting, and remediation. According to COSO, an effective approach to monitoring includes an assessment/reporting of results, as well as follow-up for any corrective action plans. Figure 12 displays and describes NSF's internal control monitoring model.

Internal control is the key to accountability and transparency in reporting. NSF has a mature internal control program monitored by management and strives for continuous improvement.



Conference Review

NSF conducted a thorough review of policies and controls associated with conference-related activities and expenses as prescribed in OMB Memorandum M-11-35, *Eliminating Excess Conference Expense Spending and Promoting Efficiency in Government*. NSF management conducted a review of all conference types to determine if action was needed to mitigate the risk of inappropriate spending practices with regard to conference, approval of conference-related activities, and expenses. Simultaneously, the OIG performed a conference audit of staff retreats.

The internal control team (review) and the OIG (audit) worked jointly to conduct an NSF-wide data call to eliminate duplication of efforts and gain efficiencies. Other tasks performed jointly included standardization related to conference definitions and conference types, combined town hall meetings and sharing of data. These efforts allowed NSF to complete the review and audit efficiently. Although there were no significant deficiencies identified in the review or the audit, NSF plans to address steps to improve the planning and execution and to strengthen transparency and accountability for conference activities.

The United States Antarctic Program Property, Plant, & Equipment

During the FY 2012 internal control testing period, the United States Antarctic Program (USAP) contract transitioned to a new contractor. Transactional testing on additions, deletions, and transfers of real property and capital equipment was limited to transactions prior to June 30, 2012, all of which were from the previous contractor. Although recommendations to improve business process documentation were made during the control design assessment and process walk-through with the new contractor, there were no deficiencies identified in the design of the controls.

Acquisition Assessment

In FY 2012, NSF completed an acquisition assessment utilizing the guidelines and template developed by the Office of Federal Procurement Policy (OFPP), in consultation with the Chief Acquisition Officers Council. The OFPP template design supported a comprehensive and standardized assessment for entity level reviews and was aligned and integrated with the agency's existing internal control review process. This allowed NSF to conduct entity- and process level reviews of the acquisition function using a systematic methodology.

NSF has included performance-based elements in some recent contracts. These elements include performance measures and award fee arrangements. All are hybrid contracts with use of time and materials, cost, and/or fixed price structures. NSF plans to continue emphasizing performance-based contracts, strategic sourcing, and strategies to save money.

Included in the annual contracts management review was a review of the charge card process. Testing, interviews, and walk-throughs were conducted to monitor and assess controls and to ensure that transactions were properly authorized, processed accurately, and the data was valid and complete. The review was conducted in accordance with the OMB Circular A-123 Appendix B; no significant deficiencies were identified for FY 2012.

Information Technology Assessments

NSF's information technology review was performed in accordance with the National Institute of Standards and Technology (NIST) Special Publication 800-53. The FY 2012 IT review consisted of testing the Awards, eJacket and Financial Accounting System to validate the operation and design effectiveness of 52 NIST controls. No significant deficiencies were identified.

In accordance with OMB Circular A-127, *Financial Management Systems*, NSF applied the risk assessment tool as directed. NSF's Financial Accounting System remains at the moderate risk level. There were no significant deficiencies identified and the agency is in substantial compliance with the Federal Financial Management Improvement Act (FFMIA). NSF's ongoing goal is to improve operational processes and implement new technological developments. NSF's strategy to replace its aging financial system to a fully integrated financial management solution is discussed in the "Financial System Strategy" section.

Improper Payments Elimination and Recovery Act of 2010

The Improper Payments Information Act of 2002, as amended by IPERA and OMB Circular A-123, Appendix C, *Management's Responsibility for Internal Control: Requirements for Effective Measurement and Remediation of Improper Payment*, 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. From FY 2010 to FY 2011, NSF received relief from the annual reporting due to the very low improper payment rates reported in its *FY 2009 Agency Financial Report*. However, during this relief period, NSF remained vigilant and continued risk-based grant expenditure sampling for improper payments in support of the NSF post-award grant monitoring program. These efforts were successful in ensuring that NSF's program remained low risk.

In FY 2012, NSF conducted a statistical review of its FY 2011 Federal Financial Report transactions received from grant recipients. Consistent with prior year results, the occurrence of NSF improper payments continues to be well below the significant standard of improper payments, which is defined by OMB as exceeding \$10 million and 2.5 percent of total outlays.

In addition, in compliance with IPERA and Circular A-123, NSF evaluated its grants and contracts oversight processes. The agency determined that it was not cost-effective to establish a formal Recapture Audit Program. NSF is leveraging its existing oversight policies and procedures to meet the intent of OMB's requirements on improper payments. Details of NSF's IPERA reporting can be found in Appendix 2.

NSF has been actively participating in OMB's Do Not Pay (DNP) initiative to reduce improper payments. The agency's goal is to incorporate the DNP solution fully into its pre-award review process for all grants and cooperative agreements. NSF provided OMB its most recent plan for implementing the DNP Solution in mid-September 2012. The DNP Solution complements NSF's existing policies and procedures for award management, and the agency has already begun incorporating the new functionality into its award management process. NSF is also automating the reviews and centralizing the pre-award verification. This will create efficiency gains by reducing the workload for manual verification.

Financial System Strategy

NSF's financial system goals are to increase capabilities for more informed operational and programmatic decision-making, improve effectiveness and efficiency of financial and business processes, and enhance financial and business accountability, integrity, and compliance. In an effort to achieve these goals, NSF is modernizing its financial management capabilities with a commercial-off-the-shelf (COTS) core financial management system and key interfaces hosted in a shared service environment. This effort is known as iTRAK.

Strategic Overview

The CFO Act assigns clear responsibilities for planning, developing, maintaining, and integrating financial management systems within federal agencies. As depicted in the current system diagram on page I-29, NSF currently maintains a core accounting system, Financial Accounting System (FAS), and various grants management systems to support NSF's mission. Financial systems strategies for the future include:

- 1) Implementing iTRAK Phase 1, a COTS core financial management solution hosted in a shared services environment in accordance with OMB Memorandum M-10-26, *Immediate Review of Financial Systems IT Projects*, and compliant with Federal Financial System guidance including A-127, *Financial Management Systems*, and government-wide accounting and reporting requirements.
- 2) Implementing future iTRAK phases including integration of Acquisition, Property, and Budget formulation systems with the COTS core financial system (upon funding availability).
- 3) Transition from the pooling method of grant payments to a grant-by-grant method.

These strategies support NSF financial management system goals of increasing capabilities for more informed operational and programmatic decision-making, improving effectiveness and efficiency of financial business processes, and enhancing financial and business accountability, integrity, and compliance.

Ongoing Financial System Initiatives

To achieve these strategic goals, NSF continues to make substantial progress in financial systems modernization and improvement efforts in pursuit of its targeted financial management systems framework.

Major efforts include:

1) *Implement COTS Core Financial System*

iTRAK will modernize NSF's current financial management environment and will provide an integrated financial management and business solution. The use of a Shared Service Provider (SSP) will allow for a more cost effective financial solution and services through economies of scale. The project successfully completed activities related to the planning and acquisition phases of the NSF Project Management Lifecycle and will move into the implementation phase in FY 2013.

To support NSF stakeholders and improve access to reliable and consistent financial data, NSF is currently assessing user reporting requirement needs, eliminating redundant and obsolete financial reports, and modernizing financial reporting capabilities. iTRAK will enable NSF to achieve process efficiencies and economies of scale in financial management operations and the provision of timely, accurate data for NSF stakeholder decision-making.

2) *Implement Future iTRAK Phases*

Through new functional capabilities and business process automation and standardization through integration of Acquisition, Property, and Budget formulation systems with the COTS core financial system, iTRAK will help to improve NSF's operational excellence and enable efficient, effective execution of financial activities and business operations. To fully realize these benefits, NSF plans to integrate other financial applications with iTRAK to provide seamless transactions and data. These applications include Acquisition, Property and Budget formulation systems that are planned to be integrated with iTRAK in later phases and as resources permit.

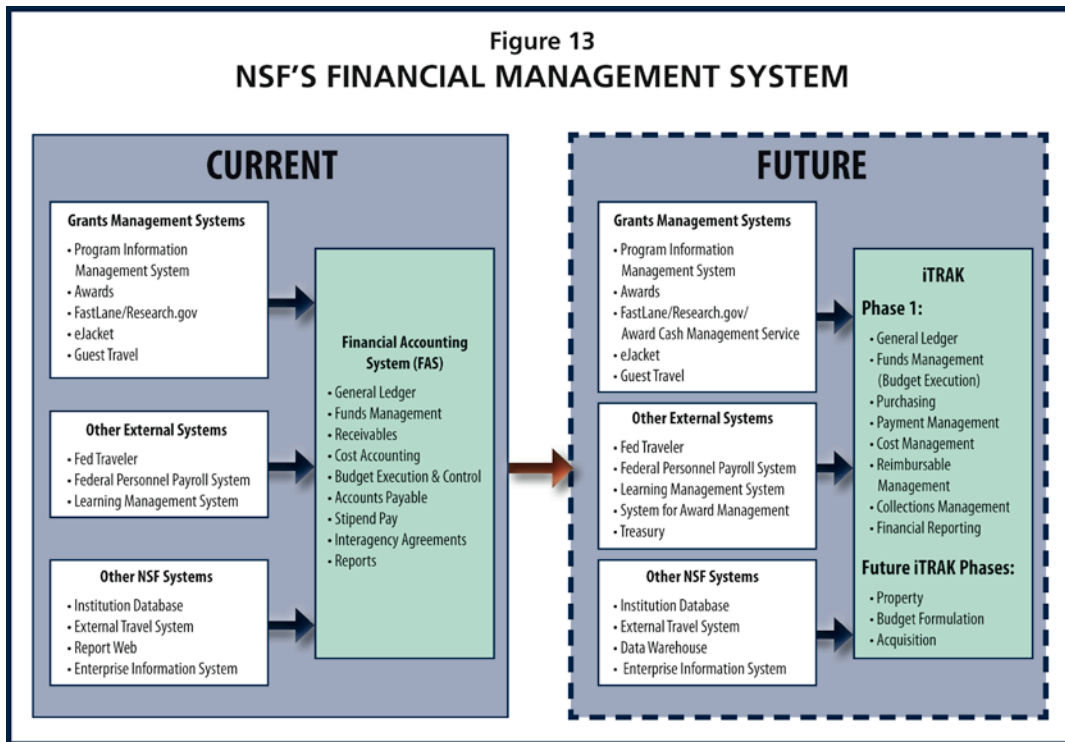
3) *Transition from Pooling Method of Grant Payments to Grant-by-Grant Method*

In preparation for transitioning to iTRAK, NSF is developing a new system to award payments and support associated post award processes. This initiative is known as the Award Cash Management Service (ACM\$) and will be implemented by January 2013. By changing to this payment method, NSF's business processes will better align with the functionality in a COTS financial system; allow for greater transparency and increased efficiencies; and tighter controls on the drawdown of funds, including contingency funds.

ACM\$ will provide grantees and financial staff the ability to submit cash and adjustment requests, as well as access information on detailed payments and award balances at the grant level. ACM\$ offers the benefit of making the payment request functionality more in line with university accounting practices and will replace both the cash request and Federal Financial Report functionality that is currently done in the agency's grant management system, FastLane.

Financial Management Systems Framework

Figure 13 compares NSF's current Financial Accounting System (FAS) and iTRAK, NSF's future financial management and reporting solution. In September 2012, a system implementation contract was awarded to Accenture Federal Services, LLC. The new system is expected to go live by October 1, 2014.





Chapter 2
Financials



A MESSAGE FROM THE CHIEF FINANCIAL OFFICER



Credit: Sandy Schaeffer

I am pleased to report that for fiscal year (FY) 2012 the National Science Foundation (NSF) received its 15th consecutive unqualified audit opinion, affirming that NSF's financial statements for the year ended September 30, 2012, were presented fairly in all material respects and in conformity with U.S. generally accepted accounting principles. The audit report includes no material weaknesses. However, it repeats the prior year significant deficiency on the monitoring of construction type cooperative agreements. We concur with the overall need to strengthen our controls in this area but disagree with key aspects of the significant deficiency. We will continue to work collaboratively with the Office of Inspector General and its auditors to understand and resolve this complex issue.

As the federal sector including NSF continues to operate in an environment of fiscal austerity, an underlying agency-wide goal has been to manage programs and resources more efficiently and effectively to reduce administrative costs, in accordance with Executive Order 13589, *Promoting Efficient Spending*, and Office of Management and Budget (OMB) guidance. The financial management leadership also remains focused on providing timely and useful information to enable managers to make better resource allocation decisions. Notable efforts undertaken during the year include the following:

- **Reduce operating costs:** Across the board, NSF made significant progress towards reducing certain administrative costs by identifying and implementing efficiencies, prioritizing work, eliminating or scaling back the scope of some activities, and exploring new ways of getting the job done. Agency-wide travel targets to improve oversight and prioritization of travel funding were implemented, resulting in a \$2.33 million (9 percent) reduction of FY 2012 travel (obligations) from FY 2010 levels. New reports facilitated the monitoring of travel costs and new procedures were put in place to expedite timely close-out of outstanding travel obligations. Enhanced monitoring of spending on light refreshments at panel and advisory committee meetings ensured costs remain below the guidance limit. A policy is being finalized to guide the purchase, distribution, and use of wireless technologies as a means to hold down mobile communications costs. A cost-benefit study of printing procurement and management services across the agency identified measures to reduce costs. The termination of two management support services contracts resulted in reduced spending.
- **Increase efficiency and transparency:** In September 2012, a system implementation contract was awarded to Accenture Federal Services, LLC, for NSF's future financial management and reporting solution (iTRAK). The new system, which replaces NSF's 25-year old Financial Accounting System, will increase the agency's capabilities for more informed operational and programmatic decision-making, improve the effectiveness and efficiency of financial and

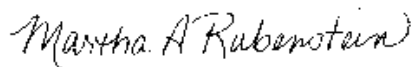
business processes, and enhance financial and business accountability, integrity, and compliance. iTRAK is slated to go live October 2014. In FY 2012, NSF also began development of an Award Cash Management Service (ACM\$) that will transition NSF awardees from the pooling process for grant payments to an award level process at the time of payment request. ACM\$ will improve the timeliness of award financial information and enable the establishment of tighter cash management controls.

- **Maintain low improper payments:** NSF has been a leader and active participant in OMB's new Do Not Pay (DNP) initiative to reduce improper payments. The agency's goal is to incorporate the DNP solution fully into its pre-award review process for all grants and cooperative agreements. NSF was one of the first agencies to be in compliance with on-line access to the new mandated system. The DNP solution complements NSF's existing policies and procedures for award management; the agency has already begun automating and centralizing the pre-award verification. NSF will realize efficiency gains through reduced workload from discontinued manual verifications of awardee eligibility.

NSF has a robust risk-based grant monitoring program that samples for improper payments. Due to NSF's historical demonstration of very low improper payment rates, OMB has allowed the agency to report on a 3-year cycle for the Improper Payments Elimination and Recovery Act (IPERA). With FY 2012 a reporting year in the cycle, NSF conducted a statistical review of its Federal Financial Report expenditure transactions received from grant recipients. Consistent with prior year findings, NSF's improper payment rates remain low and well below the OMB thresholds.

- **Effective internal controls:** 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 these evaluations, NSF is able to provide reasonable assurance that as of September 30, 2012, internal control over financial reporting was operating effectively and no material weaknesses were identified in the design or operation of internal control.

A more detailed discussion of these activities and others (such as grants and contracts administration and stewardship of NSF's Recovery Act programs) appear elsewhere in this report. Sound financial management and effective operations is essential to carrying out and achieving NSF's mission and the agency's 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
Head, Office of Budget, Finance and Award Management

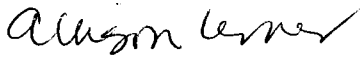
November 15, 2012



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

TO: Dr. Subra Suresh
Director, National Science Foundation

Dr. Dan E. Arvizu
Chair, National Science Board

FROM: Allison Lerner 
Inspector General, National Science Foundation

DATE: November 9, 2012

SUBJECT: Audit of the National Science Foundation's
Fiscal Years 2012 and 2011 Financial Statements

This memorandum transmits CliftonLarsonAllen LLP's financial statement audit report of the National Science Foundation (NSF) for Fiscal Years 2012 and 2011.

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), CliftonLarsonAllen LLP, an independent public accounting firm, performed an audit of NSF's Fiscal Years 2012 and 2011 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).

CliftonLarsonAllen LLP issued an unqualified opinion on NSF's financial statements. In its Report on Internal Control over Financial Reporting, CliftonLarsonAllen LLP reported a significant deficiency related to NSF's monitoring of construction type cooperative agreements that was initially identified in 2011 and did not report any material weaknesses in internal control. CliftonLarsonAllen 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, CliftonLarsonAllen LLP found no reportable instances of noncompliance with laws and regulations it tested.

NSF management's response, dated November 9, 2012, follows CliftonLarsonAllen LLP's report.

Evaluation of CliftonLarsonAllen 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 CliftonLarsonAllen 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 CliftonLarsonAllen 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.

CliftonLarsonAllen LLP is responsible for the attached auditor's report dated November 9, 2012, 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 CliftonLarsonAllen 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: Dr. G. P. Peterson, Chair, Audit and Oversight Committee



CliftonLarsonAllen

INDEPENDENT AUDITOR'S REPORT

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

We have audited the accompanying balance sheets of the National Science Foundation (NSF) as of September 30, 2012 and 2011, and the related statements of net cost and changes in net position, and the combined statements of budgetary resources ("financial statements") for the years then ended. The objective of our audit was to express an opinion on the fairness of these financial statements. In connection with our audit, we also considered the internal control over financial reporting and considered NSF's compliance with laws and regulations. In our audit, we found:

- The financial statements are presented fairly, in all material respects, in conformity with accounting principles generally accepted in the United States of America (U.S.);
- No material weaknesses in internal control over financial reporting (including safeguarding assets) and compliance with laws and regulations, although internal control could be improved;
- Some progress has been made in fiscal year (FY) 2012 on the significant deficiency condition noted in the FY 2011 auditor's report; however, most of the conditions detailed in that report continue to exist and, along with others, is reported herein as a significant deficiency; and
- No instances of reportable noncompliance with selected provisions of laws and regulations tested, including the requirements of the Federal Financial Management Improvement Act of 1996 (FFMIA).

The following sections and Exhibits discuss in more detail: (1) these conclusions; (2) the current status of prior year findings and recommendations (3) our conclusions on Management's Discussion and Analysis (MD&A), required supplementary information, and other information; (4) management's responsibility for the financial statements; (5) our responsibility for the audit; and (6) NSF's response to the audit results and our evaluation of such response.

Opinion on Financial Statements

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of NSF as of September 30, 2012 and 2011 and its net costs; changes in net position; and budgetary resources for the years then ended in conformity with accounting principles generally accepted in the U.S.

Report on Internal Control

In planning and performing our audit, we considered NSF's internal control over financial reporting and compliance (internal control) 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 NSF's internal control. Accordingly, we do not express an opinion on the effectiveness of NSF'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 and correct 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.

INDEPENDENT AUDITOR'S REPORT (Continued)

Our consideration of internal control over financial reporting was for the limited purpose described above and was not designed to identify all deficiencies in internal control that might be significant deficiencies or material weaknesses. We did not identify any deficiencies in internal control that we consider to be material weaknesses. However, we identified one deficiency in internal control described in **Exhibit I** that we consider to be a significant deficiency. A *significant deficiency* is a control 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 also noted certain other matters involving internal control that we will communicate in a separate letter to NSF management.

Report on Compliance

In connection with our audit, we performed tests of NSF's compliance with certain provisions of laws and regulations. The results of our tests disclosed no instances of noncompliance that are required to be reported in accordance with *Government Auditing Standards*, issued by the Comptroller General of the United States or OMB Bulletin No. 07-04 *Audit Requirements for Federal Financial Statements*, as amended (OMB Bulletin 07-04). However, the objective of our audit was not to provide an opinion on compliance with laws and regulations. Accordingly, we do not express such an opinion.

Under FFMIA, we are required to report whether the financial management systems used by NSF substantially comply with the (1) Federal financial management systems requirements, (2) applicable Federal accounting standards, and (3) the United States Standard General Ledger (USSGL) 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 NSF's 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 (1) Federal financial management systems requirements, (2) Federal accounting standards, or (3) the USSGL at the transaction level.

Status of Prior Year's Control Deficiency and Noncompliance Issues

We have reviewed the status of NSF's corrective actions with respect to the findings and recommendations included in the prior year's Independent Auditors' Report, dated November 11, 2011. The status of prior year findings and recommendations is presented in **Exhibit II**.

Other Information

Accounting principles generally accepted in the U.S. require that NSF's MD&A, and other required supplementary information (including stewardship information), be presented to supplement the financial statements. Such information, although not a part of the financial statements, is required by the Federal Accounting Standards Advisory Board who considers it to be an essential part of financial reporting for placing the financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the MD&A and required supplementary information in accordance with auditing standards generally accepted in the U.S., which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the financial statements, and other knowledge we obtained during our audit of the financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

All other information, exclusive of the financial statements and related notes, MD&A and other required supplementary information, listed in the table of contents of NSF's Agency Financial Report is presented

INDEPENDENT AUDITOR'S REPORT (Continued)

for purposes of additional analysis and is not a required part of the basic financial statements. Such information has not been subjected to the auditing procedures applied in the audit of the basic financial statements and, accordingly, we do not express an opinion or provide any assurance on it.

Management's Responsibility for the Financial Statements

NSF management is responsible for (1) preparing the financial statements in conformity with accounting principles generally accepted in the U.S., (2) designing, implementing, and maintaining 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.

Auditor's Responsibility

We are responsible for conducting our audit in accordance with auditing standards generally accepted in the U.S.; the standards applicable to the financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States; and OMB Bulletin 07-04. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are presented fairly, in all material respects, in conformity with accounting principles generally accepted in the U.S. 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 FFMIA requirements referred to above, (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 Bulletin 07-04 requires testing, and (4) performing limited procedures with respect to certain other information appearing in NSF's Annual 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 appropriateness of the accounting policies used and the reasonableness of 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) evaluated the effectiveness of the design of internal control; (6) tested the operating effectiveness of relevant internal controls over financial reporting and compliance; (7) considered the design of the process for evaluating and reporting on internal control and financial management systems under FMFIA; (8) tested whether NSF's financial management systems substantially complied with the FFMIA requirements referred to above; and (9) tested compliance with selected provisions of certain laws and regulations. The procedures selected depend on the auditors' judgment, including our assessment of risks of material misstatement of the financial statements. We believe we obtained sufficient and appropriate audit evidence on which to base our conclusions.

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 audit results 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 Bulletin 07-04 that we deemed applicable to NSF's

INDEPENDENT AUDITOR'S REPORT (Continued)

financial statements for the fiscal year ended September 30, 2012. 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.

Agency Comments and Our Evaluation

NSF management's response to our report is presented in **Exhibit III**. We did not audit NSF's response and, accordingly, we express no opinion on it.

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 U.S. 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.

CliftonLarsonAllen LLP

Calverton, Maryland
November 9, 2012

INDEPENDENT AUDITOR'S REPORT (Continued)

EXHIBIT I

NATIONAL SCIENCE FOUNDATION REPORT ON INTERNAL CONTROL SIGNIFICANT DEFICIENCY September 30, 2012

Monitoring of Construction Type Cooperative Agreements

Background and Control Deficiency Criteria:

As of September 30, 2012, NSF had 15 active cooperative agreements totaling about \$1.7 billion that included approximately about \$294 million in contingency funds, representing 17 percent of the total award amount.

In our fiscal year (FY) 2011 Audit Report, we noted that Defense Contract Audit Agency (DCAA) issued audit reports and inadequacy memoranda (DCAA communications) on behalf of the NSF Office of Inspector General (OIG) that questioned the allowability of approximately \$226 million in contingency costs included in proposal budgets related to construction type cooperative agreements. DCAA specifically indicated that the contingency costs were unallowable for the following reasons – Budgeted proposal costs:

- a) Did not meet the definition for “contingency” cost pursuant to standard cost principles; i.e. contingency costs are only allowed for events the occurrence of which could be foretold with certainty as to time, intensity, or with an assurance of their happening (as detailed in Title 2 Code of Federal Regulations); utilized by the Office of Management and Budget (OMB) in its accounting guidance to federal agencies; and
- b) Supporting documentation was inadequate.

In certain of these communications, DCAA also raised the following concerns:

- a) Awardees could draw down contingency funds without advance approval by NSF;
- b) Proposals do not have adequate supporting documentation for proposed costs; and
- c) Deficiencies in an awardee’s accounting system and estimating practices.

In tests performed during our FY 2011 audit, we also noted deficiencies in NSF’s monitoring of contingency funds and that the awardees had unrestricted access to the contingency funds during the year.

Even though NSF has been working with the NSF OIG & DCAA throughout FY 2012 regarding the concerns raised in these DCAA communications, the majority of these matters remain unresolved, but are still under discussion with the OIG, at September 30, 2012.

Conditions:

The following paragraphs describe the specific conditions that existed during FY 2012.

1. DCAA Audits of Cooperative Agreements with Contingency Funds

In FY 2011, NSF disagreed with many of the findings in the DCAA communications, and DCAA agreed to conduct further work on three proposal audits previously conducted, met with NSF management to discuss their concerns, and review additional information provided by the awardees. As a result of these efforts, DCAA issued reports in FY 2012 which continued to question the allowability of the proposed contingency costs, noting in each case that the awardee’s basis for the contingency costs was inadequate.

INDEPENDENT AUDITOR'S REPORT (Continued)

The significant findings from the DCAA's audit reports and memoranda issued in FY 2012 continued to be reported as follows:

- Contingency costs of approximately \$226 million reflected in the cost proposals for three awardees were noted as unallowable under federal cost principles,
- Lack of adequate documentation for proposed cost amounts for certain awardees,
- Awardees can draw down contingency funds without advance approval by NSF, and
- Deficiencies in one awardee's accounting system and estimating practices.

DCAA also noted in one of its proposal audits that the inadequacies were so significant that the five year \$434 million proposal was not considered acceptable for negotiation of a fair and reasonable price/award. DCAA indicated that the price and/or cost analysis provided by the awardee for all costs was insufficient due to (a) reliance on historical data that was not current; (b) lack of adequate documentation of the analyses in general; and (c) less than sufficient competition by offerors. DCAA is still in the process of reviewing and assessing additional information provided by another awardee for a proposal that was previously determined to be unacceptable for audit.

Pursuant to OMB Circular A-50, *Audit Follow Up*, NSF management has six months to submit an Audit Resolution Memo (ARM) in response to the remaining DCAA reports. As of September 30, 2012, NSF management has issued an ARM for two of the DCAA audit reports providing the basis for its disagreement with the OIG and DCAA position. The OIG is evaluating the Memos and/or working with NSF to finalize an action plan to resolve these matters.

2. OIG Audit Report

The NSF OIG also issued a report dated September 28, 2012 (Report No. 12-2-010) on its *Audit of NSF's Management of Contingency in the Earthscope Awards* which examined cooperative agreements that have been closed. The primary findings of the OIG report were:

- a) The \$10 million in proposed contingency costs were not supported by cost data and not compliant with OMB costs principles;
- b) Instances were noted in which NSF approved the use of some contingency funds for matters that did not appear to represent the materialization of contingent events;
- c) Some awardees were not tracking the use of the contingency funds within their accounting systems; and
- d) The cost proposal format submitted by the awardee did not clearly identify allowable and unallowable costs or the specific amount allocated for contingency.

Pursuant to OMB Circular A-50, *Audit Follow Up*, NSF management has six months to submit an Audit Resolution Memo in response to this report.

3. OIG Alert Memo

The OIG also issued an OIG Alert Memo dated September 28, 2012 (Report No. 12-6-001), *NSF's Management of Cooperative Agreements*. The Alert Memo, based in part on the findings from the previous DCAA audits and the separate OIG audit described above, reiterated concerns about the adequacy of NSF's review of proposed costs, the proposer's financial management capabilities, and NSF's post-award monitoring. The main points of the OIG Memo were as follows:

- a) NSF does not require a proposal audit for high-risk, high-dollar cooperative agreements prior to award to ensure that awardee's cost estimates are adequate to form an acceptable basis for the negotiation of a fair and reasonable price.
- b) NSF does not require audits of the accounting systems of awardees that will be managing large cooperative agreements, prior to making awards to ensure that they are adequate to bill the government.

INDEPENDENT AUDITOR'S REPORT (Continued)

- c) NSF does not require the use of OMB's SF 424C Form (Budget Information - Construction Programs), for submitting proposals, which identifies allowable and unallowable costs as well as amounts for contingencies. This puts NSF at risk of unknowingly funding unallowable costs, especially when an awardee does not have a cooperative agreement officer determination that the awardee has an adequate accounting system.
- d) Large cooperative agreement awardees are not required to provide NSF with annual incurred cost submissions, unless NSF is the cognizant agency for a contract with NSF, nor does NSF routinely have those submissions audited to ensure that the costs claimed are allowable. Absent incurred cost submissions and audits, NSF cannot adequately monitor awardees' expenditure of government funds during the post-award stage, compounding our concern that unallowable costs could be charged to awards and go undetected.

NSF management has not yet provided a formal written response to the Alert Memo.

4. Internal Controls for Monitoring Use of Contingency Funds

In addition to the DCAA and OIG audits discussed above, our specific internal control testing procedures, which included the examination of several Cooperative Agreements with contingency funds, noted the following exceptions:

- a) Awardees can draw down on the contingency funds budget without prior NSF approval. Accordingly, there are no systematic barriers to prevent them from doing so to reduce the risk of such funds being used for unallowable purposes.
- b) For certain cooperative agreements examined, we noted the following:
 - The awardee did not report the allocation of the contingency budget authority to specific project Work Breakdown Structure (WBS) elements on a monthly basis 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; and
 - NSF was unable to provide evidence to show that it had approved the awardee's process for managing contingency expenditures. A requirement to document NSF's approval of the awardee's process for managing contingency expenditures and requests above the stipulated threshold would reduce the risk of funds being disbursed for costs that are unreasonable, unallowable or unallocable.

In summary, the DCAA communications, NSF OIG audit report and Alert Memo, and the results of our internal control testing in FY 2012 continue to indicate significant risks related to NSF's administration of 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 monitoring cooperative agreements that include contingency fund provisions.

Recommendations:

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

1. OMB recently proposed new rules in the Federal Register (Vol. 77, No. 39, 11778) to reform Federal policies relating to grants and cooperative agreements regarding the cost principles, including those relating to contingency costs. NSF should closely monitor the finalization of these new regulations and evaluate the impact that such new policies have on these conditions from a prospective basis and revise its operating procedures as necessary.
2. Prior to the finalization of OMB's proposed new rules, NSF should reemphasize to its Cooperative Agreement awardees that proposal cost data must be prepared and maintained in accordance with contingency cost definitions provided for in Title 2 Code of Federal Regulations. All cost proposal data should be in a format that both reconciles to the underlying source data and is auditable. Failure to do so should result in suspension of draw down privileges.

INDEPENDENT AUDITOR'S REPORT (Continued)

3. NSF should develop a corrective plan to address DCAA's final audit findings. Such plan should include revisions to its proposal review process to ensure that the issues raised by DCAA in its reports are considered by NSF in the future before accepting an entity's cost proposal as a basis for the issuance of an award\cooperative agreement.
4. NSF should strengthen controls over all cooperative agreement disbursements, especially with respect to the oversight of draws on contingency funds.
5. NSF should ensure that the control requiring the awardees to submit monthly reports showing the allocation of the contingency budget authority to the second level of detail within the project's Work Breakdown Structure has been implemented and is operating effectively.
6. NSF should develop and implement a formal policy for documenting NSF's approval of the awardee's process for managing contingency expenditures and requests above the stipulated threshold.
7. NSF should develop an Action Plan to address the recommendations noted by the OIG in its:
 - a) Report No. 12-2-010 - *Audit of NSF's Management of Contingency in the Earthscope Awards*.
 - b) Alert Memo (Report No. 12-6-001), *NSF's Management of Cooperative Agreements*.

INDEPENDENT AUDITOR'S REPORT (Continued)

EXHIBIT II

**NATIONAL SCIENCE FOUNDATION
INDEPENDENT AUDITOR'S REPORT
STATUS OF PRIOR YEAR CONTROL DEFICIENCY
September 30, 2012**

Prior Year Control Deficiency	Status As Reported at September 30, 2011	Status as of September 30, 2012
<p>1. Monitoring of Construction Type Cooperative Agreements</p>	<p>Four audit reports and memoranda issued by DCAA in prior years disclosed a number of control deficiencies relating to NSF's Cooperative Agreement award and monitoring process. The most significant findings in those reports were as follows:</p> <ul style="list-style-type: none"> • A lack of adequate documentation for proposal cost amounts under audit for certain NSF's awardees, • Contingency costs reflected in proposals were noted as unallowable under federal cost principles, and • Cooperative Agreement awardees could draw down contingency funds included therein without advance approval by NSF. 	<p>Even though some improvements have been made in this area during FY 2012, the DCAA report conclusions have been reconfirmed in FY 2012, and additional work performed by the OIG continues to indicate significant control deficiencies relating to the use of contingency funds in Cooperative Agreements. Accordingly, this matter has been repeated as a Significant Deficiency in the FY 2012 Audit Report.</p>

INDEPENDENT AUDITOR'S REPORT (Continued)

EXHIBIT III

**NATIONAL SCIENCE FOUNDATION
MANAGEMENT'S RESPONSE TO FY 2012
INDEPENDENT AUDITOR'S REPORT
November 9, 2012**

INDEPENDENT AUDITOR'S REPORT (Continued)



OFFICE OF BUDGET, FINANCE & AWARD MANAGEMENT

MEMORANDUM

NOV 9 2012

Date:

To: Allison Lerner, Inspector General

From: Martha A. Rubenstein, *Martha* Chief Financial Officer

Subject: Management's Response to Independent Auditor's Report for
Fiscal Year 2012

I am pleased to see that the National Science Foundation (NSF) is receiving its 15th consecutive "clean" opinion on our financial statements and attribute our continued success to the dedicated efforts of staff throughout the Foundation. Additionally, I appreciate the cooperation that we received from your staff and CliftonLarsonAllen LLP throughout this audit process.

We concur with the overall need to strengthen our controls for awarding and managing construction type cooperative agreements. And, while we disagree with key aspects of the significant deficiency, we will continue to work with the Office of Inspector General (OIG) and its auditors to reach agreement and resolve the audit findings. In the meantime, the following paragraphs describe the improvements we are making to controls for monitoring cooperatives agreements.

NSF has comprehensive controls to manage contingency estimates and their allocation to allowable budget categories during both the pre-award and post-award processes. The pre-award processes range from multiple reviews and risk planning to the use of technical experts that assess project risk. We also make certain that our policies and procedures are consistent with widely accepted industry and federal project management principles. During the post-award process, NSF has controls to approve contingency activity based on established thresholds.

This year we increased our collaboration with the OIG to understand and resolve findings related to our management of cooperative agreements. We established standing meetings to analyze and discuss key audit findings and to improve communications. Although not fully reflected in the audit report findings, we have also demonstrated our continued commitment to our shared goal of stewardship through our timely review of all draft reports, OIG Alert Memo, and support on additional review of

INDEPENDENT AUDITOR'S REPORT (Continued)

audits mentioned in the financial statement audit report. As a result, we were able to clarify the areas where we need to focus our resolution efforts. In addition, as suggested in the financial statements audit report, NSF is closely monitoring the Office of Management and Budget's proposed new rules to reform Federal policies for grants and cooperative agreements related to cost principles, including those pertaining to contingency estimates. Concerning awardee drawdown of funds, we are in the process of enhancing controls for cash management through a new Award Cash Management Service. These controls will limit drawdown of funding increments.

Moving forward, we are committed to improving our procedures associated with both pre-award and post-award cost reviews. This includes enhancing our internal analysis of proposal budgets, use of outside cost analysis and audit support when necessary, and incorporating incurred cost audits, when advisable, as a means to verify costs to the Government.

We look forward to continued collaboration with the OIG to improve our stewardship of taxpayer funds. If you have any questions concerning our responses, please contact me at (703) 292-8200 or Shirl Ruffin, Deputy Chief Financial Officer at (703) 292-8280.

Copies: Dr. Subra Suresh
Dr. Cora B. Marrett



National Science Foundation

PRINCIPAL FINANCIAL STATEMENTS

As of and for the Years Ended
September 30, 2012 and 2011

National Science Foundation
Balance Sheet
As of September 30, 2012 and 2011
(Amounts in Thousands)

Assets	<u>2012</u>	<u>2011</u>
Intragovernmental Assets		
Fund Balance With Treasury (Note 2)	\$ 12,047,148	\$ 12,175,088
Accounts Receivable	6,479	10,726
Advances	16,307	69,228
Total Intragovernmental Assets	<u>12,069,934</u>	<u>12,255,042</u>
Cash and Other Monetary Assets (Note 2)	40,245	51,380
Accounts Receivable, Net	184	186
Advances	1,379	-
General Property, Plant and Equipment, Net (Notes 3 and 4)	276,900	278,126
Total Assets	\$ <u>12,388,642</u>	\$ <u>12,584,734</u>
Liabilities		
Intragovernmental Liabilities		
Advances From Others	\$ 7,552	\$ 20,773
Employer Contributions	706	550
FECA Employee Benefits	367	345
Other Intragovernmental Liabilities	-	984
Total Intragovernmental Liabilities	<u>8,625</u>	<u>22,652</u>
Accounts Payable	61,993	54,016
FECA Employee Benefits	1,366	1,272
Accrued Liabilities - Grants	445,563	437,269
Accrued Liabilities - Contracts and Payroll	8,081	48,645
Accrued Annual Leave	17,846	17,269
Total Liabilities	\$ <u>543,474</u>	\$ <u>581,123</u>
Net Position		
Unexpended Appropriations - Other Funds	\$ 11,158,221	\$ 11,330,889
Cumulative Results of Operations - Earmarked Funds (Note 5)	344,204	324,083
Cumulative Results of Operations - Other Funds	342,743	348,639
Total Net Position	<u>11,845,168</u>	<u>12,003,611</u>
Total Liabilities and Net Position	\$ <u>12,388,642</u>	\$ <u>12,584,734</u>

The accompanying notes are an integral part of these statements.

National Science Foundation
Statement of Net Cost
For the Years Ended September 30, 2012 and 2011
(Amounts in Thousands)

Program Costs	<u>2012</u>	<u>2011</u>
Research and Related Activities		
Gross Costs	\$ 6,134,541	\$ 6,004,357
Less: Earned Revenues	<u>(107,478)</u>	<u>(110,458)</u>
Net Research and Related Activities	<u>6,027,063</u>	<u>5,893,899</u>
Education and Human Resources		
Gross Costs	\$ 877,922	\$ 836,755
Less: Earned Revenues	<u>(5,692)</u>	<u>(8,350)</u>
Net Education and Human Resources	<u>872,230</u>	<u>828,405</u>
Major Research Equipment and Facilities Construction		
Gross Costs	\$ 270,468	\$ 261,705
Less: Earned Revenues	<u>-</u>	<u>-</u>
Net Major Research Equipment and Facilities Construction	<u>270,468</u>	<u>261,705</u>
Costs Not Assigned to Other Programs		
Gross Costs	\$ 165,896	\$ 155,985
Less: Earned Revenues	<u>-</u>	<u>-</u>
Net Costs Not Assigned to Other Programs	<u>165,896</u>	<u>155,985</u>
Net Cost of Operations (Notes 6 and 13)	<u>\$ 7,335,657</u>	<u>\$ 7,139,994</u>

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, 2012
(Amounts in Thousands)**

	<u>2012</u>		
	<u>Earmarked</u>	<u>All Other</u>	<u>Total</u>
Cumulative Results of Operations			
Beginning Balances (Note 5)	\$ 324,083	348,639	672,722
Budgetary Financing Sources			
Appropriations Used	-	7,162,409	7,162,409
Non-exchange Revenue	-	96	96
Donations	-	47,140	47,140
Appropriated Earmarked Receipts Transferred In (Note 5)	128,986	-	128,986
Other Financing Sources			
Imputed Financing From Costs Absorbed By Others	-	11,364	11,364
Other	-	(113)	(113)
Total Financing Sources	<u>128,986</u>	<u>7,220,896</u>	<u>7,349,882</u>
Net Cost of Operations (Notes 5 and 6)	(108,865)	(7,226,792)	(7,335,657)
Cumulative Results of Operations (Note 5)	<u>\$ 344,204</u>	<u>342,743</u>	<u>686,947</u>
 Unexpended Appropriations			
Beginning Balances	\$ -	11,330,889	11,330,889
Budgetary Financing Sources			
Appropriations Received	-	7,033,095	7,033,095
Appropriations Transferred In / (Out)	-	-	-
Other Adjustments	-	(43,354)	(43,354)
Appropriations Used	-	(7,162,409)	(7,162,409)
Total Budgetary Financing Sources	<u>-</u>	<u>(172,668)</u>	<u>(172,668)</u>
Total Unexpended Appropriations	<u>-</u>	<u>11,158,221</u>	<u>11,158,221</u>
Net Position	<u>\$ 344,204</u>	<u>11,500,964</u>	<u>11,845,168</u>

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)

	<u>2011</u>		
	<u>Earmarked</u>	<u>All Other</u>	<u>Total</u>
Cumulative Results of Operations			
Beginning Balances (Note 5)	\$ 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 5)	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 5 and 6)	(116,151)	(7,023,843)	(7,139,994)
Cumulative Results of Operations (Note 5)	\$ 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 Budgetary Resources
For the Years Ended September 30, 2012 and 2011
(Amounts in Thousands)**

	<u>2012</u>	<u>2011</u>
Budgetary Resources		
Unobligated Balance - Brought Forward, October 1	\$ 228,900	\$ 206,534
Recoveries of Prior Year Unpaid Obligations	147,227	148,106
Other Changes in Unobligated Balance	<u>(43,353)</u>	<u>(40,889)</u>
Unobligated Balance from Prior Year Budget Authority, Net	332,774	313,751
Appropriations	7,209,317	6,963,909
Spending Authority from Offsetting Collections	102,899	142,066
Total Budgetary Resources	<u>\$ 7,644,990</u>	<u>\$ 7,419,726</u>
Status of Budgetary Resources		
Obligations Incurred (Note 9)	\$ 7,367,850	\$ 7,190,826
Unobligated Balance, End of Year		
Apportioned (Note 2)	158,316	125,610
Unapportioned (Note 2)	<u>118,824</u>	<u>103,290</u>
Total Unobligated Balance, End of Year	<u>277,140</u>	<u>228,900</u>
Total Status of Budgetary Resources	<u>\$ 7,644,990</u>	<u>\$ 7,419,726</u>
Change in Obligated Balance		
Unpaid Obligations - Brought Forward, October 1, Gross	\$ 12,136,893	\$ 12,395,142
Uncollected Customer Payments from Federal Sources - Brought Forward, October 1	<u>(139,326)</u>	<u>(98,305)</u>
Obligated Balance - Start of Year, Net	11,997,567	12,296,837
Obligations Incurred	7,367,850	7,190,826
Gross Outlays	(7,410,768)	(7,300,968)
Change in Uncollected Customer Payments from Federal Sources	2,831	(41,022)
Recoveries of Prior Year Unpaid Obligations	<u>(147,227)</u>	<u>(148,106)</u>
Obligated Balance - End of Year, Net (Note 2)	<u>\$ 11,810,253</u>	<u>\$ 11,997,567</u>
Obligated Balance - End of Year		
Unpaid Obligations - End of Year, Gross	\$ 11,946,749	\$ 12,136,893
Uncollected Customer Payments from Federal Sources - End of Year	<u>(136,496)</u>	<u>(139,326)</u>
Obligated Balance - End of Year, Net (Note 2)	<u>\$ 11,810,253</u>	<u>\$ 11,997,567</u>
Budget Authority and Outlays, Net		
Budget Authority, Gross	\$ 7,312,216	\$ 7,105,975
Actual Offsetting Collections	(105,730)	(101,044)
Change in Uncollected Customer Payments from Federal Sources	2,831	(41,022)
Budget Authority, Net	<u>\$ 7,209,317</u>	<u>\$ 6,963,909</u>
Gross Outlays	\$ 7,410,768	\$ 7,300,968
Actual Offsetting Collections	(105,730)	(101,044)
Net Outlays	<u>7,305,038</u>	<u>7,199,924</u>
Distributed Offsetting Receipts	<u>(48,891)</u>	<u>(53,717)</u>
Net Agency Outlays	<u>\$ 7,256,147</u>	<u>\$ 7,146,207</u>

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 and 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, currently composed of 25 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 NSB.

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.

The presentation used for the Statement of Budgetary Resources (SBR) prior to FY 2012 has been revised to reflect a new format required pursuant to the OMB *Circular A-136, Financial Reporting Requirements*, meant to better align with the Department of Treasury Form SF 133. *Circular A-136* requires agencies to present both the FY 2012 and 2011 SBR in the same format. Accordingly, even though beginning balances for the FY 2011 SBR were not changed, certain reclassifications were made to the previously issued FY 2011 SBR to conform to the new format.

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 Treasury at the end of each fiscal year.

In FY 2012, The Science Appropriations Act, 2012 under Public Law 112-55 provided funding for each of NSF's appropriations. 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 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 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 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. These balances are composed 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 prime NSF 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 on-site 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
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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

Leases and 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. All NSF leases are cancellable and/or in effect for a period of no more than one year. In December 2013,

the GSA lease for NSF headquarters expires, and the minimum lease payment through that date is \$20.8 million. NSF will continue to collaborate with GSA in 2013 to finalize a procurement solution. All other operating leases held by NSF are immaterial.

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. As a result of NSF's capitalization policy requiring a useful life of at least two years, all leasehold improvement activity completed during this fiscal year was expensed.

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 thousand 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 five-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, non-profit 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: 1) 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 2) 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, General Property, Plant, and Equipment in the Custody of Other Entities, 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 period are adjusted by an allocated amount from the 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 consists 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 consists 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 against 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.

American Recovery and Reinvestment Act Grants

By Presidential and Congressional direction, American Recovery and Reinvestment Act of 2009 (ARRA) funding is meant to be expended as expeditiously 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 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 2012, approximately 13 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. They 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: www.opm.gov/retire/pubs/bals/2012/12-307.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 can also be made and filed against awardees of the Foundation by third parties. NSF is not a party to these actions and NSF 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 they are 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 if the loss is more likely than not to occur.

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, an award decision is made to continue operation of a facility with a different entity performing operation and management duties. In such an occurrence, NSF does 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 a facility is terminated. NSF considers termination of these facilities only remotely possible. Should a facility be terminated, NSF is obligated to pay termination expenses for FFRDCs 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 facility 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 property, plant and equipment. 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, 2012 and 2011:

(Amounts in Thousands)	2012			
	Appropriated Funds	Donated Funds	Earmarked Funds	Total
Obligated	\$ 11,509,326	\$ 51,978	\$ 248,949	\$ 11,810,253
Unobligated Available	20,500	42,054	95,762	158,316
Unobligated Unavailable	115,208	71	3,545	118,824
Less: Budgetary Non-FBWT	-	(40,245)	-	(40,245)
Total FBWT	\$ 11,645,034	\$ 53,858	\$ 348,256	\$ 12,047,148

(Amounts in Thousands)	2011			
	Appropriated Funds	Donated Funds	Earmarked Funds	Total
Obligated	\$ 11,684,723	\$ 45,845	\$ 266,999	\$ 11,997,567
Unobligated Available	13,408	52,243	59,959	125,610
Unobligated Unavailable	102,227	93	970	103,290
Less: Budgetary Non-FBWT	-	(51,379)	-	(51,379)
Total FBWT	\$ 11,800,358	\$ 46,802	\$ 327,928	\$ 12,175,088

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 \$55.9 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, 2012 and 2011 were:

(Amounts in Thousands)	2012		
	Acquisition	Accumulated	Net Book Value
	Cost	Depreciation	
Equipment	\$ 147,416	\$ (121,262)	\$ 26,154
Aircraft and Satellites	138,487	(138,487)	-
Buildings and Structures	307,564	(107,511)	200,053
Leasehold Improvements	10,981	(9,668)	1,313
Construction in Progress	10,657	-	10,657
Internal Use Software	10,222	(7,605)	2,617
Software in Development	36,106	-	36,106
Total PP&E	\$ 661,433	\$ (384,533)	\$ 276,900

(Amounts in Thousands)	2011		
	Acquisition	Accumulated	Net Book Value
	Cost	Depreciation	
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

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, General Property, Plant and Equipment (PP&E)). 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, 2012, there were 38 colleges or universities and 37 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)

<u>Federally Funded Research and Development Centers</u>	<u>Amount</u>	<u>Fiscal Year Ending</u>
University Corporation for Atmospheric Research - UCAR	\$176,185	9/30
Association of Universities for Research in Astronomy, Inc. - AURA	N/A	9/30
National Radio Astronomy Observatory - AUI	\$515,892	9/30

Note 5. 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
- Systemic Reform Activities

The H-1B Nonimmigrant Petitioner fees are available to the Director of NSF until expended. The funds may be used for scholarships to low-income students, or 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 Budget of the United States Government (“President’s Budget”). The earmarked funds are accounted for in a separate Treasury Account Fund Symbol (TAFS). 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*.

Notes to the Principal Financial Statements
September 30, 2012 and 2011

(Amounts in Thousands)	2012	2011
Balance Sheet as of September 30, 2012 and 2011		
Fund Balance With Treasury	\$ 348,255	\$ 327,928
Total Assets	<u>348,255</u>	<u>327,928</u>
Other Liabilities	<u>4,051</u>	<u>3,845</u>
Total Liabilities	<u>4,051</u>	<u>3,845</u>
Cumulative Results of Operations	<u>344,204</u>	<u>324,083</u>
Total Liabilities and Net Position	<u>\$ 348,255</u>	<u>\$ 327,928</u>

Statement of Net Cost for the Periods Ended September 30, 2012 and 2011

Program Costs	\$ 108,865	\$ 116,151
Net Cost of Operations	<u>\$ 108,865</u>	<u>\$ 116,151</u>

Statement of Changes in Net Position For the Periods Ended September 30, 2012 and 2011

Net Position Beginning of Period	\$ 324,083	\$ 335,454
Appropriated Earmarked Receipts Transferred In	128,986	104,780
Net Cost of Operation	<u>(108,865)</u>	<u>(116,151)</u>
Change in Net Position	20,121	(11,371)
Net Position End of Period	<u>\$ 344,204</u>	<u>\$ 324,083</u>

Note 6. 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 the Foundation's strategic plan for FY 2011–2016: *Empowering the Nation through Discovery and Innovation*. The strategic goals outlined are as follows:

- *Transform the Frontiers*, which emphasizes the seamless integration of research and education, as well as the close coupling of research infrastructure and discovery.
- *Innovate for Society*, which 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*, which 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, 2012, approximately 96 percent of NSF's expenses amounting to \$7.1 billion were directly related to the *Transform the Frontiers* and *Innovate for Society* strategic outcome goals. 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, 2012 and 2011, costs related to the Stewardship activities totaled \$333.7 million and \$337.2 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 Government Accountability Office 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.

Notes to the Principal Financial Statements
September 30, 2012 and 2011

Intragovernmental and Public Costs and Earned Revenue by Program

(Amounts in Thousands)	2012		
	Federal	Public	Total
Research and Related Activities			
Gross Costs	\$ 255,075	\$ 5,879,466	\$ 6,134,541
Less: Earned Revenue	(107,478)	-	(107,478)
Net Research and Related Activities	<u>147,597</u>	<u>5,879,466</u>	<u>6,027,063</u>
Education and Human Resources			
Gross Costs	\$ 4,117	\$ 873,805	\$ 877,922
Less: Earned Revenue	(5,692)	-	(5,692)
Net Education and Human Resources	<u>(1,575)</u>	<u>873,805</u>	<u>872,230</u>
Major Research Equipment and Facilities Construction			
Gross Costs	\$ 5,458	\$ 265,010	\$ 270,468
Less: Earned Revenue	-	-	-
Net Major Research Equipment and Facilities Construction	<u>5,458</u>	<u>265,010</u>	<u>270,468</u>
Costs Not Assigned To Other Programs			
Gross Costs	\$ 292	\$ 165,604	\$ 165,896
Less: Earned Revenue	-	-	-
Net Costs Not Assigned To Other Programs	<u>292</u>	<u>165,604</u>	<u>165,896</u>
Net Cost of Operations	<u>\$ 151,772</u>	<u>\$ 7,183,885</u>	<u>\$ 7,335,657</u>
<hr/>			
(Amounts in Thousands)	2011		
	Federal	Public	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	<u>103,971</u>	<u>5,789,928</u>	<u>5,893,899</u>
Education and Human Resources			
Gross Costs	\$ 5,388	\$ 831,367	\$ 836,755
Less: Earned Revenue	(8,350)	-	(8,350)
Net Education and Human Resources	<u>(2,962)</u>	<u>831,367</u>	<u>828,405</u>
Major Research Equipment and Facilities Construction			
Gross Costs	\$ 504	\$ 261,201	\$ 261,705
Less: Earned Revenue	-	-	-
Net Major Research Equipment and Facilities Construction	<u>504</u>	<u>261,201</u>	<u>261,705</u>
Costs Not Assigned To Other Programs			
Gross Costs	\$ 877	\$ 155,108	\$ 155,985
Less: Earned Revenue	-	-	-
Net Costs Not Assigned To Other Programs	<u>877</u>	<u>155,108</u>	<u>155,985</u>
Net Cost of Operations	<u>\$ 102,390</u>	<u>\$ 7,037,604</u>	<u>\$ 7,139,994</u>

Note 7. American Recovery and Reinvestment Act of 2009

In FY 2009, Congress passed the American Recovery and Reinvestment Act of 2009 (ARRA) under Public Law 111-5. ARRA provided NSF with two-year funding to the R&RA, EHR, and MREFC appropriations in the amount of \$3.0 billion. ARRA also provided NSF with five-year funding to the OIG in the amount of \$2.0 million for audits and oversight of ARRA funds. By September 30, 2010, NSF had obligated R&RA, EHR, and MREFC ARRA funds in the amount of \$3.0 billion. As of September 30, 2012 and 2011, NSF obligated OIG ARRA funds in the amount of \$851.2 thousand and \$155.2 thousand, respectively. For details on ARRA disbursements and reporting requirements, refer to NSF's Recovery Act website at www.nsf.gov/recovery.

Note 8. 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 2012 and 2011, the permanent indefinite appropriations for R&RA were \$437.3 million and \$441.1 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 2012 and 2011, the permanent indefinite appropriations for MREFC were \$167.1 million and \$117.3 million, respectively.

The EHR appropriation is used to carry out science and engineering education, and human resources programs and activities. In FYs 2012 and 2011, the permanent indefinite appropriations for EHR were \$54.9 million and \$86.8 million, respectively, and are reported as current year transfers from the annual EHR appropriation.

Note 9. 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 2012 and 2011, NSF's SF-133, *Report on Budget Execution and Budgetary Resources*, reported all obligations incurred under Category B which is by activity, project, or object. As of September 30, 2012 and 2011, direct obligations amounted to \$7.3 billion and \$7.1 billion, respectively, and reimbursable obligations amounted to \$107.1 million and \$134.3 million, respectively.

Note 10. 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 2012 actual budgetary execution information has not yet been published. The President's Budget is scheduled for publication in the spring of FY 2013 and can be found on the OMB web site at: <http://www.whitehouse.gov/omb>.

Notes to the Principal Financial Statements
September 30, 2012 and 2011

Balances reported in the FY 2011 SBR and the related President's Budget are shown in a table below for Budgetary Resources, Obligations Incurred, Unobligated Balance—Unavailable, Distributed Offsetting Receipts, 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. Additionally, the Distributed Offsetting Receipts amount on the SBR includes donations, while the President's Budget does not.

(Amounts in Thousands)	2011			
	Budgetary Resources	Obligations Incurred	Unobligated Balance - Unavailable	Distributed Offsetting Receipts
Combined Statement of Budgetary Resources	\$ 7,419,726	\$ 7,190,826	\$ 103,290	\$ 53,717
Budget of the U.S. Government	\$ 7,318,168	\$ 7,189,710	\$ 2,848	\$ 1,000
Difference	\$ 101,558	\$ 1,116	\$ 100,442	\$ 52,717

Note 11. 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, 2012 and 2011, amounted to \$11.4 billion and \$11.7 billion, respectively.

Note 12. Awards to Affiliated Institutions

NSB members may be affiliated with institutions that are eligible to receive grants and awards from NSF. NSF made awards totaling \$769.6 million to board member affiliated institutions in 2012. The Board does not review all NSF award actions; however, the following require NSB approval for the NSF Director to take action under delegated authority:

- Proposed awards, requests for proposals (RFPs), and solicitations that meet or exceed a threshold where the average annual award amount is the greater of 1 percent or more of the awarding Directorate's or Office's prior year plan or 0.1% or more of the prior year total NSF budget (enacted level);
- New programs where the total annualized awards exceed 3.0% of the awarding Directorate's or Office's prior year current plan, involve sensitive political or policy issues, or will be funded as an ongoing NSF-wide activity;
- Major construction projects

The Director's Review Board (DRB) reviews proposed actions for evaluation adequacy and documentation; and compliance with Foundation policies, procedures and strategies. Items requiring DRB action include large awards and RFPs that meet or exceed a threshold of 2.5 percent of the prior year Division or Subactivity Plan. In addition, the DRB reviews all items requiring NSB action as well as NSB information items prior to submission.

NSF may fund awards meeting the above requirements to institutions affiliated with board members. Federal conflict of interest rules prohibit NSB members from participating in matters where they have a

conflict of interest or there is an impartiality concern without prior authorization from the Designated Agency Ethics Official (DAEO). Prior to Board meetings, all NSB action items are screened for conflict of interest/impartiality concerns by the Office of the General Counsel. Members who have conflicts are either recused from the matter or receive a waiver from the DAEO to participate. NSB did not approve any awards to board member affiliated institutions in 2012.

Note 13. Reconciliation of Net Cost of Operations to Budget

(Amounts in Thousands)	2012	2011
Resources Used To Finance Activities		
Budgetary Resources Obligated		
Obligations Incurred	\$ 7,367,850	\$ 7,190,826
Less: Spending Authority from Offsetting Collections and Recoveries	(250,126)	(290,172)
Obligations Net of Offsetting Collections and Recoveries	7,117,724	6,900,654
Less: Offsetting Receipts	(48,891)	(53,717)
Net Obligations	7,068,833	6,846,937
Other Resources		
Imputed Financing	11,364	12,475
Other Resources	(113)	(304)
Net Other Resources Used to Finance Activities	11,251	12,171
Total Resources Used to Finance Activities	7,080,084	6,859,108
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	204,760	231,824
Resources that Fund Expenses Recognized in Prior Periods	5	(3,286)
Budgetary Offsetting Collections and Receipts that Do Not Affect		
Net Cost of Operations	48,891	53,717
Resources that Finance the Acquisition of Assets	(17,616)	(18,372)
Total Resources Used to Finance Items Not Part of the		
Net Cost of Operations	236,040	263,883
Total Resources Used to Finance Net Cost of Operations	7,316,124	7,122,991
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	693	5
Total Components of Net Cost of Operations that will Require		
or Generate Resources in Future Periods	693	5
Components Not Requiring or Generating Resources		
Depreciation and Amortization	18,725	16,754
Other	115	244
Total Components of Net Cost of Operations that will not		
Require or Generate Resources	18,840	16,998
Total Components of Net Cost of Operations that Will Not		
Require or Generate Resources in the Current Period	19,533	17,003
Net Cost of Operations	\$ 7,335,657	\$ 7,139,994

Required Supplementary Stewardship Information

Stewardship Investments

For the Years Ended September 30, 2012 and 2011

Required Supplementary Stewardship Information
September 30, 2012 and 2011

Stewardship Investments
Research and Human Capital

Research and Human Capital Activities

	<u>2012</u>	<u>2011</u>	<u>2010</u>	<u>2009</u>	<u>2008</u>
Basic Research	\$ 5,590,843	\$ 5,401,356	\$ 5,249,579	\$ 4,413,407	\$ 4,449,062
Applied Research	532,729	404,596	416,008	498,544	409,516
Education and Training	991,543	1,115,680	1,019,776	867,333	911,369
Non-Investing Activities	333,712	337,170	312,269	332,623	283,245
Total Research & Human Capital Activities	<u>\$ 7,448,827</u>	<u>\$ 7,258,802</u>	<u>\$ 6,997,632</u>	<u>\$ 6,111,907</u>	<u>\$ 6,053,192</u>

Inputs, Outputs and/or Outcomes

Research and Human Capital Activities

Investments In:

Universities	\$ 5,445,926	\$ 5,192,332	\$ 5,103,835	\$ 4,340,871	\$ 4,189,050
Industry	280,452	350,115	286,419	253,114	251,695
Federal Agencies	264,846	195,652	203,635	219,367	256,186
Small Business	239,866	254,215	268,697	209,343	224,793
Federally Funded R&D Centers	229,474	231,234	246,217	232,319	229,259
Non-Profit Organizations	523,772	522,958	408,441	381,882	444,236
Other	464,491	512,296	480,388	475,011	457,973
	<u>\$ 7,448,827</u>	<u>\$ 7,258,802</u>	<u>\$ 6,997,632</u>	<u>\$ 6,111,907</u>	<u>\$ 6,053,192</u>

Support To:

Scientists	\$ 544,452	\$ 540,865	\$ 568,140	\$ 695,389	\$ 512,147
Postdoctoral Programs	192,863	196,071	188,665	252,639	164,519
Graduate Students	574,557	564,021	602,990	933,063	615,621
	<u>\$ 1,311,872</u>	<u>\$ 1,300,957</u>	<u>\$ 1,359,795</u>	<u>\$ 1,881,091</u>	<u>\$ 1,292,287</u>

Outputs & Outcomes:

Number of:

Award Actions	23,000	22,000	24,000	28,000	23,000
Senior Researchers	56,000	53,000	55,000	54,000	43,000
Other Professionals	14,000	14,000	15,000	15,000	12,000
Postdoctoral Associates	6,000	7,000	7,000	8,000	6,000
Graduate Students	42,000	40,000	40,000	54,000	37,000
Undergraduate Students	31,000	27,000	34,000	33,000	24,000
K-12 Students	125,000	86,000	59,000	14,000	13,000
K-12 Teachers	45,000	48,000	85,000	63,000	62,000

NSF's mission is to support basic scientific research, research fundamental to the engineering process, and 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 FY 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 FY 2013 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 support to scientists, postdoctoral associates, and graduate students are obtained from NSF's award budget information as recorded at the time the award is made. The number of award actions are actual values from NSF's Enterprise Information System (EIS). The remaining outputs and outcomes are estimates provided annually by the NSF Directorates. These estimates are reported in the NSF's annual Budget Request to Congress.

NSF's Human Capital investments focus principally on education and training, toward a 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 lifelong learning. In FY 2011, the methodology used to produce the estimates of K-12 Students changed. In fiscal years prior to 2011, the number of K-12 students involved in NSF activities was based on estimates provided by staff in the Graduate Teaching Fellowships in K-12 Education (GK-12) program within EHR. In FYs 2012 and 2011, the numbers are based on a more robust data collection and analysis process.

Required Supplementary Information

Deferred Maintenance

For the Years Ended September 30, 2012 and 2011

Deferred Maintenance and Repairs

NSF performs condition assessment surveys in accordance with FASAB Standards Nos. 6, 14, and 40 for capitalized PP&E to determine if any maintenance and repairs are needed to keep an asset in an acceptable condition, or to restore an asset to a specific level of performance. NSF considers deferred maintenance and repairs to be any maintenance and repairs that are 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 and repairs also include any other type of maintenance or repair 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 and repairs.

NSF considered whether any scheduled maintenance or repair necessary to keep fixed assets of the agency in an acceptable condition was deferred at the end of the period for FYs 2012 and 2011. 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 and repairs 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 and repairs on assets in poor condition is considered critical in order to maintain operational status.

At September 30, 2012, NSF determined that scheduled maintenance on two 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 \$23.9 thousand. The items are heavy mobile equipment. They are considered critical to NSF operations and are estimated to require \$47.8 thousand in maintenance.

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.

Required Supplementary Information

Budgetary Resources by Major Budget Accounts

In the following table, NSF budgetary information for FYs ended September 30, 2012 and 2011, 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.

Required Supplementary Information
September 30, 2012 and 2011

The Science Appropriations Act, 2012

2012
(Amounts in Thousands)

	<u>Research and Related</u>	<u>Education</u>	<u>Major Research Equipment</u>	<u>OIG, AOAM, and NSB</u>	<u>Special and Donated</u>	<u>Total</u>
Budgetary Resources						
Unobligated Balance - Brought Forward, October 1	\$ 78,988	26,345	877	4,694	113,265	\$ 224,169
Recoveries of Prior Year Unpaid Obligations	120,302	15,946	835	3,778	3,623	144,484
Other Changes in Unobligated Balance	(29,581)	(11,155)	-	(2,617)	-	(43,353)
Unobligated Balance from Prior Year Budget Authority, Net	169,709	31,136	1,712	5,855	116,888	325,300
Appropriations	5,689,000	829,000	197,055	318,040	176,222	7,209,317
Spending Authority from Offsetting Collections	92,141	4,441	-	6,317	-	102,899
Total Budgetary Resources	\$ 5,950,850	864,577	198,767	330,212	293,110	\$ 7,637,516
Status of Budgetary Resources						
Obligations Incurred	\$ 5,857,488	835,540	198,081	324,367	151,678	\$ 7,367,154
Unobligated Balance, End of Year						
Apportioned	13,859	4,563	681	249	137,816	157,168
Unapportioned	79,503	24,474	5	5,596	3,616	113,194
Total Unobligated Balance, End of Year	93,362	29,037	686	5,845	141,432	270,362
Total Status of Budgetary Resources	\$ 5,950,850	864,577	198,767	330,212	293,110	\$ 7,637,516
Change in Obligated Balance						
Unpaid Obligations - Brought Forward, October 1, Gross	\$ 8,314,550	1,590,460	223,258	77,347	312,844	\$ 10,518,459
Uncollected Customer Payments from Federal Sources - Brought Forward, October 1	(126,804)	(11,703)	-	(819)	-	(139,326)
Obligated Balance - Start of Year, Net	8,187,746	1,578,757	223,258	76,528	312,844	10,379,133
Obligations Incurred	5,857,488	835,540	198,081	324,367	151,678	7,367,154
Gross Outlays	(5,202,433)	(818,927)	(186,369)	(320,836)	(159,971)	(6,688,536)
Change in Uncollected Customer Payments from Federal Sources	1,231	969	-	631	-	2,831
Recoveries of Prior Year Unpaid Obligations	(120,302)	(15,946)	(835)	(3,778)	(3,623)	(144,484)
Obligated Balance - End of Year, Net	\$ 8,723,730	1,580,393	234,135	76,912	300,928	\$ 10,916,098
Obligated Balance - End of Year						
Unpaid Obligations - End of Year, Gross	8,849,304	1,591,126	234,135	77,101	300,928	\$ 11,052,594
Uncollected Customer Payments from Federal Sources-End of Year	(125,574)	(10,733)	-	(189)	-	(136,496)
Obligated Balance - End of Year, Net	\$ 8,723,730	1,580,393	234,135	76,912	300,928	\$ 10,916,098
Budget Authority and Outlays, Net						
Budget Authority, Gross	\$ 5,781,141	833,441	197,055	324,357	176,222	\$ 7,312,216
Actual Offsetting Collections	(93,371)	(5,411)	-	(6,948)	-	(105,730)
Change in Uncollected Customer Payments from Federal Sources	1,231	969	-	631	-	2,831
Budget Authority, Net	\$ 5,689,001	828,999	197,055	318,040	176,222	\$ 7,209,317
Gross Outlays	\$ 5,202,433	818,927	186,369	320,836	159,971	\$ 6,688,536
Actual Offsetting Collections	(93,371)	(5,411)	-	(6,948)	-	(105,730)
Net Outlays	5,109,062	813,516	186,369	313,888	159,971	6,582,806
Distributed Offsetting Receipts	-	-	-	-	(48,891)	(48,891)
Net Agency Outlays	\$ 5,109,062	813,516	186,369	313,888	111,080	\$ 6,533,915

Required Supplementary Information
September 30, 2012 and 2011

ARRA Funds

2012

(Amounts in Thousands)

	<u>Research and Related</u>	<u>Education</u>	<u>Major Research Equipment</u>	<u>OIG</u>	<u>Total</u>
Budgetary Resources					
Unobligated Balance - Brought Forward, October 1	\$ 2,857	30	-	1,844	\$ 4,731
Recoveries of Prior Year Unpaid Obligations	2,720	23	-	-	2,743
Other Changes in Unobligated Balance	-	-	-	-	-
Unobligated Balance from Prior Year Budget Authority, Net	5,577	53	-	1,844	7,474
Appropriations	-	-	-	-	-
Spending Authority from Offsetting Collections	-	-	-	-	-
Total Budgetary Resources	\$ 5,577	53	-	1,844	\$ 7,474
Status of Budgetary Resources					
Obligations Incurred	-	-	-	696	\$ 696
Unobligated Balance, End of Year					
Apportioned	-	-	-	1,148	1,148
Unapportioned	5,577	53	-	-	5,630
Total Unobligated Balance, End of Year	5,577	53	-	1,148	6,778
Total Status of Budgetary Resources	\$ 5,577	53	-	1,844	\$ 7,474
Change in Obligated Balance					
Unpaid Obligations - Brought Forward, October 1, Gross	\$ 1,271,721	76,103	270,610	-	\$ 1,618,434
Uncollected Customer Payments from Federal Sources - Brought Forward, October 1	-	-	-	-	-
Obligated Balance - Start of Year, Net	1,271,721	76,103	270,610	-	1,618,434
Obligations Incurred	-	-	-	696	696
Gross Outlays	(610,760)	(21,178)	(89,636)	(658)	(722,232)
Change in Uncollected Customer Payments from Federal Sources	-	-	-	-	-
Recoveries of Prior Year Unpaid Obligations	(2,720)	(23)	-	-	(2,743)
Obligated Balance - End of Year, Net	\$ 658,241	54,902	180,974	38	\$ 894,155
Obligated Balance - End of Year					
Unpaid Obligations - End of Year, Gross	\$ 658,241	54,902	180,974	38	\$ 894,155
Uncollected Customer Payments from Federal Sources - End of Year	-	-	-	-	-
Obligated Balance - End of Year, Net	\$ 658,241	54,902	180,974	38	\$ 894,155
Budget Authority and Outlays, Net					
Budget Authority, Gross	-	-	-	-	-
Actual Offsetting Collections	-	-	-	-	-
Change in Uncollected Customer Payments from Federal Sources	-	-	-	-	-
Budget Authority, Net	\$ -	-	-	-	\$ -
Gross Outlays	\$ 610,760	21,178	89,636	658	\$ 722,232
Actual Offsetting Collections	-	-	-	-	-
Net Outlays	610,760	21,178	89,636	658	722,232
Distributed Offsetting Receipts	-	-	-	-	-
Net Agency Outlays	\$ 610,760	21,178	89,636	658	\$ 722,232

Required Supplementary Information
September 30, 2012 and 2011

Full-Year Continuing Appropriation

2011
(Amounts in Thousands)

	<u>Research and Related</u>	<u>Education</u>	<u>Major Research Equipment</u>	<u>OIG, AOAM, and NSB</u>	<u>Special and Donated</u>	<u>Total</u>
Budgetary Resources						
Unobligated Balance - Brought Forward, October 1	\$ 70,313	24,901	9,172	4,180	95,779	\$ 204,345
Recoveries of Prior Year Unpaid Obligations	130,638	9,449	20	2,984	2,390	145,481
Other Changes in Unobligated Balance	(26,680)	(11,873)	-	(2,336)	-	(40,889)
Unobligated Balance from Prior Year Budget Authority, Net	174,271	22,477	9,192	4,828	98,169	308,937
Appropriations	5,509,983	861,034	117,055	317,905	157,932	6,963,909
Spending Authority from Offsetting Collections	124,717	9,570	-	7,779	-	142,066
Total Budgetary Resources	\$ 5,808,971	893,081	126,247	330,512	256,101	\$ 7,414,912
Status of Budgetary Resources						
Obligations Incurred	\$ 5,729,983	866,736	125,370	325,818	142,836	\$ 7,190,743
Unobligated Balance, End of Year						
Apportioned	6,060	4,417	858	229	112,202	123,766
Unapportioned	72,928	21,928	19	4,465	1,063	100,403
Total Unobligated Balance, End of Year	78,988	26,345	877	4,694	113,265	224,169
Total Status of Budgetary Resources	\$ 5,808,971	893,081	126,247	330,512	256,101	\$ 7,414,912
Change in Obligated Balance						
Unpaid Obligations - Brought Forward, October 1, Gross	\$ 7,841,275	1,513,783	232,216	83,641	322,060	\$ 9,992,975
Uncollected Customer Payments from Federal Sources - Brought Forward, October 1	(90,823)	(7,088)	-	(394)	-	(98,305)
Obligated Balance - Start of Year, 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
Gross Outlays	(5,126,069)	(780,610)	(134,308)	(329,128)	(149,662)	(6,519,777)
Change in Uncollected Customer Payments from Federal Sources	(35,982)	(4,615)	-	(425)	-	(41,022)
Recoveries of Prior Year Unpaid Obligations	(130,638)	(9,449)	(20)	(2,984)	(2,390)	(145,481)
Obligated Balance - End of Year, Net	\$ 8,187,746	1,578,757	223,258	76,528	312,844	\$ 10,379,133
Obligated Balance - End of Year						
Unpaid Obligations - End of Year, Gross	\$ 8,314,550	1,590,460	223,258	77,347	312,844	\$ 10,518,459
Uncollected Customer Payments from Federal Sources - End of Year	(126,804)	(11,703)	-	(819)	-	(139,326)
Obligated Balance - End of Year, Net	\$ 8,187,746	1,578,757	223,258	76,528	312,844	\$ 10,379,133
Budget Authority and Outlays, Net						
Budget Authority, Gross	\$ 5,634,700	870,604	117,055	325,684	157,932	\$ 7,105,975
Actual Offsetting Collections	(88,736)	(4,955)	-	(7,353)	-	(101,044)
Change in Uncollected Customer Payments from Federal Sources	(35,982)	(4,615)	-	(425)	-	(41,022)
Budget Authority, Net	\$ 5,509,982	861,034	117,055	317,906	157,932	\$ 6,963,909
Gross Outlays	\$ 5,126,069	780,610	134,308	329,128	149,662	\$ 6,519,777
Actual Offsetting Collections	(88,736)	(4,955)	-	(7,353)	-	(101,044)
Net Outlays	5,037,333	775,655	134,308	321,775	149,662	6,418,733
Distributed Offsetting Receipts	-	-	-	-	(53,717)	(53,717)
Net Agency Outlays	\$ 5,037,333	775,655	134,308	321,775	95,945	\$ 6,365,016

Required Supplementary Information
September 30, 2012 and 2011

ARRA Funds

2011

(Amounts in Thousands)

	<u>Research and Related</u>	<u>Education</u>	<u>Major Research Equipment</u>	<u>OIG</u>	<u>Total</u>
Budgetary Resources					
Unobligated Balance - Brought Forward, October 1	\$ 243	19	-	1,927	\$ 2,189
Recoveries of Prior Year Unpaid Obligations	2,614	11	-	-	2,625
Other Changes in Unobligated Balance	-	-	-	-	-
Unobligated Balance from Prior Year Budget Authority, Net	2,857	30	-	1,927	4,814
Appropriations	-	-	-	-	-
Spending Authority from Offsetting Collections	-	-	-	-	-
Total Budgetary Resources	\$ 2,857	30	-	1,927	\$ 4,814
Status of Budgetary Resources					
Obligations Incurred	-	-	-	83	\$ 83
Unobligated Balance, End of Year	-	-	-	1,844	1,844
Apportioned	-	-	-	-	-
Unapportioned	2,857	30	-	-	2,887
Total Unobligated Balance, End of Year	2,857	30	-	1,844	4,731
Total Status of Budgetary Resources	\$ 2,857	30	-	1,927	\$ 4,814
Change in Obligated Balance					
Unpaid Obligations - Brought Forward, October 1, Gross	\$ 1,944,504	93,005	364,658	-	\$ 2,402,167
Uncollected Customer Payments from Federal Sources - Brought Forward, October 1	-	-	-	-	-
Obligated Balance - Start of Year, Net	1,944,504	93,005	364,658	-	2,402,167
Obligations Incurred	-	-	-	83	83
Gross Outlays	(670,169)	(16,891)	(94,048)	(83)	(781,191)
Change in Uncollected Customer Payments from Federal Sources	-	-	-	-	-
Recoveries of Prior Year Unpaid Obligations	(2,614)	(11)	-	-	(2,625)
Obligated Balance - End of Year, Net	\$ 1,271,721	76,103	270,610	-	\$ 1,618,434
Obligated Balance - End of Year	-	-	-	-	-
Unpaid Obligations - End of Year, Gross	\$ 1,271,721	76,103	270,610	-	\$ 1,618,434
Uncollected Customer Payments from Federal Sources - End of Year	-	-	-	-	-
Obligated Balance - End of Year, Net	\$ 1,271,721	76,103	270,610	-	\$ 1,618,434
Budget Authority and Outlays, Net					
Budget Authority, Gross	-	-	-	-	-
Actual Offsetting Collections	-	-	-	-	-
Change in Uncollected Customer Payments from Federal Sources	-	-	-	-	-
Budget Authority, Net	\$ -	-	-	-	\$ -
Gross Outlays	\$ 670,169	16,891	94,048	83	\$ 781,191
Actual Offsetting Collections	-	-	-	-	-
Net Outlays	670,169	16,891	94,048	83	781,191
Distributed Offsetting Receipts	-	-	-	-	-
Net Agency Outlays	\$ 670,169	16,891	94,048	83	\$ 781,191

Other Accompanying Information

Schedule of Spending For the Year Ended September 30, 2012

The Schedule of Spending is new. It was developed this year to make information about government spending more accessible and transparent to the public. To help achieve this goal, specific line items found in the Statement of Budgetary Resources (SBR), which relate to government spending, have been simplified and reorganized to help readers better understand the accounting terminology. The focus of the Schedule of Spending is to provide a user-friendly report that answers the following questions:

- What money is available to spend?
- How was the money spent?
- Who did the money go to?
- How was the money issued?

In accordance with OMB guidance, NSF has prepared the first two sections of the Schedule for FY 2012:

- 1. What money is available to spend?** This section ties directly to the SBR and indicates the total FY 2012 resources available less funds that were unobligated or unavailable for spending.
- 2. How was the money spent?** This section presents the services or items that were purchased in FY 2012 by appropriation category. It is tied to OMB's Budget Object Class categories. The Other and Unclassified Information line is comprised of management estimate accruals. A positive balance in the Amounts Remaining to be Spent line represents unpaid obligations and prior year recoveries; a negative balance represents obligations paid in FY 2012 that were originally incurred in a prior fiscal year.

Schedule of Spending
For the Year Ended September 30, 2012
(Amounts in Thousands)

What Money is Available to Spend?

Total Resources	\$ 7,644,990
Less Amount Available	
but Not Agreed to be Spent	158,316
Less Amount Not Available to be Spent	118,824
Total Amounts Agreed to be Spent	\$ 7,367,850

How was the Money Spent?

	<u>Research and Related</u>	<u>Education</u>	<u>Major Research Equipment</u>	<u>OIG, AOAM, and NSB</u>	<u>Special and Donated</u>	<u>Total</u>
Compensation and Benefits	\$ 749	279	-	204,396	13	\$ 205,437
Travel and Transportation of Persons	15,555	2,897	(3)	5,554	350	24,353
Agency Support Materials	1,841	121	-	4,677	23	6,662
Rent, Communications, and Utilities	546	106	-	29,195	20	29,867
Other Contractual Services	479,445	31,925	(348)	67,630	14,549	593,201
Equipment	1,752	-	-	2,605	-	4,357
Grants, Subsidies and Contributions	5,313,305	804,777	276,356	153	145,014	6,539,605
Other and Unclassified	-	-	-	7,284	2	7,286
Total Spending	5,813,193	840,105	276,005	321,494	159,971	7,410,768
Amounts Remaining to be Spent	44,295	(4,565)	(77,924)	3,569	(8,293)	(42,918)
Total Amounts Agreed to be Spent	\$ 5,857,488	835,540	198,081	325,063	151,678	\$ 7,367,850



Chapter 3
Appendices



Summary of FY 2012 Financial Statement Audit and Management Assurances

Table 1. Summary of Financial Statement Audit

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

Table 2. Summary of Management Assurances

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

National Science Foundation

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

VII. Agency Information Systems and Other Infrastructure

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

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

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

Not applicable.

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

No barriers are currently identified.

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

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



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

October 15, 2012

MEMORANDUM

To: Dan E. Arvizu
Chair, National Science Board

Dr. Subra Suresh
Director, National Science Foundation

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

Subject: Management Challenges for NSF in FY 2013

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

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

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

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

CHALLENGE: Establishing Accountability over Large Cooperative Agreements

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

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

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

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

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

¹ 31 United States Code §3605

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

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

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

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

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

CHALLENGE: Improving Grant Administration

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

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

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

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

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

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

CHALLENGE: Strengthening Contract Administration

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

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

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

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

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

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

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

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

CHALLENGE: Ensuring Proper Stewardship of ARRA Funds

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

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

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

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

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

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

CHALLENGE: Management of the U.S. Antarctic Program

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

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

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

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

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

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

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

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

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

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

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

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

As of August 1, 2012, there were 198 IPAs at NSF, 21² of which were in managerial or executive positions. Assistant Directors head each of NSF’s seven science directorates and provide leadership and direction to their respective directorates. As of the same date, five of the seven Assistant Directors and one of the Office Heads were IPAs. Assistant Directors are also responsible for planning and implementing programs, priorities, and policy. Similarly, NSF has four science offices led by Office Heads. Within each science directorate are multiple divisions. Fourteen IPAs were division directors. As a result of its reliance on IPAs, NSF experiences a great deal of turnover in its executive ranks.

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

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

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

² Remaining IPA executive was in a position of “science advisor”

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

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

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

CHALLENGE: Encouraging the Ethical Conduct of Research

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

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

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

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

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

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

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

CHALLENGE: Managing Programs and Resources in Times of Budget Austerity

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

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

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

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

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

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



NATIONAL SCIENCE FOUNDATION
4201 WILSON BOULEVARD
ARLINGTON, VA 22230

OFFICE OF THE
DIRECTOR

October 31, 2012

MEMORANDUM

TO: Allison Lerner
Inspector General, NSF


FROM: Director, NSF

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

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

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

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


Subra Suresh

Attachment:

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

National Science Foundation FY 2012 Progress Report on OIG Management Challenges

CHALLENGE: Ensuring Proper Stewardship of ARRA Funds

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

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

NSF’s Significant Actions Taken in FY 2012

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

NSF’s Anticipated Next Steps

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

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

NSF’s Significant Actions Taken in FY 2012

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

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

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

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

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

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

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

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

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

	<p>plans in FY 2012.</p> <p>NSF’s Anticipated Next Steps</p> <ul style="list-style-type: none"> • Initiate a review of the effectiveness of IPA performance plans and appraisals, including those for executive-level IPAs. • Continue to assess each offering of the Executive Leadership Retreat and make modifications, as needed, to improve it. • Initiate a review of the effectiveness of the mandatory training requirements for executives and of the Executive Development Plan as a tool for ensuring the requirements are met. • Continue to expand its collection of internal offerings aimed a supervisors, managers, and executives.
<p>CHALLENGE: Encouraging the Ethical Conduct of Research</p> <p>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 awardee community.</p>	
<p><i>a. Ensure that awardees implement credible RCR programs</i></p>	<p>NSF’s Significant Actions Taken in FY 2012</p> <ul style="list-style-type: none"> • Continued development of a website (www.nationalethicscenter.org) on ethics and research that provides access to RCR materials as part of an award (SES-1045412) to the University of Illinois at Urbana-Champaign (UIUC). The group has also gathered information from previously funded sites, including those of the National Academy of Engineering, the University of Massachusetts-Amherst, and content from the Ethics Education Library at the Illinois Institute of Technology. In addition, project participants have given talks and presentations concerning research ethics. • Included RCR coverage in NSF outreach materials and presented the material in a number of research administration conferences. <p>NSF’s Anticipated Next Steps</p> <ul style="list-style-type: none"> • With the UIUC award ending in December 2012, draft a new FY 2013 solicitation to expand on the RCR work completed to date. The goal of the solicitation is to develop an online portal that will collect and curate ethics materials and that will link with existing projects. • Continue to emphasize the importance of RCR in outreach opportunities with NSF staff, as well as U.S. and international scientific research and education communities.
<p><i>b. Continue efforts to further the tenets of research integrity</i></p>	<p>NSF’s Significant Actions Taken in FY 2012</p> <ul style="list-style-type: none"> • Maintained an internal compendium of policies and practices for “international collaborative oversight”, which included the oversight guidance for proposals that entail international engagements, e.g., incorporated additional review criteria addressing: true intellectual collaboration; mutual benefits/benefits realized from the expertise/specialized skills of the international counterpart; and research

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

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

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

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

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

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

NSF’s Significant Actions Taken in FY 2012

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

NSF’s Anticipated Next Steps

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

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

NSF’s Significant Actions Taken in FY 2012

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

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

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

Undisbursed Balances in Expired Grant Accounts

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Appendix 4: Undisbursed Balances in Expired Grant Accounts

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

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

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

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

NSF's FY 2012 Performance Goals

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

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

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

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

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

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

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

Awards to Affiliated Institutions

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

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

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

Patents and Inventions Resulting From NSF Support

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

Acronyms

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

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