PERFORMANCE

NSF PERFORMANCE FRAMEWORK

Introduction

Per the GPRA Modernization Act, this chapter contains basic information about NSF's mission, strategic plan, and priority goals, as well as NSF's Annual Performance Plan for FY 2014 and Annual Performance Report for FY 2012. Information about NSF's performance can be found on the federal site performance.gov, which is updated quarterly with information about Agency and Cross-Agency Priority Goal achievement, and on the NSF site in the Performance and Financial Highlights Report.[1] NSF's site also includes NSF's Annual Financial Report[2], published in November 2012, which includes a preliminary discussion of NSF's FY 2012 performance. As anticipated in that report, NSF achieved most of its goals in FY 2012. Three of NSF's 18 goals were not achieved.

The Overview chapter of this Request highlights NSF's priorities for key program investments and organizational efficiencies. NSF's Performance Plan for FY 2014 underscores these priorities. In FY 2014, NSF will monitor six "key program investments" with a common set of milestones and indicators to ensure that critical targets are met. This performance goal represents a more comprehensive approach than our previous goals in FY 2011-2013 that focused on two specific investments.

The FY 2014 Performance Plan also highlights the increased emphasis on NSF leadership in STEM education. NSF has set two goals which build on previous Priority Goals and help define its leadership role in science, technology, engineering, and mathematics (STEM) undergraduate and graduate education: the implementation of Catalyzing Advances in Undergraduate STEM Education (CAUSE) and the expansion of the Graduate Research Fellowship program to include a wide range of career development opportunities.

The FY 2014 Plan also includes goals that focus on responsible stewardship of research resources (Research Infrastructure Investments), efficiency (Virtual Merit Review Panels, Modernize Financial Systems, Data-driven Management Reviews), and inclusion (Diversity and Inclusion, Career-Life Balance).

Mission Statement

The NSF Act of 1950 (Public Law 81-507) states the Foundation's mission: "to promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense; and for other purposes."

For information about NSF's organizational structure and scope of responsibilities, see the Overview chapter of this Request.

Strategic Plan and Performance Goals

NSF's Strategic Plan, *Empowering the Nation Through Discovery and Innovation: NSF Strategic Plan for Fiscal Years (FY) 2011-2016*[1], lays out three strategic goals—Transform the Frontiers, Innovate for Society, and Perform as a Model Organization—that relate directly to this mission. This goal structure enables NSF to link its investments to longer-term outcomes. To bridge the gap between these strategic

[1] www.nsf.gov/about/performance
[2] www.nsf.gov/pubs/2013/nsf13002/nsf13002.pdf

goals and measurable outputs, the Strategic Plan establishes a set of performance goals (also called strategic objectives) for each strategic goal:

Strategic Goal	**Strategic Objectives / Performance Goals**
Transform the Frontiers (T) emphasizes the seamless integration of research and education as well as the close coupling of research infrastructure and discovery.	T-1: Make investments that lead to emerging new fields of science and engineering and shifts in existing fields. T-2: Prepare and engage a diverse science, technology, engineering, and mathematics (STEM) workforce motivated to participate at the frontiers. T-3: Keep the United States globally competitive at the frontiers of knowledge by increasing international partnerships and collaborations. T-4: Enhance research infrastructure and promote data access to support researchers' and educators' capabilities and to enable transformation at the frontiers.
Innovate for Society (I) points to the tight linkage between NSF programs and societal needs, and it highlights the role that new knowledge and creativity play in economic prosperity and society's general welfare.	I-1: Make investments that lead to results and resources that are useful to society. I-2: Build the capacity of the nation's citizenry for addressing societal challenges through science and engineering. I-3: Support the development of innovative learning systems.
Perform as a Model Organization (M) emphasizes the importance to NSF of attaining excellence and inclusion in all operational aspects.	M-1: Achieve management excellence through leadership, accountability, and personal responsibility. M-2: Infuse learning as an essential element of the NSF culture with emphasis on professional development and personal growth. M-3: Encourage and sustain a culture of creativity and innovation across the agency to ensure continuous improvement and achieve high levels of customer service.

Agency Priority Goals

NSF has set three priority goals for accomplishment in FY 2012 and FY 2013. These goals cover the range of programmatic activities that NSF supports, from basic research to training of the science and engineering workforce to education of the general public.

The information on the following pages about the FY 2012-2013 Goals is also available on NSF's performance.gov page. For more information about FY 2012 activities, see performance.gov or the Annual Performance Report.

FY 2012-FY 2013 NSF Agency Priority Goals		
Goal Short Title	**Impact Statement**	**Goal Statement**
NSF Innovation Corps	Increase the number of entrepreneurs emerging from university laboratories.	By September 30, 2013, 80 percent of teams participating in the NSF Innovation Corps program will have tested the commercial viability of their product or service.
Access to Digital Products of NSF-Funded Research	Increase opportunities for research and education through public access to high-value digital products of NSF-funded research.	By September 30, 2013, NSF will have established policies for public access to high-value data and software in at least two data-intensive scientific domains.
Undergraduate Programs	Develop a diverse and highly qualified science and technology workforce.	By September 30, 2013, 80 percent of institutions funded through NSF undergraduate programs document the extent of use of proven instructional practices.

Cross-Agency Priority (CAP) Goals

Per the GPRA Modernization Act requirement to address Cross-Agency Priority Goals in the agency Strategic Plan, the Annual Performance Plan, and the Annual Performance Report, please refer to www.performance.gov. NSF currently contributes to the following CAP Goals:

- Science, Technology, Engineering, and Mathematics (STEM) Education. In support of the President's goal that the U.S. have the highest proportion of college graduates in the world by 2020, the federal government will work with education partners to improve the quality of science, technology, engineering and math (STEM) education at all levels to help increase the number of well-prepared graduates with STEM degrees by one-third over the next 10 years, resulting in an additional 1 million graduates with degrees in STEM subjects.
- Entrepreneurship and Small Business. Increase federal services to entrepreneurs and small businesses with an emphasis on 1) startups and growing firms and 2) underserved markets.
- Management goals applying to all agencies: Cybersecurity, Sustainability, Real Property, Improper Payments, Data Center Consolidation, Closing Skills Gaps, Strategic Sourcing.

FY 2012 ANNUAL PERFORMANCE REPORT

Each fiscal year the National Science Foundation is required to prepare three reports to provide financial management and program performance information to demonstrate accountability. This report, the Annual Performance Report (APR), includes 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 other two reports are the Agency Financial Report (AFR), and the Performance and Financial Highlights Report. All three of these reports can be found on the Budget and Performance Page of the NSF web site (www.nsf.gov/about/performance/).

In FY 2012, NSF tracked progress toward its three strategic goals, using 15 performance targets, and towards three Priority Goals. All program activities within the agency were covered by the 15 targets used to monitor the three strategic goals. Out of the total of 18 goals in FY 2012, 15 were achieved and three were not achieved. Below is a tabular overview.

Strategic Goal	FY 2012 Performance Goal			Results
Transform the Frontiers	Goal 1	T-1.1	INSPIRE	Not Achieved
	Goal 2	T-2.1	***Priority Goal:*** Undergraduate Programs	Achieved
	Goal 3	T-2.2	Career-Life Balance	Achieved
	Goal 4	T-3.1	International Implications	Not Achieved
	Goal 5	T-4.1	Construction Project Monitoring	Not Achieved
	Goal 6	T-4.2	***Priority Goal***: Access to Digital Products	Achieved
Innovate for Society	Goal 7	I-1.1	***Priority Goal:*** Innovation Corps	Achieved
	Goal 8	I-1.2	Industrial and Innovation Partnerships	Achieved
	Goal 9	I-2.1	Public Understanding and Communication	Achieved
	Goal 10	I-2.2	K-12 Scale-up	Achieved
	Goal 11	I-3.1	Innovative Learning Systems	Achieved
Perform as a Model Organization	Goal 12	M-1.1	Model EEO Agency	Achieved
	Goal 13	M-1.2	IPA Performance Plans	Achieved
	Goal 14	M-1.3	Performance Management System	Achieved
	Goal 15	M-2.1	Assess Developmental Needs	Achieved
	Goal 16	M-3.1	Financial System Modernization	Achieved
	Goal 17	M-3.2	Time To Decision	Achieved
	Goal 18	M-3.3	Virtual Panels	Achieved

INSPIRE: Integrated NSF Support Promoting Interdisciplinary Research and Education
EEO: Equal Employment Opportunity
IPA: Intergovernmental Personnel Act

This section presents the results for each performance goal in its strategic context, with reference to strategic goals, objectives, and targets from NSF's FY 2011-FY 2016 Strategic Plan (see the first section of this chapter). Multiple years of trend data are available for NSF's longest-standing quantitative performance measures, "time to decision" (Goal 17) and "construction project monitoring" (Goal 5). Other performance goals introduced in FY 2011 do not have historical data associated with them, with the exception of a few goals with activities that were being monitored before they were identified as performance goals.

A statement by the NSF Director verifying the reliability and completeness of the performance data in this report can be found in the FY 2012 Performance and Financial Highlights report at www.nsf.gov/about/history/annual-reports.jsp.

Strategic Goal 1: Transform the Frontiers

Strategic Objective/Performance Goal T-1: Make investments that lead to emerging new fields of science and engineering and shifts in existing fields.

Strategic Target: The NSF portfolio fully incorporates emerging areas with transformative potential, including those forming at disciplinary boundaries.

Goal T-1.1 INSPIRE (Integrated NSF Support Promoting Interdisciplinary Research and Education) (New in FY 2012)

Lead Organization: Office of the Director.

Fiscal Year	Goal Statement and Target	Target Measure, Milestone, or Deliverable	Result
2012	Strengthen support of unusually novel, potentially transformative, interdisciplinary research (IDR), through new funding mechanisms, systems, and incentives that facilitate and encourage IDR.	By September 30, 2012, • Track 1: Gather baseline data on NSF-supported IDR. • Track 2: Make 25 awards via the pilot CREATIV (Creative REsearch Awards for Transformative Interdisciplinary Ventures) mechanism.	One of two targets met. • Track 1: Not achieved. Baseline not established. A contract will be awarded to establish baseline in FY 2013. • Track 2: Achieved. 40 awards made totaling $29.1 million in FY 2012 funds.
Actual Results for Preceding Fiscal Years			
2010	Each directorate in the Research and Related Activities account will invest a minimum of $2.0 million per research division to leverage and facilitate activities that foster potentially transformative research.	$94.0 million.	Achieved: $138.44 million
2011	Produce an analysis of NSF's FY 2010 investments in activities undertaken to foster potentially transformative research.	Deliverable: One analysis.	Achieved: Report delivered in fourth quarter.

Discussion

INSPIRE addresses some of the most complicated and pressing scientific problems that lie at the intersections of traditional disciplines. INSPIRE is designed to strengthen NSF's support of interdisciplinary, potentially transformative research (PTR) by complementing existing efforts with a suite of new, highly innovative Foundation-wide activities and funding opportunities. For more information about INSPIRE's background, goals, design, and investment and evaluation framework, refer to the NSF-Wide Investments chapter.

Information on Unmet Target

Track 1 of INSPIRE seeks to make changes to NSF systems and practices that will facilitate identification, review, support, management, and tracking of IDR. NSF was unable to establish a baseline in FY 2012, but progress was made on in-house text-based classification and clustering methods.

Strategic Goal 1: Transform the Frontiers

Strategic Objective/Performance Goal T-2: Prepare and engage a diverse science, technology, engineering, and mathematics (STEM) workforce motivated to participate at the frontiers.

Strategic Target: NSF STEM workforce development programs, models, or strategies have rigorous evidence about the impact on diversity and innovation in the workforce.

Goal T-2.1 STEM Priority Goal: Undergraduate Programs

Lead Organization: Directorate for Education and Human Resources.

Fiscal Year	Goal Statement and Target	Target Measure, Milestone, or Deliverable	Result
2012	Develop a diverse and highly qualified science and technology workforce.	By September 30, 2013, 80 percent of institutions funded through NSF undergraduate programs document the extent of use of proven instructional practices.	In progress: FY 2012 milestones met[1].
Actual Results for Preceding Fiscal Years			
2010	Develop goals and metrics for NSF's programmatic investments in its FY 2010 Learning portfolio.	100 percent of programs (baseline: 80 percent).	Achieved: 100 percent of programs that received funding in FY 2010[2].
2011	NSF science, technology, engineering, and mathematics (STEM) workforce development programs at the graduate, professional, or early career level participate in evaluation and assessment systems. (Priority Goal)	Six programs.	Achieved: 12 programs[3].

Discussion

During FY 2012 a strategy was developed to use multiple mechanisms for institutions funded through NSF undergraduate programs to document the use of proven instructional practices by the end of FY 2013. A call for proposals was issued for projects to measure the use of evidence-based instructional practices in undergraduate courses at academic institutions. Thirty awards were made to institutions of higher education to develop mechanisms for measurement. Other activities undertaken in FY 2012 included soliciting information from the field, reviewing existing mechanisms used by awardees to submit data to NSF, and defining the parameters of the goal. An analysis was conducted to determine the number of academic institutions funded by NSF undergraduate programs. Planning activities resulted in an approach that will use multiple data collection mechanisms in FY 2013, including: baseline data submitted in proposals, information collected through monitoring systems, and data submitted in annual

[1] http://goals.performance.gov/goal_detail/NSF/388
[2] www.nsf.gov/about/budget/fy2012/pdf/add_perf_info_fy2012_request.pdf
[3] www.nsf.gov/about/budget/fy2013/FY2010-FY2011PriorityGoalReport.pdf

or final project reports. For further information, please refer to the page on performance.gov[1] associated with this priority goal.

Strategic Goal 1: Transform the Frontiers

Strategic Objective/Performance Goal T-2: Prepare and engage a diverse science, technology, engineering, and mathematics (STEM) workforce motivated to participate at the frontiers.

Strategic Target: NSF STEM workforce development programs, models, or strategies have rigorous evidence about the impact on diversity and innovation in the workforce.

Goal T-2.2 Career-Life Balance (New in FY 2012)

Lead Organization: Office of the Director.

Fiscal Year	Goal Statement and Target	Target Measure, Milestone, or Deliverable	Result
2012	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.	By September 30, 2012, establish the FY 2012 baseline for number and value of award support provided to CAREER awardees and postdoctoral fellows intended to fund research technicians.	Achieved. Baseline established. 20 supplements were awarded to CAREER awardees, totaling $420,355 for FY 2012.

Discussion

Although women comprise a significant and growing fraction of the U.S. STEM talent pool, recent studies demonstrate the challenges that they face when attempting to balance the often extreme demands of career and life without adequate institutional support. Utilizing womens' talent and potential in STEM fields is critical to the Nation's future success in science and technology and to economic prosperity.

To address this challenge, NSF's Career-Life Balance (CLB) Initiative, a set of forward-looking policies and practices, will help to increase the placement, advancement, and retention of women in STEM disciplines, particularly women who are seeking tenure in academe. NSF aims to enhance existing – and implement new – gender-neutral, family-friendly policies, as it is important that our Nation's colleges and universities accommodate the needs of the largest-growing segment of our science and engineering workforce. The Foundation is pursuing an agency-level pathway approach across higher education and career levels (i.e., graduate students, postdoctoral students, and early-career scientists, and engineers). CLB seeks new and innovative ways in which NSF can partner with U.S. universities, colleges, and research institutions to help attract, nurture, and retain a much greater fraction of women engineers and scientists in the Nation's STEM workforce.

In FY 2012, NSF introduced CLB supports for technicians for CAREER awardees who need temporary help to continue research while facing the demands of child and/or elder dependent care. Twenty supplements were awarded in the first year of this program.

Strategic Goal 1: Transform the Frontiers

Strategic Objective/Performance Goal T-3: Keep the United States globally competitive at the frontiers of knowledge by increasing international partnerships and collaborations.

Strategic Target: NSF programs increasingly establish international partnerships that advance the frontiers of knowledge.

Goal T-3.1 International Implications

Lead Organization in FY 2012: Office of International Science and Engineering.

Fiscal Year	Goal Statement and Target	Target Measure, Milestone, or Deliverable	Result
2012	Increase proportion of new NSF solicitations, announcements, and Dear Colleague Letters that have international implications.	Increase proportion of new NSF solicitations, announcements, and Dear Colleague Letters that have international implications by 10 percent over FY 2011.	Not achieved. The proportion of proposal calls with international implications decreased from 20 percent to 17 percent.
Actual Results for Preceding Fiscal Years			
2011	Identify number of new NSF program solicitations, announcements, and Dear Colleague Letters with international implications.	Establish baseline.	Achieved. Baseline: 23 solicitations, announcements, and Dear Colleague Letters

Discussion

NSF has a system for program officers to indicate which solicitations, announcements, and Dear Colleague Letters (collectively, "proposal calls") have international implications in the internal clearance stages. In FY 2011, the Office of International Science and Education (now a part of the Office of International and Integrative Activities) conducted a baseline count of these materials. That year, NSF issued 116 proposal calls, of which 23 (20 percent) had international implications. The goal for FY 2012 was to increase the proportion of proposal calls with international implications by 10 percent over the FY 2011 baseline, to 22 percent.

In FY 2012, NSF issued 158 proposal calls, of which 27 (17 percent) had international implications. The 22 percent goal was not achieved. Although the number of proposal calls and the number of them with international implications both increased, the proportion actually decreased.

Information on Unmet Goal

The NSF Office of International and Integrative Activities is expanding its interactions with NSF program offices with the expectation of communicating the importance and value of increasing explicit references to international funding options in proposal calls.

Strategic Goal 1: Transform the Frontiers

Strategic Objective/Performance Goal T-4: Enhance research infrastructure and promote data access to enable transformation at the frontiers.

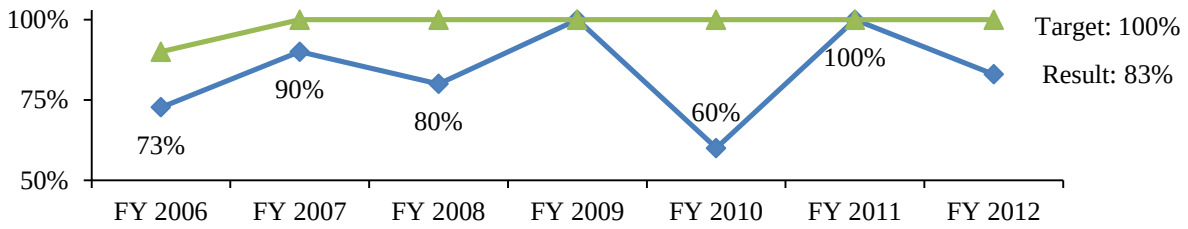
Strategic Target: NSF prioritizes and manages facility investments throughout their life-cycle in a transparent and effective way.

Goal T-4.1 Construction Project Monitoring

Lead Organization: Large Facilities Office, Office of Budget, Finance, and Award Management.

Fiscal Year	Goal Statement and Target	Target Measure, Milestone, or Deliverable	Result
2012	For all MREFC facilities under construction, keep negative cost and schedule variance at or below 10 percent.	100 percent of construction projects that are over 10 percent complete	Not Achieved: 83 percent

Construction Project Monitoring Performance Trends, FY 2006-FY 2012



Discussion

The Major Research Equipment and Facilities Construction (MREFC) account supports the acquisition, construction, and commissioning of major research facilities and equipment that provide unique capabilities at the frontiers of science and engineering. Performance of construction projects funded by the MREFC account is monitored using the Earned Value Management (EVM) system. EVM is an integrated management control system for assessing, understanding, and quantifying what a contractor or field activity is achieving with program dollars. Monitoring cost and schedule is a standard measure of performance for construction projects. Projects that are under 10 percent complete are not considered eligible for this goal because EVM data is less meaningful statistically in the very early stages of a project.

Six facilities under construction were over 10 percent complete at the end of FY 2012. Of those six, all had cost variances under 10 percent. One facility, the Advanced Technology Solar Telescope (ATST), was 15 percent behind schedule. Thus, five of six projects met the goal.

Information on Unmet Goal

The ATST site construction was delayed by more than two years while the State of Hawaii resolved a legal challenge to the proposed state land use permit. The legal challenge was resolved in early FY 2013, allowing site construction to commence. The project schedule will be rebaselined in FY 2013 and the FY 2013 performance report will report ATST's EVM construction performance relative to the new baseline.

Strategic Goal 1: Transform the Frontiers

Strategic Objective/Performance Goal T-4: Enhance research infrastructure and promote data access to support researchers' and educators' capabilities and to enable transformation at the frontiers.

Strategic Target: Ensure data generated by NSF's major multi-user facilities are widely accessible to the research community.

Goal T-4.2 Priority Goal: Access to Digital Products of NSF-Funded Research

Lead Organization in FY 2012: Directorate for Mathematics and Physical Sciences.

Fiscal Year	Goal Statement and Target	Target Measure, Milestone, or Deliverable	Result
2012	Increase opportunities for research and education through public access to high-value digital products of NSF-funded research.	By September 30, 2013, NSF will have established policies for public access to high-value data and software in at least two data-intensive scientific domains.	In progress: FY 2012 milestones met.[4]
Actual Results for Preceding Fiscal Years			
2011	Determine current data management practices at NSF-funded facilities.	Current data management practices documented for 100 percent of NSF-funded facilities.	Achieved: 17 of 17 facilities.

Discussion

The FY 2011 performance goal examined data management practices at NSF funded facilities to determine whether these facilities had policies regarding data access. NSF examined written policies from cooperative agreements, program plans, and major facility websites and determined that many NSF-funded large facilities, which represent their scientific domains, already encourage principal investigators to share access to data and software. FY 2013 activities will shift the focus from large facilities to other types of NSF investments.

For a fuller report on FY 2012 activities towards this Priority Goal, please refer to the "Progress and Next Steps" tab on this Priority Goal's page on performance.gov.[4]

[4] http://goals.performance.gov/goal_detail/NSF/387

Strategic Goal 2: Innovate for Society

Strategic Objective/Performance Goal I-1: Make investments that lead to results and resources that are useful to society.

Strategic Target: NSF investments underpin long-term solutions to societal challenges such as economic development, climate change, energy, and cyber-security.

Goal I-1.1 Priority Goal: Innovation Corps

Lead Organization: Directorate for Engineering.

Fiscal Year	Goal Statement and Target	Target Measure, Milestone, or Deliverable	Result
2012	Increase the number of entrepreneurs emerging from university laboratories.	By September 30, 2013, 80 percent of teams participating in the Innovation Corps program will have tested the commercial viability of their product or service.	Achieved. Annual rate: 93 percent.

Discussion
I-Corps was launched in 2011 with the first cohort of teams immersed in the rigorous Entrepreneurial Immersion curriculum in October 2011. In fiscal year 2012, the program was offered in October, January, March, and July. A total of 100 teams were accepted to the six-month program. The goal was for 80 percent of the teams to complete the program. Of the 46 teams in the program in FY 2012, 43 completed the program for an overall completion rate of 93 percent. Processes are in place to nurture future teams to retain the unexpected level of success of the early adopters who participated in the program's initial year.

Performance improvement activities were undertaken in FY 2012 in support of this goal. Stakeholder feedback meetings were held to monitor and improve processes, and two additional I-Corps options, I-Corps Nodes and I-Corps Sites, were initiated to broaden the program to larger numbers of teams and to offer the Entrepreneurial Immersion curriculum at more venues.

For a fuller report on FY 2012 activities towards this Priority Goal, please refer to the "Progress and Next Steps" tab on this Priority Goal's page on performance.gov.[5]

Quarterly results for Priority Goal

Fiscal Year Quarter	Target Value	Actual Value	Explanation Of Actual
2012-Q3	80 percent	90 percent	Of 21 teams enrolled, 19 completed the program.
2012-Q4	80 percent	96 percent	Of 25 teams enrolled, 24 completed the program.

[5] http://goals.performance.gov/goal_detail/NSF/389

Strategic Goal 2: Innovate for Society

Strategic Objective/Performance Goal I-1: Make investments that lead to results and resources that are useful to society.

Strategic Target: NSF investments underpin long-term solutions to societal challenges such as economic development, climate change, energy, and cyber-security.

Goal I-1.2 Industrial and Innovation Partnerships

Lead Organization: Directorate for Engineering.

Fiscal Year	Goal Statement and Target	Target Measure, Milestone, or Deliverable	Result
2012	Identify the number and types of partnerships entered into by Industrial & Innovation Partnerships (IIP) Division grantees.	• Count number of financial partnerships in FY 2010 and FY 2011 made by IIP program grantees. • Evaluate the potential to collect other types of partnership data in the future.	Achieved. See table below for results.
Actual Results for Preceding Fiscal Years			
2011	Industrial and Innovation Partnerships (IIP): Identify the number and types of grantee's partnerships.	Establish baseline for 2010.	Achieved. Baseline: 1,567 partnerships.

Discussion
Using the Directorate for Engineering's IIP division as the model to start the process of collecting data on diverse types of partnerships is intended as the beginning of a process to identify how the links between science, industry, and innovation transfer the long term impacts of NSF investments.

In FY 2012, the data collection system was redesigned and new data tools were available. As a result, the method used in 2011 was updated and the FY 2010 results re-baselined using the new data collection tool. The results shown below for FYs 2010 and 2011 were obtained using the new method.

Type of partnership	FY 2010	FY 2011
Sub-award partnerships	251	173
Consulting partnerships	178	162
Award partnerships	130	185
Supplement partnerships	179	192
I/UCRC partnerships	173	355
Total	**911**	**1,067**

Strategic Goal 2: Innovate for Society

Strategic Objective/Performance Goal I-2: Build the capacity of the nation's citizenry for addressing societal challenges through science and engineering.

Strategic Target: NSF's scientific literacy and public engagement programs are supported by rigorous evidence about learning outcomes.

Goal I-2.1 Public Understanding and Communication

Lead Organization: Division of Research on Learning in Formal and Informal Settings, Directorate for Education and Human Resources.

Fiscal Year	Goal Statement and Target	Target Measure, Milestone, or Deliverable	Result
2012	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.	By September 30, 2012, deliver an internal report defining standards of evidence for the models used by the 16 programs identified in FY 2011 that fund public understanding and communication of science and engineering. Identify all programs across the agency that employ the models and strategies.	Achieved. Internal report of evidence standards and inventory produced. Nineteen programs identified.
Actual Results for Preceding Fiscal Years			
2011	Identify number of programs that fund activities that address public understanding and communication of science and engineering.	Establish baseline.	Achieved. Baseline: 16 programs

Discussion

In the internal report, two sets of standards of evidence for what works are recommended for adoption: one for practice and implementation activities and one for research and development activities. Each builds on current research. The report also provides information for design principles related to practice and implementation as evidentiary standards are relatively new to this field. The evidentiary standards recommended here will be refined following input received from NSF program officers during piloting in FY 2013 and FY 2014. The standards will also be updated within a few years to reflect developments in the field.

Strategic Goal 2: Innovate for Society

Strategic Objective/Performance Goal I-2: Build the capacity of the nation's citizenry for addressing societal challenges through science and engineering.

Strategic Target: NSF's K-12 STEM education investments are designed and tested for scale-up.

Goal I-2.2 K-12 Components

Lead Organization: Directorate for Education and Human Resources.

Fiscal Year	Goal Statement and Target	Target Measure, Milestone, or Deliverable	Result
2012	Establish a common set of evidentiary standards for programs across the agency that fund activities with K-12 components.	By September 30, 2012, • Identify the number of programs that fund activities with K-12 components. • Develop common standards of evidence for inclusion in future solicitations of the identified programs.	Achieved. Evidence standards and inventory have been documented. Fourteen programs were identified (3 deleted from the initial list and one added to the list).
Actual Results for Preceding Fiscal Years			
2011	Identify number of programs that fund activities with K-12 components.	Establish baseline.	Achieved. Baseline: 16 programs.

Discussion

There is increasing interest across the federal government not just to count the number of programs addressing K-12 education, but to examine the potential of projects for going to scale and moving beyond the initial site to be implemented successfully under typical conditions and with population groups that are broadly reflective of that intended for the scale-up setting (Draft Evidence Standards). A more accurate and complete list of NSF's K-12 programs is the first step in identifying the programs that have the capacity to establish the conditions that enable projects to go to scale.

The FY 2011 list of programs with an explicitly stated K-12 programmatic mission or a programmatic component directed explicitly at K-12 education was updated. Fourteen programs were identified:

1. CISE: Computing Education for the 21s Century
2. CISE/EHR/SBE: Cyberlearning: Transforming Education
3. EHR: Discovery Research K-12
4. EHR: Innovative Technology Experiences for Students and Teachers
5. EHR: Math and Science Partnership
6. EHR: Research and Evaluation on Education in S & E (REESE)
7. EHR: Advanced Technological Education (ATE)
8. EHR: Noyce Scholarship Program
9. ENG: Research Experiences for Teachers (Sites)
10. GEO: Geoscience Education
11. GEO: Opportunities for Enhancing Diversity in Geosciences (OEDG)
12. GEO: GEO Teach
13. SBE: Science of Learning Centers

14. Multiple: Climate Change Education (CCE) Phase II

Several different standards of evidence were reviewed and the standards best suited to the range of K-12 activities conducted across NSF were chosen (CoSTEM 2012, *Design Principles for Learning Investments and Engagement Investments*). A checklist was drafted based on these standards to potentially guide PIs, reviewers, and program officers as they develop or review proposals.

Strategic Goal 2: Innovate for Society

Strategic Objective/Performance Goal I-3: Support the development of innovative learning systems.

Strategic Target: NSF invests in innovative learning tools and structures that use emerging technologies and are tested for effectiveness and scalability.

Goal I-3.1 Innovative Learning Systems

Lead Organization: Directorate for Education and Human Resources.

Fiscal Year	Goal Statement and Target	Target Measure, Milestone, or Deliverable	Result
2012	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.	By September 30, 2012, write a synthesis report on NSF support of Innovative Learning Systems supporting common language for solicitations.	Achieved. Report written. See summary below.
Actual Results for Preceding Fiscal Years			
2011	Identify number of programs that fund the development of research-based innovative learning systems.	Establish baseline.	Achieved. Baseline: 150 awards across 28 distinct programs.

Discussion

This Goal's intent was to identify activities across the Foundation that contribute to the development of innovative learning systems. Such activities are not funded by any one program within NSF. In FY 2011, NSF's baseline for this area of research was determined using a latent semantic analysis tool to analyze awards made that fit into the general category of Research-Based Innovative Learning Systems (ILS). In FY 2011, 150 awards were identified, 95 percent of which were made by eight divisions within the EHR, Computer and Information Science (CISE), and Engineering (ENG) directorates. The awards corresponded to 28 distinct programs. In FY 2012, 138 total awards were identified within six directorates. The three largest contributors to the total were EHR (64), CISE (43) and ENG (17), with some awards in the Office of Cyberinfrastructure (now part of CISE), the Directorate for Social, Behavioral and Economic Sciences, and the Directorate for Geosciences. The awards corresponded to 30 distinct programs.

Strategic Goal 3: Perform as a Model Organization

Strategic Objective/Performance Goal M-1: Achieve management excellence through leadership, accountability, and personal responsibility.

Strategic Target: More effective management enables all staff to understand how their duties support the mission of the Foundation.

Goal M-1.1 Model EEO Agency

Lead Organization: Office of Diversity and Inclusion.

Fiscal Year	Goal Statement and Target	Target Measure, Milestone, or Deliverable	Result
2012	Perform activities necessary to attain essential elements of a model EEO agency, as defined by the Equal Employment Opportunity Commission (EEOC).	Attain four of six essential elements. Submit Diversity and Inclusion Strategic Plan to OPM by March 30, 2012.	Achieved: Four elements attained. Plan submitted by deadline.
Actual Results for Preceding Fiscal Years			
2011	Attain essential elements of a model Equal Employment Opportunity (EEO) program, as defined in Equal Employment Opportunity Commission (EEOC) requirements.	Three elements.	Achieved: Three elements obtained.

Discussion

For NSF to achieve model EEO agency status, it must meet and maintain each of the six criteria established by the Equal Employment Opportunity Commission (EEOC). The EEOC refers to these criteria as the "Essential Elements" of a Model Agency, which are:

A. Demonstrated commitment from agency leadership;
B. Integration of EEO into the agency's strategic mission;
C. Management and program accountability;
D. Proactive prevention of unlawful discrimination;
E. Efficiency; and
F. Responsiveness and legal compliance.

In FY 2012, NSF fully achieved and complied with five of the six essential elements towards attaining a model EEO Agency Program: elements A, B, D, E, and F.

EEOC Essential Element Definitions and NSF Activities

Essential Element	NSF Activities
A: Demonstrated commitment from agency leadership requires the agency head to issue a written policy statement ensuring a workplace free of discriminatory harassment and a commitment to equal employment opportunity.	NSF continued to fully achieve and comply with all of essential element A when it ensured EEO policy statements were current, communicated to all employees, and vigorously enforced by agency management.
B: Integration of EEO into the	NSF has continued to fully achieve and comply with all of essential

agency's strategic mission requires that the agency's EEO programs be organized and structured to maintain a workplace that is free from discrimination in any of the agency's policies, procedures or practices and supports the agency's strategic mission.	element B when it ensured the reporting structure for the EEO program provides the principal EEO official with appropriate authority and resources to effectively carry out a successful EEO program; the EEO Office has a regular and effective means of informing the agency head and senior management officials of the status of EEO programs; the EEO Office is involved in, and is consulted on, management/personnel action; and agency has committed sufficient human resources and budget allocations to its EEO programs to ensure successful operation.
C: Management and program accountability requires the Agency Head to hold all managers, supervisors, and EEO Officials responsible for the effective implementation of the agency's EEO Program and Plan.	NSF has made progress toward the achievement and compliance with essential element C. NSF has continued to fully achieve and comply with the EEO program officials advising and providing appropriate assistance to managers/supervisors about the status of EEO programs within each manager's or supervisor's area or responsibility. NSF is in progress toward the achievement of the measure of whether the Human Resources Director and the EEO Director meet regularly to assess whether personnel programs, policies, and procedures are in conformity with instructions contained in EEOC management directives regarding time-tables and schedules for Merit Promotion Program Policy, Employee Recognition Awards Program, and Employee Development/Training Programs. NSF is also beginning dialogue about when findings of discrimination are made, the agency explores whether or not disciplinary actions should be taken.
D: Proactive prevention requires that the Agency Head makes early efforts to prevent discriminatory actions and eliminate barriers to equal employment opportunity in the workplace.	NSF has continued to fully achieve and comply with all of essential element D when it conducts analyses to identify and remove unnecessary barriers to employment throughout the year; and encourages the use of alternative dispute resolution with involvement of senior management.
E: Efficiency requires that there are effective systems in place for evaluation of the impact and effectiveness of the agency's EEO Programs as well as an efficient and fair dispute resolution process.	NSF has continued to fully achieve and comply with all of essential element E when it provided sufficient staffing, funding, and authority to achieve the elimination of identified barriers; provided an effective complaint tracking and monitoring system to increase the effectiveness of the agency's EEO programs; provided sufficient staffing, funding, and authority to comply with the time frames in accordance with the EEOC regulations for processing EEO complaints of employment discrimination; provided an effective and fair dispute resolution process and effective systems for evaluating the impact and effectiveness of the agency's EEO complaint processing program; and implemented effective systems for maintaining and evaluating the impact and effectiveness of its EEO programs.
F: Responsiveness and legal compliance requires that federal agencies are in full compliance with EEO statutes and EEOC regulations, policy guidance, and other written instructions.	NSF has continued to fully achieve and comply with all of essential element F when the agency's system of management controls ensures that the agency completes all ordered corrective actions in a timely manner and submits its compliance report to EEOC within 30 days of such completion; and agency personnel are accountable for the timely completion.

Strategic Goal 3: Perform as a Model Organization

Strategic Objective/Performance Goal M-1: Achieve management excellence through leadership, accountability, and personal responsibility.

Strategic Target: More effective management enables all staff to understand how their duties support the mission of the Foundation.

Goal M-1.2 Intergovernmental Personnel Agreement (IPA) Performance Plans

Lead Organization: Division of Human Resources Management, Office of Information and Resource Management.

Fiscal Year	Goal Statement and Target	Target Measure, Milestone, or Deliverable	Result
2012	Include assignees on temporary appointment to NSF under the Intergovernmental Personnel Act (IPAs) under an NSF performance management system.	• By March 31, 2012, 95 percent of executive-level IPAs whose assignments have at least 90 days remaining will have performance plans in place. • By September 30, 2012, 90 percent of non-executive IPAs whose assignments have at least 90 days remaining will have performance plans in place.	• Achieved: 100 percent of executive-level IPAs had performance plans in place. • 92 percent of non-executive IPAs had performance plans in place.
Actual Results for Preceding Fiscal Years			
2011	Include temporary staff appointed under the Intergovernmental Personnel Act (IPAs) under NSF's performance management system.	As of July 1, 2011, • 80 percent of all IPAs have performance plans. • 90 percent of IPAs in executive-level positions have performance plans.	Achieved: 92 percent of all IPAs had performance plans. 90 percent of executive IPAs had performance plans in place.

Discussion

The Intergovernmental Personnel Act (IPA) mobility program (5 CFR part 334) provides the authority for NSF to bring in scientific staff for limited periods of time. IPA assignees are on detail to NSF and remain on the payroll of their home institution. Using the IPA authority to recruit active researchers infuses new talent and expertise into NSF and provides scientists and engineers with valuable information and knowledge to bring back to their home institutions. NSF's use of the IPA helps to maintain the Foundation's close association with the Nation's colleges and universities and the contributions made by NSF's IPA scientists furthers the agency's mission of supporting the entire spectrum of science and engineering research and education. This goal addresses human resource management challenges specific to NSF that were identified by Congress, the Office of Personnel Management, and NSF's Office of the Inspector General.

Before FY 2011, IPAs were not required to submit performance plans. In FY 2011, a performance goal to expand the coverage of NSF's performance management framework to include IPAs was set.

Including IPAs in an annual performance assessment affords supervisors and IPAs an opportunity to communicate on a regular basis around goal attainment and challenges. FY 2012 Federal Employee Viewpoint Survey (FEVS) results support the value of the new process. Scores in two related FEVS questions improved significantly between FY 2011 and FY 2012, the same time period where IPAs began receiving more formal performance reviews.

Federal Employee Viewpoint Survey results for NSF IPAs

	2011 (IPA)	2012 (IPA)	% Change
(19) In my most recent performance appraisal, I understood what I had to do to be rated at different performance levels (for example, Fully Successful, Outstanding).	48%	62%	+29%
(50) In the last six months, my supervisor/team leader has talked with me about my performance.	51%	74%	+45%

Strategic Goal 3: Perform as a Model Organization

Strategic Objective/Performance Goal M-1: Achieve management excellence through leadership, accountability, and personal responsibility.

Strategic Target: More effective management enables all staff to understand how their duties support the mission of the Foundation.

Goal M-1.2 Performance Management System

Lead Organization: Division of Human Resources Management, Office of Information and Resource Management.

Fiscal Year	Goal Statement and Target	Target Measure, Milestone, or Deliverable	Result
2012	Use findings from assessments to guide improvement of NSF's employee performance management systems.	By September 30, 2012, deliver an action strategy for improvement of one to three areas noted in NSF's SES or GWF PAAT or identified in NSF's FEVS results to the NSF CHCO.[6]	Achieved. Action strategy issued.

Discussion

NSF has two primary performance management systems for NSF employees, one that covers members of the Senior Executive Service (SES) and one that covers the General Workforce (GWF). In 2011, NSF administered OPM's Performance Appraisal Assessment Tool (PAAT) for both the SES and GWF performance management systems. The SES PAAT was submitted to OPM in September 2011, and NSF's SES performance management system was certified in January 2012. NSF can use the OPM review materials and internal review to identify potential areas of weakness and to develop a strategy for improving the SES performance management system in conjunction with a new government-wide approach to SES performance management. The GWF PAAT was submitted to OPM in December 2011. It is still under review at OPM. Feedback from OPM will be incorporated with related internal review processes to develop a strategy for improving the GWF performance management system.

In September of 2012, NSF issued an action strategy to the NSF CHCO entitled "Preliminary Plan for Taking Recommended Actions around NSF's GWF and SES Performance Management Systems – 9/30/12" based upon GWF PAAT and SES PAAT assessment recommendations that includes actions to: (1) strengthen supervisory plans; (2) institutionalize recurring training; and (3) better tie organizational performance results to the ratings and awards given to employees. Implementation of this plan is well under way.

The FEVS is a tool that measures employees' perceptions of whether, and to what extent, the conditions that characterize successful organizations are present in their agencies. The FEVS includes questions related to performance appraisal. The 2011 FEVS found that the percentage of NSF employees who understood what they had to do to be rated at different performance levels was lower than in previous

[6] Acronyms: SES, Senior Executive Service; GWF, General Workforce; PAAT, Performance Appraisal Assessment Tool; FEVS, Employee View Point Survey; CHCO, Chief Human Capital Officer

years. For the FEVS question "In my most recent performance appraisal, I understood what I had to do to be rated at different performance levels (for example, Fully Successful, Outstanding)":

- 2010 FEVS positive response rate: 68 percent.
- 2011 FEVS positive response rate: 63 percent.
- 2012 FEVS target: 65 percent. Positive response rate: 62 percent.
- 2013 FEVS target: 68 percent.

This goal addresses human resource management challenges specific to NSF that were identified by Congress, the Office of Personnel Management, and NSF's Office of the Inspector General.

Strategic Goal 3: Perform as a Model Organization

Strategic Objective/Performance Goal M-2: Infuse learning as an essential element of the NSF culture with emphasis on professional development and personal growth.

Strategic Target: NSF emphasizes learning for personal and professional development for all staff.

Goal M-2.1 Assess Developmental Needs

Lead Organization: Division of Human Resources Management, Office of Information and Resource Management.

Fiscal Year	Goal Statement and Target	Target Measure, Milestone, or Deliverable	Result
2012	Enhance NSF capabilities to provide training of staff for their current positions.	By September 30, 2012, design a structured curriculum which meets assessed needs for at least two types of NSF staff roles (e.g. leaders, program officers, administrative professionals, technical professionals).	Achieved. Designed curricula for supervisors, program officers, and administrative professionals.
Actual Results for Preceding Fiscal Years			
2011	Pilot process for assessing developmental needs and addressing them.	By March 31, 2011 commence survey of administrative support staff. By September 20, 2011, obtain contract support for assessment of non-administrative-support staff.	Achieved Achieved late: contract support obtained September 23, 2011.

Discussion
NSF's core values and strategic goals articulate the high priority that is placed on staff learning and development. This goal addresses a specific action identified in the Strategic Plan: "review current NSF learning opportunities and develop a plan for addressing gaps."

In FY 2011, the Division of Human Resource Management (HRM) developed and launched targeted needs analysis questionnaires designed to generate new learning needs data. In FY 2012, NSF completed its first agency-wide training needs assessment. NSF's Mission Critical Occupations: Administrative Professionals, Program Directors, and leadership occupations are all addressed independently in the needs assessment along with other critical administrative functions. Concurrently, NSF developed proposals for both a competitive Senior Leadership Development Program and a competitive Aspiring Leaders Program to identify and develop high-potential candidates for future leadership positions. The Program Officer training is also undergoing revisions to streamline and integrate different elements to improve the onboarding and continual development of this crucial NSF occupation. In FY 2013, NSF will compare its existing curricula to the needs outlined in the assessment and plan to fill any gaps.

In FY 2012, NSF created a structured curriculum entitled "Core Training From Art & Science" which includes a structured curriculum outline for three types of staff roles: (1) Core Training for Supervisors; (2) Core Training for Program Officers; and (3) Core Training for Administrative Professionals.

NSF is designing and developing tailored training courses as defined in the "Training Support for NSF Academy Management Plan." According to this plan, NSF will "develop an instructor guide that includes the sequence of delivery covering presentation materials, structure and elements of learner activities, and tests." Based upon these specific management plan criteria, NSF is scheduled to develop and complete the course work for these structured curricula in 2013.

Strategic Goal 3: Perform as a Model Organization

Strategic Objective/Performance Goal M-3: Encourage and sustain a culture of creativity and innovation across the agency to ensure continuous improvement and achieve high levels of customer service.

Strategic Target: NSF uses the innovation and creativity of our staff to improve agency processes and systems on a continuing basis.

Goal M-3.1 Grant-By-Grant Payments
Lead Organization: Division of Financial Management, Office of Budget, Finance, and Award Management.

Fiscal Year	Goal Statement and Target	Target Measure, Milestone, or Deliverable	Result
2012	Upgrade NSF's financial system.	By September 30, 2012, to support the iTRAK initiative, the Division of Financial Management (DFM) and the Division of Acquisition and Cooperative Agreements (DACS) will award a contract for the iTRAK financial system implementation and integration services.	Achieved. Contract awarded September 25, 2012.
Actual Results for Preceding Fiscal Years			
2011	Gather functional requirements for changes in current system processes that will accommodate the transition to a grant by grant payment method.	Documentation of functional requirements.	Achieved late: Functional requirements delivered first quarter of FY 2012.

Discussion
Financial system modernization efforts have been underway at NSF for several years. The iTRAK effort–a Foundation-wide effort to transition NSF from its legacy financial support systems to a fully integrated, commercial-off-the-shelf (COTS) financial management shared services solution—is central, but other modernization steps are required as prerequisites. Performance goals related to the activities were first developed in FY 2011 to measure one of these prerequisites, the gathering of requirements for the transition to a grant-by-grant payment method. This payment method is a prerequisite for the transition to a COTS financial management shared services solution.

In FY 2012, NSF selected a system integration contractor to implement the COTS solution.

Strategic Goal 3: Perform as a Model Organization

Strategic Objective/Performance Goal M-3: Encourage and sustain a culture of creativity and innovation across the agency to ensure continuous improvement and achieve high levels of customer service.

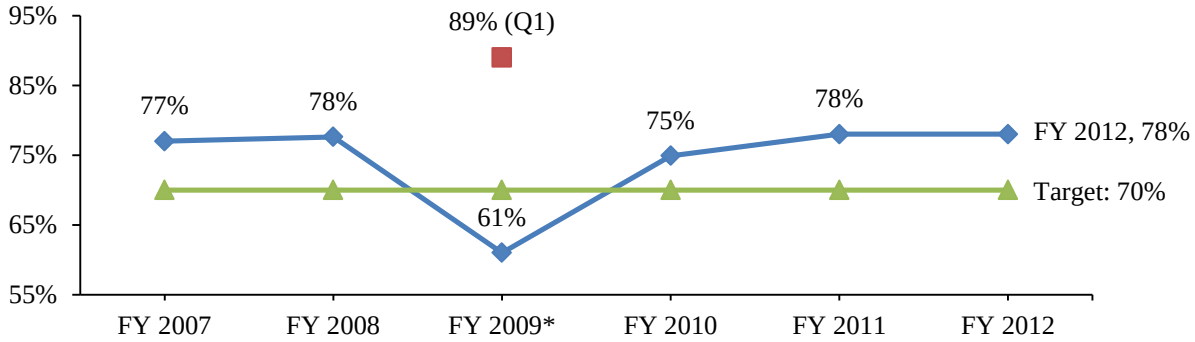
Strategic Target: NSF organizations achieve high levels of customer satisfaction.

Goal M-3.2 Time to Decision

Lead Organization: Office of the Director.

Fiscal Year	Goal Statement and Target	Target Measure, Milestone, or Deliverable	Result
2012	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.	70 percent.	Achieved. 78 percent.

Time to Decision Performance Trends, FY 2006-FY 2012



*In FY 2009, this goal was in effect only for the period October 1 through December 31, 2008 (Quarter 1, FY 2009). The goal was suspended for all actions taking place between January 1, 2009 and September 30, 2009 to allow for a greater number of proposals to be processed with the additional funds from the American Recovery and Reinvestment Act of 2009 (ARRA).

Time to decision or "dwell time" is the amount of time that passes between receipt of a proposal and notification to the principal investigator about the funding decision. One of the most significant issues raised in customer satisfaction surveys is the time it takes NSF to process proposals. Too long a time period inhibits the progress of research as it delays the funding process, but too short a time period may inhibit the merit review process. The six-month target seeks to strike a balance between the need of the investigator for timely action and the need of NSF for a credible and efficient merit review system.

The most relevant recent variations in performance took place in FY 2009 and FY 2010. In FY 2009, the goal was suspended after the first quarter to allow for a greater number of proposals to be processed with additional funds from ARRA. The goal was reinstated in FY 2010, when NSF exceeded this goal despite a significant increase in workload. Overall, staffing levels increased by 5.5 percent between FY 2008 and FY 2012, while proposal pressure increased by 10.0 percent.

Strategic Goal 3: Perform as a Model Organization

Strategic Objective/Performance Goal M-3: Encourage and sustain a culture of creativity and innovation across the agency to ensure continuous improvement and achieve high levels of customer service.

Strategic Target: NSF organizations achieve high levels of customer satisfaction

Goal M-3.3 Virtual Merit Review Panels (New in FY 2012)

Lead Organization: Office of the Director.

Fiscal Year	Goal Statement and Target	Target Measure, Milestone, or Deliverable	Result
2012	Expand the use of virtual merit review panels.	By September 30, 2012, develop guidelines and training modules for NSF staff on the use of virtual merit review panels.	Achieved. Training modules developed.

Discussion

NSF makes extensive use of panels of reviewers to evaluate proposals. The predominant practice is for the panelists to travel to a single location, usually NSF, and meet face-to-face for one to five days. In FY 2010, approximately 2,100 review panels were held. Of these, just over one quarter involved six or fewer panelists. Face-to-face panels impose a significant time burden on the reviewers, making some potential reviewers reluctant to participate. For example, panelists with young children may not be able to obtain two continuous days of childcare, or panelists in remote locations or foreign countries may find the amount of travel required prohibitive. It also causes NSF to incur significant travel costs.

As used in reference to this goal, the term "virtual panel" refers to a panel meeting in which the reviewers do not travel to a common location but instead participate via teleconference, videoconference or an online meeting technology. NSF has experimented with virtual panels at a small scale for several years. In FY 2011, approximately 2.2 percent of panels were virtual panels, and approximately one percent of proposals that were reviewed by panels were reviewed by virtual panels.

In FY 2012, administrative offices and program staff collaborated to develop the first of a planned set of four training modules for organizers of virtual panels at NSF. An internal web-site that provides guidance to NSF staff on when to choose a virtual panel and how best to implement such panels was also developed and numerous outreach activities were conducted to familiarize staff with the resources available to them. In FY 2012, 99 virtual panels were conducted.

FY 2014 PERFORMANCE PLAN

Goal ID	Goal Short Title	Lead organization	Goal Statement
1	Ensure that Key Program Investments are on track	OD	Meet critical targets for key FY 2014 program investments.
2	Ensure that infrastructure investments are on track	BFA SBE	Ensure program integrity and responsible stewardship of major research facilities and infrastructure.
3	Use Evidence to Guide Management Decisions	OIRM	Use evidence-based reviews to guide management investments.
4	Improve Undergraduate Education	EHR	Establish an NSF-wide undergraduate STEM education program that is evidence-based and evidence-building.
5	Enhance National Graduate Research Fellowships	EHR	Enhance the Graduate Research Fellowship program to provide a wider range of career development opportunities.
6	Promote Career-Life Balance Policies and Practices	OIIA	Promote 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.
7	Foster an Environment of Diversity and Inclusion	ODI	Foster an environment of diversity and inclusion while ensuring compliance with the agency's civil rights programs.
8	Modernize Financial System	BFA	Upgrade NSF's financial system.
9	Make Timely Award Decisions	OIIA BFA	Inform applicants whether their proposals have been declined or recommended for funding within 182 days, or six months, of deadline, target, or receipt date, whichever is later.
10	Enable Increased Use of Virtual Merit Review	OD	Improve the ability to use virtual merit review panels by incorporating technological innovations into review process.

NSF Performance Framework

NSF's FY 2014 Performance Plan reflects NSF's priorities as identified through the budget process. The major change from prior year plans is the development of a new performance framework for strategic monitoring of key program, infrastructure, and management investments.

Goals 1, 2, and 3 were created to provide a means by which NSF leadership can provide strategic monitoring and oversight of progress being made on the Foundation's most important activities: our priority program investments, research infrastructure investments, and key management initiatives. Each of these goals will be reviewed by senior management on a quarterly basis.

Goal 1: Key Program Investments

Fiscal Year	**2014**
Goal Statement	Meet critical targets for key program investments.
Indicator and Target Measure, Milestone, or Deliverable	Monitor the progress of the following investments using a common set of milestones and indicators: • CEMMS • CIF21 • I-Corps • INSPIRE • SaTC • SEES
Description	Major investments will be strategically monitored using a set of common metrics. These may include: • Contextual indicators, such as the investment's funding level. • Input indicators, such as date of release of solicitation, number of proposals received, numbers of reviews conducted. • Output indicators, such as number of awards, average and total amounts awarded, and funding rate. • Medium-term output and outcome indicators that funded projects are on track. • Activity-specific outcome indicators, e.g. those relating to programmatic long-term goals to change a given field. The central mechanism for this goal will be quarterly review meetings to discuss progress.
Trend Information	This is a new goal in FY 2014. Since FY 2012, the INSPIRE and I-Corps programs have been the subjects of performance goals. For more information on those goals, refer to the FY 2012 Annual Performance Report.
Strategic Goal Linkage, FY 2011-FY 2016 Strategic Plan	Transform the Frontiers -1: Make investments that lead to emerging new fields of science and engineering and shifts in existing fields. Innovate for Society -1: Make investments that lead to results and resources that are useful to society. Innovate for Society -2: Build the capacity of the Nation's citizenry for addressing societal challenges through science and engineering.
Lead Organization	Office of the Performance Improvement Officer, Office of Budget, Finance, and Award Management.

Goal 2: Research Infrastructure Investments

Fiscal Year	**2014**
Goal Statement	Ensure program integrity and responsible stewardship of key research facilities and infrastructure.
Indicator and Target Measure, Milestone, or Deliverable	• Construction Project Monitoring: For all MREFC facilities under construction that are over 10 percent complete, keep negative cost and schedule variance at or below 10 percent. • Public Access to Data: Deploy the first implementation of the NSF public access system.
Description	This overarching goal monitors NSF-funded facilities and infrastructure at varying stages of their lifecycle. • NSF monitors the performance of projects funded by the Major Research Equipment and Facilities Construction (MREFC) account, monitoring cost and schedule, a standard measure of performance for construction projects. Projects that are under ten percent complete are not considered eligible for this goal because EVM data is statistically less meaningful in early stages. • NSF will launch a Public Access Initiative that will make the results of NSF-funded research broadly available with minimal barriers. NSF's public access policy will accelerate progress in scientific research, encourage citizens to become scientifically literate, and foster creative partnerships with the private sector. Building on progress made in FY 2012 and FY 2013, NSF will develop plans and pilots in FY 2014 for enhanced access to selected products of NSF funding, specifically peer-reviewed journal articles, and for inclusion of information about those products in NSF reporting and proposal systems. For more information, see the NSF-Wide Investments chapter.
Trend Information	While this is a new goal in FY 2014, NSF has tracked the first component, the performance of its construction projects, as a performance goal for over a decade. For more information about this component, see the FY 2012 Annual Performance Report.
Strategic Goal Linkage, FY 2011-FY 2016 Strategic Plan	Transform the Frontiers -4: Enhance research infrastructure and promote data access to support researchers' and educators' capabilities and to enable transformation at the frontiers.
Lead Organization/s	Construction Project Monitoring: Office of Budget, Finance, and Award Management. Public Access Initiative: Directorate for Social, Behavioral, and Economic Sciences.

Goal 3: Data-driven Management Reviews

Fiscal Year	**2014**
Goal Statement	Use evidence-based reviews to guide management investments.
Indicator and Target Measure, Milestone, or Deliverable	PortfolioStat measures: • NSF's information technology governance boards will evaluate and prioritize proposed investments for FY 2016. • NSF will move toward a standardized computing environment, reducing purchase costs by $300,000 below FY 2012 levels by FY 2014. • Migration to cloud email provider will reduce costs by approximately $240,000 below FY 2012 levels by FY 2014. HRStat measures: • Develop a human capital management dashboard to report progress toward human capital (HC) goals and to monitor HC metrics, for use as an internal resource for informing investment decisions. • Establish a review process which culminates in quarterly reviews of HC metrics by senior management and which incorporates, to the extent possible, OPM's human capital accountability system requirements.
Description	This goal captures NSF's commitment to two government-wide processes, Portfolio Stat and HR Stat, which aim to ensure that decisions regarding resource investments are made through formal processes involving cross-agency decision-makers. Data regarding business need, cost, and risk-analysis will be provided. This approach to decision making promotes transparency and accountability through data driven decision-making. As directed in OMB M-12-10, "Implementing PortfolioStat," NSF will employ this new tool to assess the current maturity of its IT portfolio management process, make decisions on eliminating duplication, augment current CIO-led capital planning and investment control processes, and move to shared solutions in order to maximize the return on IT investments across the portfolio. NSF's Human Capital targets were informed by participation in the HRStat Pilot in FY 2013. NSF will build upon this experience through continued participation in FY 2014. The Human Capital Dashboard will align with the goals set out in current and future strategic plans; will incorporate human capital goals defined in the Federal Employee Viewpoint Survey action plan, and will integrate OPM's revised Human Capital Framework. The accompanying review process will update and formalize the review process piloted through HRStat in FY 2013 and incorporate the HC dashboards as a mechanism to track, monitor, and report on progress. NSF will hold at least two reviews during FY 2014.
Trend Information	This is a new goal in FY 2014, and a new approach to monitoring management investments. Since FY 2011, the Office of the CHCO has led three performance goals per year relating to human resources development. For more information about those goals, refer to the Annual Performance Reports for those years.

Goal 3: Data-driven Management Reviews (continued)

Fiscal Year	**2014**
Goal Statement	Use evidence-based reviews to guide management investments.
Strategic Goal Linkage, FY 2011-FY 2016 Strategic Plan	Perform as a Model Organization -2: Infuse learning as an essential element of the NSF culture with emphasis on professional development and personal growth. Perform as a Model Organization-3: Encourage and sustain a culture of creativity and innovation across the agency to ensure continuous improvement and achieve high levels of customer service.
Lead Organization/s	Office of the CIO, Office of Information and Resource Management Office of the CHCO, Office of Information and Resource Management

Goal 4: Improve Undergraduate Education

Fiscal Year	**2014**
Goal Statement	Establish an NSF-wide undergraduate STEM education program that is evidence-based and evidence-building.
Indicator and Target Measure, Milestone, or Deliverable	By October 30, 2013, perform an environment scan/gap analysis of undergraduate education efforts across NSF using a principle-based framework, and make recommendations for addressing the gaps and overlaps. By December 31, 2013, issue a solicitation for the Catalyzing Advances in Undergraduate STEM Education (CAUSE) program. By September 30, 2014, conduct a portfolio analysis of CAUSE-funded projects to summarize the evidence base upon which they rest and the plans they have for building evidence.
Description	The America COMPETES Reauthorization Act of 2010 called for the creation of a committee under the National Science and Technology Council (NSTC) to coordinate federal programs and activities in support of STEM education. The NSTC's Committee on Science, Technology, Engineering, and Mathematics Education (CoSTEM) has identified undergraduate STEM education as a priority and increasing the number of STEM graduates as a goal. The President's Council of Advisors on Science and Technology (PCAST) report, *Engage to Excel*, and the National Academies report, *Expanding Underrepresented Minority Participation: America's Science and Technology Talent at the Crossroads*, underscores the lack of persistence of STEM students from all groups in the first two years of college. To counteract this, the PCAST report recommends widespread implementation of evidence-based teaching practices, including the integration of discovery-based laboratory courses, as methods that have strong potential to enhance retention. NSF is committed to serving a leadership role in achieving important goals for production of STEM professionals. NSF's CAUSE program, to be launched in FY 2014, is a natural evolution and consolidation of the Foundation's ongoing efforts to couple STEM disciplinary expertise with education research expertise to better understand and improve undergraduate STEM learning and persistence of students from all groups. CAUSE will provide coherence across all NSF undergraduate education programs to maximize the effectiveness of NSF investments in improving the STEM learning experiences of undergraduates.

Goal 4: Improve Undergraduate Education (continued)

Fiscal Year	**2014**
Goal Statement	Establish an NSF-wide undergraduate STEM education program that is evidence-based and evidence-building.
Description (continued)	To maximize the effectiveness of CAUSE on STEM undergraduate education, a research and development-based planning matrix will be used to build coherence and complementarity in education investments across NSF and to inform strategic planning. The 2014 goal is to develop this matrix, align existing investments across the Foundation, and make recommendations on how to address gaps and overlaps. In addition, CAUSE will seek projects that are both based in available evidence and that plan to build evidence, and will document the portfolio on those dimensions in FY 2014. For more information about the CAUSE investment, please refer to the NSF-Wide Investments chapter.
Trend Information	CAUSE is built upon a knowledge base informed by decades of work on STEM undergraduate education. It builds upon NSF's FY 2011-2013 performance goals, including the FY 2012-FY 2013 Priority Goal that involved developing standards for gaining information about instructional practices across institutions receiving funding for undergraduate education from NSF. This information will continue to be gathered. The FY 2014 goal will provide added information on the overall investment strategy in undergraduate education and how NSF programs can be leveraged to improve instructional practices broadly.
Strategic Goal Linkage, FY 2011-FY 2016 Strategic Plan	Transform the Frontiers -2: Prepare and engage a diverse science, technology, engineering, and mathematics (STEM) workforce motivated to participate at the frontiers.
Lead Organization	Directorate for Education and Human Resources

Goal 5: Enhance National Graduate Research Fellowships

Fiscal Year	2014
Goal Statement	Enhance the Graduate Research Fellowship program to provide a wider range of career development opportunities.
Indicator and Target Measure, Milestone, or Deliverable	The GRF Program will be enhanced to be a National Graduate Research Fellowship (NGRF) Program, a single program for applicants that will provide a wider range of career development opportunities.
Description	The FY 2014 Budget Request introduces a coherent and streamlined investment strategy for the preparation of tomorrow's science and engineering (S&E) workforce. The NSF GRF program will be expanded into a National Graduate Research Fellowship program (NGRF) to incorporate features and opportunities that allow fellows to gain specialized experiences and training in key STEM areas. Creating NGRF will include working across NSF and coordinating with other agencies to determine how NGRF can be enhanced to meet national needs. Achieving this performance goal will involve development of a single call for applications and single web portal for applicants to use, development of a set of targeted opportunities for fellows that align with identified workforce needs, and costs savings through a streamlined and online review process. This will occur in coordination with other agencies. For more information about this activity, please refer to the NSF-Wide Investments chapter.
Trend Information	This is a redesigned activity in FY 2014. The work of consolidating strategy development and administration for graduate fellowships will involve engagement across the Foundation, as well as engagement of other federal agencies, the academic community, and the ultimate employers of the students. The work with other federal agencies will include developing targeted opportunities that can help address national needs. This activity will serve as the first stage of developing a coherent, NSF-wide strategy to consider the multiple forms of support provided for graduate students.
Strategic Goal Linkage, FY 2011-FY 2016 Strategic Plan	Transform the Frontiers-2: Prepare and engage a diverse science, technology, engineering and mathematics (STEM) workforce motivated to participate at the frontiers.

Goal 6: Career-Life Balance

Fiscal Year	2012	2013	2014
Goal Statement	Promote 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.		
Indicator and Target Measure, Milestone, or Deliverable	By September 30, 2012: Establish the FY 2012 baseline for number and value of award support provided to CAREER awardees and postdoctoral fellows intended to fund research technicians (Achieved for Career Awardees).	By September 30, 2013: • Establish the FY 2013 baseline for number and value of awards provided to ADVANCE institutions intended to fund dual career supports. • Increase the number and value of research technician award support provided to CAREER awardees and postdoctoral fellows by 10 percent over FY 2012.	By September 30, 2014: • Conduct a preliminary analysis of the first three years of the CLB Initiative that can be used formatively. • Conduct outreach activities to increase the awareness of the availability of CLB opportunities (within NSF and in communities where awareness is found to be low). • Collaborate with another federal agency to promote career-life balance by developing new ways of partnering with higher education.
Description	NSF's Career-Life Balance (CLB) Initiative — an ambitious, ten-year initiative — will build on the best of career-life balance practices among individual NSF programs to expand them NSF-wide. Using a comprehensive, pathway approach across the educational and career continuum, this agency-level effort will help attract, retain, and advance graduate students, postdoctoral students, and early-career researchers in STEM fields. In FY 2014, CLB will provide additional support (supplements) for research technicians (or equivalent) for early career awardees (CAREER, postdoctoral fellows, and NGRF) who need temporary support to continue research while facing dependent care demands (e.g., child and/or elder care); and for dual career hiring and workforce re-entry (ADVANCE). CLB will continue to pursue partnerships with sister federal agencies, professional associations and societies, private foundations, and with institutions of higher education (the Foundation's primary, direct stakeholders) to systematically change the cultural barriers underpinning this issue. A preliminary analysis of the first three years will be conducted and used to inform future directions.		

Goal 6: Career-Life Balance (continued)

Fiscal Year	2012	2013	2014
Goal Statement	Promote 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.		
Trend Information	In FY 2012, NSF introduced CLB supports for technicians for CAREER awardees who need temporary help to continue research while facing the demands of child and/or elder dependent care. A Dear Colleague Letter was sent to the Principal Investigators of the CAREER program in late FY 2012 that yielded CLB support to 20 Principal Investigators. The potential outcome of doubling or tripling the base number of supplements is anticipated with the announcement of CLB opportunities occurring earlier in FY 2013. Additionally, while the first year of the CLB Initiative supported only CAREER awardees, the support for CLB in FY 2013 expands to include selected postdoctoral programs, the Graduate Research Fellowship Program, and a new emphasis on dual career opportunities through the Increasing the Participation and Advancement of Women in Academic Science and Engineering Careers (ADVANCE)- Institutional Transformation program track.		
Strategic Goal Linkage, FY 2011-FY 2016 Strategic Plan	Transform the Frontiers -2: Prepare and engage a diverse science, technology, engineering, and mathematics (STEM) workforce motivated to participate at the frontiers.		
Lead Organization/s	Office of International and Integrative Activities		

Goal 7: Diversity and Inclusion

Fiscal Year	2012	2013	2014
Goal Statement	To foster an environment of diversity and inclusion while ensuring compliance with the agency's civil rights programs.		
Indicator and Target Measure, Milestone, or Deliverable	• Attain four of six essential elements of a model EEO agency. (FY 2011 baseline: three elements.) • Submit Diversity and Inclusion Strategic Plan to OPM by March 30, 2012. (Achieved)	• Attain five of six essential elements of a model EEO agency. • Assist in implementation of at least one ODI action within NSF's D&I Strategic Plan.	• Attain six of six essential elements of a model EEO agency. • Assist in implementation of one ODI action within NSF's D&I Strategic Plan. • Perform two compliance desk reviews under the applicable anti-discrimination laws.
Description	NSF's diversity and inclusion goal has several components. • For NSF to achieve model EEO agency status, it must meet and maintain each of the six criteria established by the EEOC. The EEOC refers to these criteria as the "Essential Elements" of a Model Agency, which are: 1. Demonstrated commitment from agency leadership; 2. Integration of EEO into the agency's strategic mission; 3. Management and program accountability; 4. Proactive prevention of unlawful discrimination; 5. Efficiency; and 6. Responsiveness and legal compliance. No federal agency has ever attained Model EEO status. NSF's activities have been aimed towards attainment of Model EEO status for several years. • The Office of Diversity and Inclusion (ODI) will work collaboratively with the NSF Chief Human Capital Officer (CHCO) and the Office of Human Resource Management in implementing NSF's first D&I Strategic Plan focusing on specific areas in which potential barriers exist. ODI will continue to identify processes and mechanisms for gathering and incorporating workforce input, which includes holding information sessions with applicable parties and gathering comments and/or suggestions. • Title IX of the Education Amendments of 1972 (hereinafter Title IX) prohibits discrimination based on gender in any educational program or activity receiving federal financial assistance. ODI works collaboratively with the Department of Education in processing and resolving complaints filed under Title IX.		

Goal 7: Diversity and Inclusion (continued)

Fiscal Year	2012	2013	2014
Goal Statement	Foster an environment of diversity and inclusion while ensuring compliance with the agency's civil rights programs.		
Description (continued)	Additionally, ODI's compliance program includes desk and on-site reviews to ensure recipients are in compliance under Title IX. NSF also has implementing regulations to ensure that educational programs that receive NSF funds are free of gender discrimination and harassment. (45 C.F.R. § 618). NSF's regulations under Title VI of the Civil Rights Act of 1964 incorporates NSF's Title IX compliance responsibilities, which require the agency to conduct periodic review of recipient practices to determine if they are in compliance. NSF has adopted a philosophy that involves serving as a resource to grantees while maintaining a balance of identifying and reporting on "career-life" best practices and ensuring full compliance. NSF's process will involve educating its stakeholders on the roles and responsibilities under Titles IX and VI as well as NSF's specific compliance process, which includes a strong communication strategy to all stakeholders, inclusive of NSF's internal staff and grantees. For compliance reviews, NSF will use collaborative approaches that are modeled specifically for its programs and adopted from effective proven models for conducting annual desk and site reviews as part of its risk assessment as well as its Business Systems Review processes. Similar to these models, NSF's compliance process will involve making neutral selections for review, which may include the amount of financial assistance, the location and size of the institution, the demographic composition of the science and math programs granted, the potential impact of a review, and the recentness of a compliance review; engaging and collaborating with recipients; assisting in ensuring basic compliance; and focusing on best practices. NSF's compliance model will also involve conducting desk reviews to gather preliminary compliance information in which participants will be selected based on neutral criteria referenced earlier. NSF will request information needed to evaluate whether a recipient's policies, procedures, and practices are consistent with Title IX and Title VI requirements, NSF's regulations, and other relevant guidelines.		
Trend Information	NSF has been tracking its progress towards Model EEO Agency status as a performance goal since FY 2011. In FY 2011, four of six elements were attained. In FY 2012, five of six elements were attained.		
Strategic Goal Linkage, FY 2011-FY 2016 Strategic Plan	Perform as a Model Organization -1: Achieve management excellence through leadership, accountability, and personal responsibility.		
Lead Organization	Office of Diversity and Inclusion, Office of the Director		

Goal 8: Financial System Modernization

Fiscal Year	2011	2012	2013	2014
Goal Statement	Upgrade NSF's financial system.			
Indicator and Target Measure, Milestone, or Deliverable	Gather functional requirements for changes in current system processes that will accommodate the transition to a grant by grant payment method (achieved late).	By September 30, 2012, to support the iTRAK initiative, the Division of Financial Management (DFM) and the Division of Acquisition and Cooperative Agreements (DACS) will award a contract for the iTRAK financial system implementation and integration services (achieved).	By September 30, 2013, to support the transition to the grant-by-grant payment process known as the Award Cash Management $ervice (ACM$), DFM will reconcile 100 percent of the grantee's reported cash on hand balances as of December 31, 2012 with NSF's general ledger.	Manage cost and schedule variance of the iTRAK system integrator within +/- 10 percent of the baseline.
Description	"iTRAK" is the Foundation-wide effort to transition NSF from its legacy financial support systems to a fully integrated, commercial-off-the-shelf (COTS) financial management shared services solution. Financial system modernization efforts have been underway at NSF for several years. While the iTRAK effort is central, other modernization steps are required as prerequisites, such as the transition of financial processing of grants from a pooled system (quarterly reporting of expenditures by institution) to a grant-by-grant payment process (where grant funds are requested and reported on an individual grant level). This payment method is a prerequisite for the transition to a COTS financial management shared services solution. The FY 2011 target for this goal was the documentation of functional requirements to transition to a real-time payment method.			
Trend Information	NSF has been tracking its progress towards upgrading its financial systems as a performance goal since FY 2011. The FY 2011 goal was achieved several months late. The FY 2012 goal was achieved on time.			
Strategic Goal Linkage, FY 2011-FY 2016 Strategic Plan	Perform as a Model Organization -3: Encourage and sustain a culture of creativity and innovation across the agency to ensure continuous improvement and achieve high levels of customer service.			
Lead Organization	Office of Budget, Finance, and Award Management			

Goal 9: Customer Service: Time To Decision

Fiscal Year	2010	2011	2012	2013	2014
Goal Statement	Inform applicants whether their proposals have been declined or recommended for funding within 182 days, or six months, of deadline, target, or receipt date, whichever is later.				
Indicator and Target Measure, Milestone, or Deliverable	70 Percent (achieved: 75 Percent)	70 Percent (achieved: 78 Percent)	70 Percent (achieved: 78 Percent)	70 Percent (on track)	70 Percent
Description	Time-to-decision or "dwell time" is the amount of time that passes between receipt of a proposal and notification to the principal investigator about the funding decision. One of the most significant issues raised in customer satisfaction surveys is the time it takes NSF to process proposals. Too long a time period inhibits the progress of research as it delays the funding process, but too short a time period may inhibit the merit review process. The six-month target balances the need of the investigator for timely action and the need of NSF for a credible and efficient merit review system. Monitoring the merit review process with the time-to-decision metric is an ongoing practice at NSF.				
Trend Information	NSF has been tracking this measure as a performance goal for over a decade. For additional information and trend data, refer to the Annual Performance Report. FY 2010 result: 75 percent FY 2011 result: 78 percent FY 2012 result: 78 percent				
Strategic Goal Linkage, FY 2011-FY 2016 Strategic Plan	Perform as a Model Organization-3: Encourage and sustain a culture of creativity and innovation across the agency to ensure continuous improvement and achieve high levels of customer service.				
Lead Organization/s	Office of International and Integrative Activities Office of Budget, Finance, and Award Management				

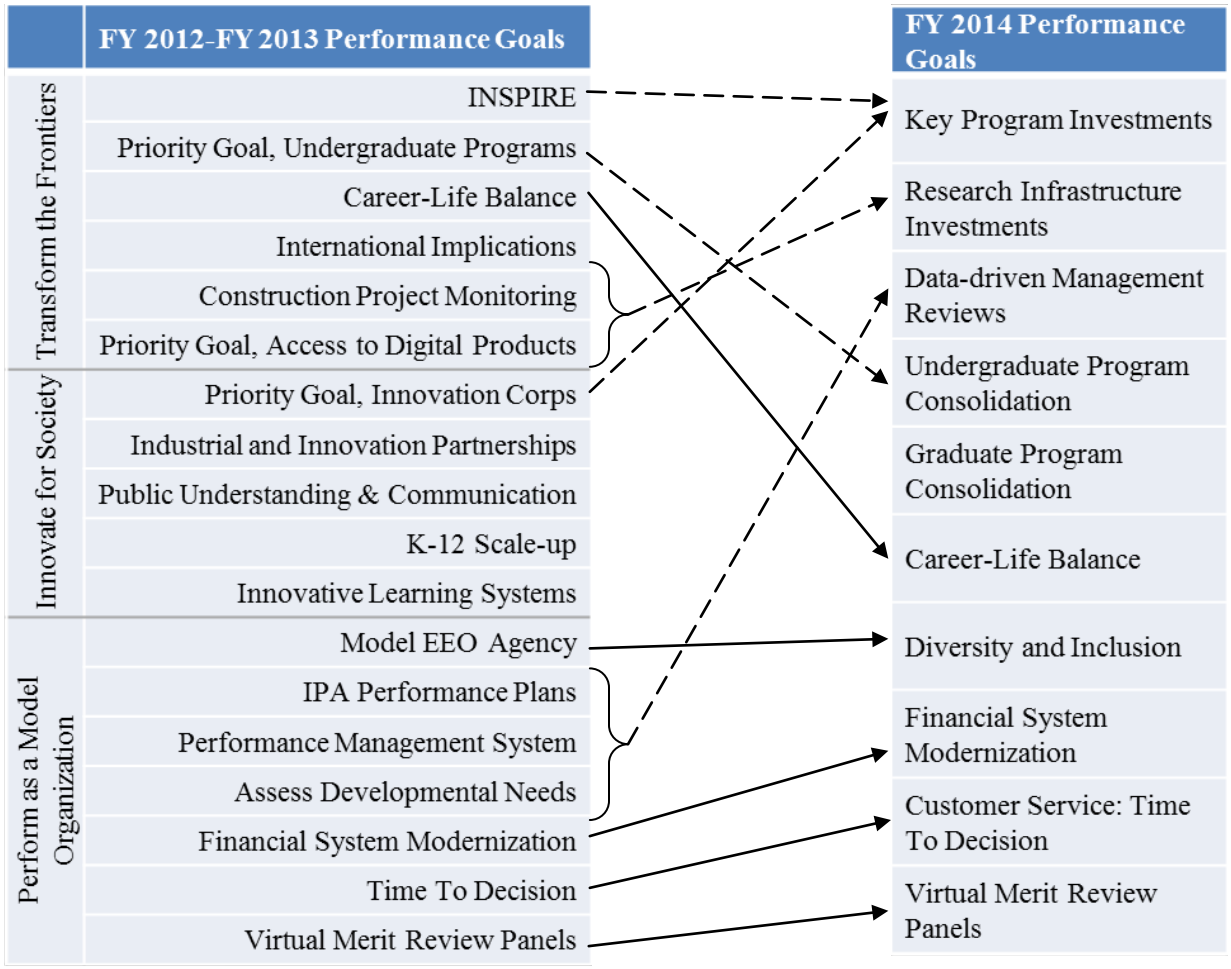
Goal 10: Virtual Merit Review Panels

Fiscal Year	2012	2013	2014
Goal Statement	Incorporate technological innovations into the merit review process by expanding the use of virtual merit review panels.		
Indicator and Target Measure, Milestone, or Deliverable	By September 30, 2012, develop guidelines and a training module for NSF staff on the use of virtual merit review panels (achieved).	As a pilot activity, 5 percent of merit review panels will be wholly virtual panels.	15 percent of merit review panels will be wholly virtual panels.
Description	The merit review process is NSF's most critical business function. Exploiting the use of IT in the merit review process has the potential to broaden participation, reduce reviewer burden, and reduce per-proposal cost of the review process. For more information about this activity, see the NSF-Wide Investments Chapter. NSF makes extensive use of panels of reviewers to evaluate proposals. As used here, the term "virtual panel" refers to a panel meeting in which the reviewers do not travel to a common location but instead participate via teleconference, videoconference, or an online meeting technology. A wholly virtual panel is defined as one in which 100 percent of the panelists participating in a particular panel shall be participating remotely. The predominant practice is for the panelists to travel to a single location, usually NSF, and meet face-to-face for one to five days. In FY 2010, approximately 1,800 review panels were held. Face-to-face panels impose a significant time burden on the reviewers, making some potential reviewers reluctant to participate. For example, panelists with young children may not be able to obtain two continuous days of childcare, or panelists in remote locations or foreign countries may find the amount of travel required prohibitive. It also causes NSF to incur significant travel costs.		
Trend Information	This activity began as a performance goal in FY 2012, when administrative offices and program staff collaborated to develop the first of a planned set of four training modules for organizers of virtual panels at NSF. An internal web-site that provides guidance to NSF staff on when to choose a virtual panel and how best to implement such panels was also developed and numerous outreach activities were conducted to familiarize staff with the resources available to them.		
Strategic Goal Linkage, FY 2011-FY 2016 Strategic Plan	Perform as a Model Organization-3: Encourage and sustain a culture of creativity and innovation across the agency to ensure continuous improvement and achieve high levels of customer service.		
Lead Organization	Chief Technology Officer, Office of the Director		

Development of NSF Performance Goals, FY 2012-FY 2014

In FY 2014, NSF will be operating under the Strategic Plan that is currently under development and is anticipated for release in FY 2014. NSF took this opportunity to reexamine, consolidate, and reorganize its set of performance goals. This approach captures all areas of NSF investment and is designed to be compatible with any strategic framework under consideration for the forthcoming strategic plan.

The following schematic illustrates the evolution of NSF's performance goals between the current framework and the FY 2014 framework featured in this Budget Request.



Key

→ Goal substantially unchanged over time.

- - - → Goal consolidated or evolved from earlier stage.

2012-2013 goals not connected to a 2014 goal are being addressed through changing agency practices or activities and will be described in the FY 2013 Annual Performance Report.

OTHER INFORMATION

Management Reviews
Each quarter, NSF senior leadership reviews progress towards all performance goals of the agency in a data-driven review meeting led by the Chief Operating Officer and Performance Improvement Officer. While focus is on the quarterly performance of the priority goals, all organizational goals are discussed.

Alignment of Human Capital Efforts with Organizational Performance
NSF requires all employees, executives, and the general workforce, to set individual goals aligned with the Foundation's mission and strategic goals in order to drive individual and organizational performance. An FY 2011 audit showed 100 percent of NSF's 76 SES performance plans provide a clear link to organizational goals and 100 percent of the sampled general workforce plans reviewed linked all critical elements to the agency mission or goals. NSF provides training and makes tools and templates available for all supervisors and employees on linking performance plans to agency mission as well as on the policies, processes, requirements, timeframes, and assistance available for preparations of plans and appraisals.

NSF also directly aligns its strategic human capital and accountability efforts to the goals identified in the NSF Strategic Plan. Agency performance goals currently outline specific human capital goals. In FY 2014, NSF will more directly tie human capital objectives to individual mission related performance goals where appropriate. NSF is currently participating in the OPM HRStat pilot and is making use of the HRStat process to increase, identify, and report on indicators of goal achievement. The process is increasing reliance on data and evaluative indicators in the overall decision making process.

Strategies and Collaborations
No one standard strategy is used across NSF for achievement of goals. Goal leaders at NSF choose strategies tailored to their stakeholders' needs and their institutional capabilities. In general, NSF goals involve testing the impacts of new activities or new approaches to existing activities, so feedback mechanisms are built in. Use of analysis, evidence, and evaluation findings is also at the discretion of each individual goal leader, as is the decision to collaborate with other agencies or external entities or to invest in contract support for their activities. Performance at NSF is reviewed quarterly by NSF's Performance Improvement Officer, who reports on goal progress to NSF senior management.

NSF employs a balanced set of performance indicators, milestones, and measures. Due to the nature of NSF investments, the two mission-oriented goals, *Transform the Frontiers* and *Innovate for Society*, tend to be output- or outcome-based. The management-oriented goal, *Perform as a Model Organization*, contains efficiency and customer-service measures, but also output and outcome measures relating to long-term activities such as financial system modernization and strategic human capital management.

Evaluations and Research
Evaluations at NSF are currently performed at the discretion of the individual directorate, office, or program being evaluated. For discussion of how NSF uses planned, current, and recently completed evaluations in its program decisions, refer to individual directorate and office chapters. A list of the evaluations completed in FY 2012 follows. For more details about how the results of these specific evaluations are being used to shape agency decisions, see the chapter of the sponsoring directorate. In FY 2014 NSF will expand and coordinate program evaluation and collection and management of NSF programmatic data; for more information, see the NSF-Wide investments chapter section on NSF's Evaluation Capability.

List External Evaluations Completed in FY 2012

DIR	Program, Topic, or Area Evaluated	Name of Evaluation	Contractor	Link to report
EHR	Research Experiences for Undergraduates	Research Experiences for Undergraduates: Data Mining Study	Beyond the Bottom Line	No link available
	Centers of Research Excellence in Science and Technology	Summative Evaluation of the Centers of Research Excellence in Science and Technology Program	Global Evaluation and Applied Research Solutions, Inc.	No link available
	ADVANCE	Quantitative Evaluation of the ADVANCE Program	Westat	No link available
ENG	Nanotechnology Undergraduate Education	Analysis of Reports of the Nanotechnology Undergraduate Engineering Program	Manhattan Strategy Group	No link available
GEO	Geodesy	A Foundation for Innovation: Grand Challenges in Geodesy	University Navstar Consortium (UNAVCO)	www.unavco.org/pubs_reports/pubs_reports.html
	Earth Sciences	New Research Opportunities in Earth Sciences	National Research Council	www.nap.edu/catalog.php?record_id=13236
	Hydrologic Sciences	Challenges and Opportunities in Hydrologic Sciences	National Research Council	www.nap.edu/catalog.php?record_id=13293
	Paleobiology, Paleoclimate, Stratigraphy	Transitions: The Changing Earth-Life System -- Critical Information for Society from the Deep Past	(workshop)	www.sepm.org/CM_Files/ConfSumRpts/TRANSITIONSfinal.pdf
	Paleobiology, Paleontology	Conservation Paleobiology -- Opportunities for the Earth Sciences	(workshop)	www.conservationpaleobiology.org/files/CP_Workshop_Report_Oct_2012.pdf
	Sedimentary basin geothermal sources	Tracking An Energy Elephant: Science And Engineering Challenges For Unlocking The Geothermal Potential Of Sedimentary Basins	(workshop)	www.sedheat.org/
	Antarctic Science & Logistics	More and Better Science in Antarctica Through Increased Logistical Effectiveness	USAP Blue Ribbon Panel	www.nsf.gov/od/opp/usap_special_review/usap_brp/rpt/antarctica_brochure_final.pdf
MPS	Underground Science	An Assessment of the Science Proposed for the Deep Underground Science and Engineering Laboratory (DUSEL)	National Academies of Science	http://sites.nationalacademies.org/DEPS/physicsandastronomy/index.htm?selectedYear=2011

Advisory Committees and Committees of Visitors

Each directorate and office has an external advisory committee that typically meets twice a year to review and provide advice on program management, discuss current issues, and review and provide advice on the impact of policies, programs, and activities in the disciplines and fields encompassed by the directorate or office. In addition to directorate and office advisory committees, NSF has several committees that provide advice and recommendation on specific topics: astronomy and astrophysics; environmental research and education; equal opportunities in science and engineering; direction, development, and enhancements of innovations; polar programs; advanced cyberinfrastructure; international and integrative activities; the agency's merit review processes; and business and operations.

Committees of Visitors (COVs) are subcommittees of NSF directorate advisory committees. COV reviews provide NSF with external expert judgments in two areas: (1) assessments of the quality and integrity of program operations and program-level technical and managerial matters pertaining to proposal decisions; and (2) comments on how the outputs and outcomes generated by awardees have contributed to the attainment of NSF's mission and strategic outcome goals. COV reviews are conducted at regular intervals of approximately three years for programs and offices that recommend or award grants, cooperative agreements, and/or contracts and whose main focus is the conduct or support of NSF research and education in science and engineering. Approximately one-third of NSF's divisions are assessed each year.

A COV typically consists of up to 20 external experts, selected to ensure independence, programmatic coverage, and geographic balance. COV members come from academia, industry, government, and the public sector. They meet for two or three days to review and assess program priorities, program management, and award accomplishments or outcomes. Each COV prepares a report and the division or program that is being reviewed must prepare a response to the COV recommendations. These reports and responses are submitted to the parent advisory committee and to the Director of NSF. All reports and responses are public and posted on NSF's website at: www.nsf.gov/od/oia/activities/cov/covs.jsp.

In FY 2012, seven directorates and offices convened 18 Committees of Visitors (COVs). A list of the COVs performed is provided below. The chapters of the directorates and offices also contain information on these COVs.

List of FY 2012 Committees of Visitors Meetings

Directorate	Division	Program or Cluster
BIO	Environmental Biology	
EHR	Research on Learning in Formal and Informal Settings	• Discovery Research K-12 • Research & Evaluation on Education in Science & Engineering (REESE) • Research on Gender in Science & Engineering • Research in Disabilities Education
	Undergraduate Education	• Advanced Technological Education • NOYCE Scholarships
	Graduate Education	Graduate Research Fellowships

Directorate	Division	Program or Cluster
ENG	Chemical, Bioengineering, Environmental and Transport Systems	
	Civil, Mechanical and Manufacturing Innovations	
GEO	Atmospheric & Geospace Sciences	Lower Atmospheric Facilities Oversight Section
	Earth Sciences	Deep Earth Processes Section
	Ocean Sciences	• Integrative Programs Section • Marine Geosciences Section • Ocean Section
MPS	Physics	
SBE	Office of Multidisciplinary Activities	
OIIA	Experimental Program to Stimulate Competitive Research (EPSCoR)	

Data Verification and Validation

It is NSF's practice to follow Government Accountability Office (GAO) guidance and engage external contractors to conduct an independent validation and verification (V&V) review of its annual performance information, data, and processes. The guidance from GAO indicates that agencies should "…describe the means the agency will use to verify its performance data…" and "…provide confidence that [their] performance information will be credible." [1] NSF will continue this process in FY 2013 and FY 2014.

In FY 2012, IBM Global Business Services (IBM) assessed the validity of NSF data and verified the reliability of the methods used to collect, process, maintain, and report that data, and reviewed NSF's information systems based on GAO standards for application controls. IBM's FY 2012 report concluded:

> *Overall, IBM verifies that NSF relies on sound business practices, internal controls, and manual checks of system queries to ensure accurate performance reporting. NSF maintains adequate documentation of its processes and data to allow for an effective V&V review. Based on the V&V assessment, IBM has confidence in the systems, policies, and procedures used by NSF to calculate results for its performance measures that contained targets. NSF continues to take concerted steps to improve the quality of their systems and data. IBM confirms NSF's commitment to ensuring the accuracy of its reported GPRA results, and the reliability of its processes for collecting, processing, maintaining, and reporting data for its performance goals*[2].

Data Sources, Limitations, and Intended Use

The data and information required to measure progress towards NSF's performance goals in FY 2011 and later years fall into three broad categories.

- NSF automated administrative systems. Performance monitoring can be a valuable secondary function of such systems. In FY 2011, reporting included data from systems that:
  - store and approve publications such as solicitations announcements, and Dear Colleague Letters;

[1] GAO, The Results Act: An Evaluator's Guide to Assessing Agency Annual Performance Plans, GAO/GGD-10.1.20 (Washington, D.C.: April 1998), pp. 40-41.

[2] IBM Global Business Services, *National Science Foundation Performance Measurement Verification and Validation Report, Fiscal Year 2012*. October 25, 2012.

  - collect transactional data about proposal and award management;
  - perform financial transactions;
  - store human resources data; and
  - permit keyword search of abstract or full texts of proposals and awards.
  - The data were used either directly or for achieving milestones that involve the writing of a report. While not all goals require a high level of accuracy, data from these systems are highly reliable.
- Reports on internal activities. Milestone achievement is often determined from review of records of certain activities and events. Records of this sort tend to be compiled from review of the evidence provided by goal leaders.
- Data requests of external parties. Qualitative or quantitative information is solicited directly from awardees.

Management Challenges
A discussion of agency management challenges can be found in the FY 2012 Agency Financial Report, www.nsf.gov/pubs/2013/nsf13002.

Burden Reduction/Unnecessary Plans and Reports to Congress
The GPRA Modernization Act 2010 requires that agencies identify which of the plans and reports they provide to Congress are outdated or duplicative of other required plans and reports. The complete list of reports that NSF suggested for consolidation or elimination can be found on performance.gov.

Lower-Priority Program Activities
The 2014 Cuts, Consolidations, and Savings (CCS) Volume of the President's Budget identifies the lower-priority program activities under the GPRA Modernization Act (31 U.S.C. 1115(b)(10)). The public can access the CCS volume at: www.whitehouse.gov/omb/budget.

Use of Non-Federal Parties
No non-federal parties were involved in preparation of this Annual Performance Report.

Classified Appendices Not Available to the Public
None