FY 2014 ANNUAL PERFORMANCE REPORT

Each fiscal year the National Science Foundation is required to prepare three reports to provide financial management and program performance information. This report, the Annual Performance Report (APR), includes the results of NSF's FY 2014 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 2014, NSF published a new Strategic Plan, *Investing in Science, Engineering, and Education for the Nation's Future: NSF Strategic Plan for 2014 – 2018*, and performed its first Strategic Reviews of the objectives in that Plan. In FY 2014, NSF also tracked progress toward its three strategic goals, using ten performance goals and three priority goals. Out of the ten goals with targets in FY 2014, nine were fully or partially achieved and one was not achieved. Below is a tabular overview.

Goal ID	Strategic Alignment			Goal Short Name	FY 2014 Result
	G1	G2	G3		
1	O3	O1	O2	Priority Goal: Public Access	Progress made. No FY 2014 targets.
2	O3	O1		Priority Goal: Data Science	
3			O2	Priority Goal: Level Workload	
4	All	All		Key Program Investments[1,2]	Partially Achieved
5	O2	O2		Improve Undergraduate Education	Achieved
6	O2			Enhance National GRFs[1]	Achieved
7	O2			Career-Life Balance	Achieved
8	O3			Research Infrastructure Investments	Achieved
9		O1		Diversity and Inclusion	Not Achieved
10		All		Evidence-Based Reviews[1,2]	Achieved
11		O2		Financial System Modernization	Achieved
12		O2		Customer Service: Time To Decision	Achieved
13		O2		Virtual Merit Review Panels	Achieved

This section presents results for each performance goal in its strategic context, with reference to strategic goals, objectives, and targets from NSF's 2014-2018 Strategic Plan. Multiple years of trend data are available for NSF's longest-standing quantitative performance measures, time to decision (Goal 12) and the monitoring of construction projects (Goal 8). Other performance goals monitor progress towards multiyear goals, such as implementation of a new process or program (Goals 7 and 13) or an operational improvement (Goals 9 and 11). Goals 1 through 6 are new in 2014 and have less or no historical data associated with them.

A statement by the NSF Director verifying the reliability and completeness of the performance data in this report can be found in the FY 2014 Performance and Financial Highlights report at www.nsf.gov/about/history/annual-reports.jsp.

---

[1] Independent verification and validation (V&V) identified data limitations for this goal in FY 2014. For more information, see V&V section under "Other Information" in this chapter.
[2] Goal continues in FY 2015 and will be re-V&V'd.

Goal 1, Priority Goal: Ensure Public Access to Publications
Lead Organization: Office of the Director.

Strategic Alignment:
- G1/O3, Provide world-class research infrastructure to enable major scientific advances.
- G2/O1, Strengthen the links between fundamental research and societal needs through investments and partnerships.
- G3/O2, Use effective methods and innovative solutions to achieve excellence in accomplishing the agency's mission.

Fiscal Year	Goal Statement	Target Measure, Milestone, or Deliverable	Result
2014-2015 (new goal)	Ensure Public Access to Publications	By September 30[th,] 2015, NSF-funded investigators will be able to deposit versions of their peer-reviewed articles in a repository to make them available to the public within one year of publication.	Progress made towards achievement in FY 2015.

Discussion
Activities and achievements for this goal in FY 2014 fall into several categories. For more information, see the goal page on performance.gov, www.performance.gov/content/ensure-public-access-publications.

Development of manuscript submission system. NSF is ahead of schedule on this milestone to finalize an Interagency Agreement by the end of March 2015. In June 2014, NSF entered into a Memorandum of Agreement for external repository services and finalized an Interagency Agreement with the Department of Energy, Office of Scientific and Technical Information (DOE/OSTI) to support system development.

Changes to internal systems. NSF has made satisfactory progress in identifying proposed changes to internal systems to accommodate system integration. The detailed requirements gathering exercise, completed in FY 2014, together with the technical work, will enable NSF to remain on track for a system release in the fall of 2015. NSF completed testing for three critical elements of the internal/external system integration in FY 2014. Additional proof of concept testing, preliminary interface design, and a second round of usability requirements gathering and feedback are underway.

Outreach. NSF has made satisfactory progress in undertaking outreach and discussions with different stakeholder groups, other federal agencies, and possible public/private partners. With NSF support, the National Research Council stood up a Forum on Open Science in October 2014 and held two meetings in the summer of 2014, with two more anticipated in FY 2015. The posting of an approved public access plan to the NSF website is anticipated in early 2015.

Goal 2, Priority Goal: Increase Data Scientists and Data Infrastructure
Lead Organizations: Directorate for Computer and Information Sciences and Engineering, Directorate for Education and Human Resources.

Strategic Alignment:
- G1/O3, Provide world-class research infrastructure to enable major scientific advances.
- G2/O1, Strengthen the links between fundamental research and societal needs through investments and partnerships.

Fiscal Year	Goal Statement	Target Measure, Milestone, or Deliverable	Result
2014-2015 (new goal)	Increase Data Scientists and Data Infrastructure	By September 30th, 2015, implement mechanisms to support the training and workforce development of future data scientists; increase the number of multi-stakeholder partnerships to address the Nation's big-data challenges; and increase investments in current and future data infrastructure extending data –intensive science into more research communities.	Progress made towards achievement in FY 2015.

Discussion
Activities and achievements for this goal in FY 2014 fall into several categories. For more information, see the goal page on performance.gov, www.performance.gov/content/increase-nation%E2%80%99s-data-science-capacity.

Human Capital Development
- Funded and held a workshop on April 11-12, 2014 at the National Academy of Sciences on "Training Students to Extract Value from Big Data."
- Established a baseline for the number of undergraduate, certificate, and graduate programs in Big Data/data science/data analytics.
- Completed inventory of NSF programs that could appropriately include an emphasis on the preparation of data scientists, and included such emphasis in two reissued solicitations in FY 2014.
- Posted solicitation for the new National Science Foundation Research Traineeship (NRT) Program, with a priority theme to address fundamental challenges advancing computation- and data-enabled science and engineering.

Partnerships. NSF funded and held a workshop on November 12, 2013 with the White House Office of Science and Technology Policy on "Data to Knowledge to Action." Thirty multi-stakeholder partnerships with over 90 partners were announced. In September 2014, NSF released a Request For Information in the Federal Register (www.gpo.gov/fdsys/pkg/FR-2014-09-03/html/2014-20806.htm) to explore the establishment of a national network of Big Data Regional Innovation Hubs, which would scale up the kinds of activities and partnerships established at the Data to Knowledge to Action event.

Infrastructure. NSF issued solicitations and conducted competitions for the Data Infrastructure Building Blocks (DIBBS) and the Critical Techniques and Technologies for Advancing Big Data Science & Engineering (BIGDATA) programs. Funding decisions are anticipated in late FY 2015.

**Goal 3, Priority Goal: Optimize the Award Process to Level Workload**
Lead Organization: Office of Budget, Finance, and Award Management.

Strategic Alignment:
- G3/O2, Use effective methods and innovative solutions to achieve excellence in accomplishing the agency's mission.

Fiscal Year	Goal Statement	Target Measure, Milestone, or Deliverable	Result
2014-2015 (new goal)	Optimize the Award Process to Level Workload	By September 30, 2015, meet targets to level distribution of awards across the fiscal year and subsequently improve awardee capacity to effectively manage research funding.	Progress made towards achievement in FY 2015.
Actual Results for Preceding Fiscal Years			

Funding Recommendations by Quarter, FY 2010-FY 2014
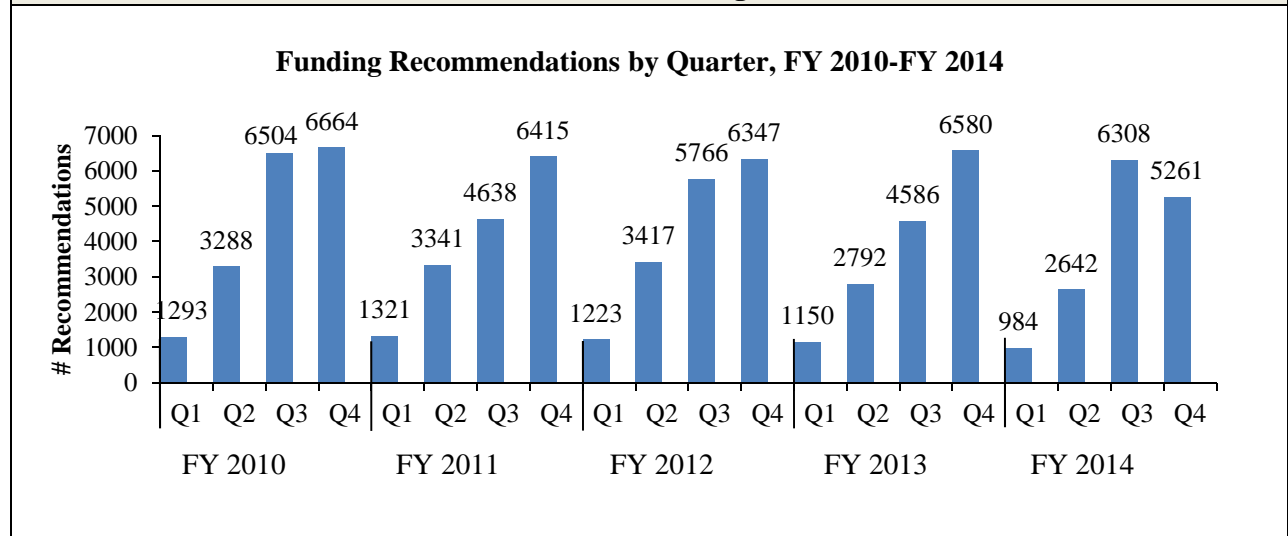
Discussion
For more information on this goal, see the goal page on performance.gov, www.performance.gov/content/optimize-award-process-level-workload.

FY 2014 activities towards this goal were focused on establishing implementation teams for each directorate and on piloting approaches that may provide novel and/or innovative solutions to leveling proposal and award workload across the fiscal year. While the targets for this goal are for FY 2015, the FY 2014 data (above, with trend information for context) show that NSF began to see a shift in its annual workload of awards recommended for funding into the third quarter in FY 2014. This was due to two major factors unique to FY 2014:
- The lapse in funding authority in Q1, which halted receipt and delayed review of proposals NSF-wide. The hiatus is believed to be the primary reason for the shift of the annual workload out of the first and second quarter.
- Preparations for transition to a new financial system in Q4, which went live in early FY 2015. The changes to close-out processes required by the financial system transition resulted in movement of more than five percent of recommended awards out of the fourth quarter.

Goal 4. Key Program Investments
Lead Organization: Performance Improvement Office, Office of Budget, Finance, and Award Management.

Strategic Alignment:
- Strategic Goal 1, Transform the Frontiers of Science and Engineering
- Strategic Goal 2, Stimulate Innovation and Address Societal Needs through Research and Education

Fiscal Year	Goal Statement	Target Measure, Milestone, or Deliverable	Result
2014 (new goal)	Meet critical targets for key FY 2014 program investments.	Monitor the progress of the following investments using a common set of milestones and indicators: • CEMMSS • CIF21 • I-Corps™ • INSPIRE • SaTC • SEES	Partially achieved. Four of six programs monitored.

Discussion
NSF instituted the Key Program Investments goal for FY 2014 to track the interim progress of major investments towards their long-term goals. Each year, NSF highlights a number of cross-agency investments in its Budget Request to Congress. Although the overall impact of these investments might not be measurable for many years, tracking near-term indicators of progress can help the agency make formative changes or course corrections.

In FY 2014, NSF successfully monitored the progress of four NSF-wide investments (CEMMSS, CIF21, SaTC, and SEES) using a common set of indicators and reviewed the results with senior leaders. The indicators that NSF chose to measure were programmatic inputs and outputs that can provide valuable signals to managers and leaders about a program's health, such as whether the program is being administered as planned or whether the program is generating enough interest from the community. NSF's process to implement strategic monitoring included working with representatives from the above programs to choose metrics that are compatible with varying organizational and governance structures and with varying subject matter areas. The following metrics were used in FY 2014:
- Input indicator: the investment's funding level.
- Output indicators: solicitations issued, numbers of proposals received, numbers of awards made, funding rate.

These measures enable managers and leaders to quickly gauge the status of a program's implementation, in particular, whether proposals have been received from the scientific community and whether the review process has resulted in awards. The funding rate provides important information about the investment level relative to the number of worthy proposals received. Tracking these measures over time allows managers and leaders to assess whether mid-course corrections are needed to improve program management and/or the overall direction of the investment.

In FY 2015, additional indicators will be monitored each quarter. NSF anticipates that the expanded monitoring will include tracking of short-term outcomes (such as workshops on specific topics) and refinement of input and output measures and milestones (such as funding level by directorate and timely

issuance of solicitations). This expanded monitoring will help ensure that key program investments remain on track for achievement of their goals.

Information on Partial Achievement
At the beginning of FY 2014 reprioritization of FY 2014's investments led to discontinuation of monitoring of INSPIRE and I-Corps™ within this goal.

Goal 5, Improve Undergraduate Education
Lead Organization: Directorate for Education and Human Resources.

Strategic Alignment:
- G1/O2, Integrate education and research to support development of a diverse STEM workforce with cutting-edge capabilities.
- G2/O2, Build the capacity of the Nation to address societal challenges using a suite of formal, informal, and broadly available STEM educational mechanisms.

Fiscal Year	Goal Statement	Target Measure, Milestone, or Deliverable	Result
2014 (new goal)	Establish an NSF-wide undergraduate STEM education program that is evidence-based and evidence-building.	1. By 10/30/2013, 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. 2. By 12/31/2013, issue a solicitation for the Catalyzing Undergraduate STEM Education (CAUSE)[4] program. 3. By 9/30/2014, conduct a portfolio analysis of CAUSE[4]-funded projects to summarize the evidence base upon which they rest and the plans they have for building evidence.	All targets achieved.

Discussion
In FY 2014, NSF developed and implemented a framework for a coherent, agency-wide investment approach to achieving the goals for increasing the numbers, broadening the diversity, and improving the preparation of STEM professionals through undergraduate education. The framework focuses investments in three areas: 1) learning and learning environments, 2) workforce development, and 3) broadening participation and building capacity, aligned with the recommendations of the Education and Human Resources Directorate Advisory Committee.[3]

The framework and resulting investment strategies were developed through a three-part process, with progress measured against three targets. In the first phase, NSF gained a better understanding of emphasis areas where its investments were utilized in FYs 2012 and 2013 and how that will change going forward. This was accomplished through an analysis of current investments, accompanied by NSF-wide open meetings to engage the collective expertise of the agency. This analysis informed an agency-wide, principle-based framework for investing in STEM education. The second phase was the release of the NSF Improving Undergraduate STEM Education[4] (IUSE) program description,[5] which received 1,097 proposals in FY 2014. The third phase was an analysis of undergraduate STEM education investments in FY 2014, examining the balance of investments in basic research, applied research, and education and training, with additional discussions across NSF focused on maximizing impact in improving STEM undergraduate education outcomes. This work informed the development of a set of FY 2015 IUSE solicitations focused on improving evidence-based, undergraduate STEM teaching and learning environments for all students, including departmental and institutional transformation.

---

[3] www.nsf.gov/ehr/Pubs/AC_ReEnvisioning_Report_Sept_2014.pdf
[4] Improving Undergraduate STEM Education (IUSE) was released in lieu of the CAUSE program proposed in the FY 2014 Budget Request, following Congressional action on the NSF budget.
[5] www.nsf.gov/funding/pgm_summ.jsp?pims_id=504976&org=DUE

Goal 6, Enhance National GRFs
Lead Organization: Directorate for Education and Human Resources.

Strategic Alignment:
- G1/O2, Integrate education and research to support development of a diverse STEM workforce with cutting-edge capabilities.

Fiscal Year	Goal Statement	Target Measure, Milestone, or Deliverable	Result
2014 (new goal)	Enhance the Graduate Research Fellowship program to provide a wider range of career development opportunities.	The GRF Program will be enhanced to be a National Graduate Research Fellowship (NGRF) Program,[6] a single program for applicants that will provide a wider range of career development opportunities.	Achieved.

Discussion
The GRF program has been considering ways to expand the career development opportunities for its fellows for several years. Two such expansions took place in FY 2014.

- In FY 2014, NSF expanded the Graduate Research Opportunities Worldwide (GROW) program established in 2012 to include career development opportunities. In fall 2012, in conjunction with the 60th anniversary of the fellowship program, GRF announced the launch of the GROW program. GROW provides opportunities for GRF recipients to conduct research-based internships in laboratories and universities in foreign countries. NSF entered into several memoranda of agreement with foreign nations to launch this opportunity. In 2013, NSF received 61 applications and made 53 awards to fellows who conducted research in seven different countries. In FY 2014, GROW partnered with USAID to provide research opportunities in seven developing countries (Brazil and India were in both aspects of GROW). In total, GROW received 176 applications and made 128 awards to fellows who pursued collaborations in 18 countries.
- Also created in FY 2014 was the Graduate Research Internship Program (GRIP), a collaborative opportunity between the GRF program and other federal agencies to permit GRF fellows to participate in internships in federally funded laboratories and agency research sites. By the end of FY 2014, four federal agencies—the Office of Naval Research, the Smithsonian Institution, the Department of Homeland Security, and the Environmental Protection Agency—had signed memoranda of understanding/agreement with NSF to launch this program. The first round of applications to this program will be received in FY 2015.

---

[6] NSF proposed a National Graduate Research Fellowship Program (NGRF) in the FY 2014 Budget Request. Following Congressional action on the NSF budget, NSF did not establish the NGRF program. NSF instead sought to develop initiatives that were in keeping with the intent of the goal as captured in the goal statement. NSF considers this goal achieved since the GRF program's career development opportunities were measurably enhanced; however, the independent verification and validation (see Other Information in this chapter) considered the goal not achieved due to lack of establishment of the NGRF program.

Goal 7, Career-Life Balance (CLB)
Lead Organization: Office of Integrative Activities.

Strategic Alignment:
- G1/O2, Integrate education and research to support development of a diverse STEM workforce with cutting-edge capabilities.

Fiscal Year	Goal Statement	Target Measure, Milestone, or Deliverable	Result
2014	Promote policies and practices that support more fully utilizing the talents of individuals in all sectors of the American population, principally women, under-represented minorities, and persons with disabilities.	By 9/30/2014: 1. Conduct a preliminary analysis of the first three years of the CLB initiative that can be used formatively. 2. 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). 3. Collaborate with another federal agency to promote career-life balance by developing new ways of partnering with higher education.	All targets achieved. 1. Achieved. Preliminary analysis completed in fourth quarter of FY 2014. 2. Achieved. Outreach conducted, see below for details. 3. Achieved. NIH collaboration underway.
Actual Results for Preceding Fiscal Years		
2013	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, under-represented minorities and persons with disabilities.	By September 30, 2013, 1. Establish the FY 2013 baseline for number and value of awards provided to ADVANCE institutions intended to fund dual career supports. 2. Increase the number and value of research technician award support provided to CAREER awardees and postdoctoral fellows by 10 percent over FY 2012.	One target achieved. 1. Achieved. Baseline established: 18 ADVANCE supplements awarded (total $3.25 million). 2. Not achieved. Number increased under 10 percent (23 to 25), and value of awards decreased ($498,442).
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, under-represented 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.[7] 23 supplements were awarded to CAREER awardees, totaling $537,501 for FY 2012.

---

[7] In FY 2012 NSF reported "20 supplements were awarded to CAREER awardees, totaling $420,355 for FY 2012." In FY 2013, this baseline was adjusted upward when additional awards were found to fit CLB criteria.

Discussion

NSF's Career-Life Balance (CLB) Initiative is designed to develop and promote a coherent set of career-life policies and program opportunities that aim to reduce the rate of departure of early career scientists and engineers from academic careers. In FY 2012, the initiative provided supplemental awards to awardees in the NSF's Faculty Early Career Development program for additional personnel (e.g., research technicians or equivalent) to sustain research when the awardee is on family leave. In FY 2013, the CLB initiative expanded technician support to awardees of the NSF Graduate Research Fellowship program and to postdoctoral fellows supported on any NSF grant and also introduced dual career support through the ADVANCE program.

In FY 2014, the initiative continued funding supplemental grants for technician support while on family leave, developed web-based modules for internal CLB training, disseminated information on the initiative internally and externally, supported international gender summits that included the exchange of ideas and lessons learned about CLB policies and practices, and awarded five grants to higher education institutions to conduct dissemination and outreach activities concerning career-life balance activities and for development and dissemination of best practices, such as extending the tenure clock and dual career opportunities.

In FY 2014, NSF also began collaborating with NIH to harmonize language for family-friendly policies and to have a common set of frequently asked questions and answers for academic institutions. The language is under review and will be published in FY 2015.

A preliminary analysis of the first three years of the CLB initiative was completed in September 2014 by the contractor Policy Insights. In FY 2015, further evaluation to guide future policy will be conducted through document review, focus groups, and in-depth grantee interviews.

Goal 8, Research Infrastructure Investments
Lead Organization: Large Facilities Office, Office of Budget, Finance, and Award Management.

Strategic Alignment:
- G1/O3, Provide world-class research infrastructure to enable major scientific advances.

Fiscal Year	Goal Statement	Target Measure, Milestone, or Deliverable	Result
2014	Ensure program integrity and responsible stewardship of major research facilities and infrastructure.	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.	Achieved. Five of five projects within variances.
Actual Results for Preceding Fiscal Years			

Construction Project Monitoring Performance Trends, FY 2009-FY 2014

Target: 100%
Result: 100%
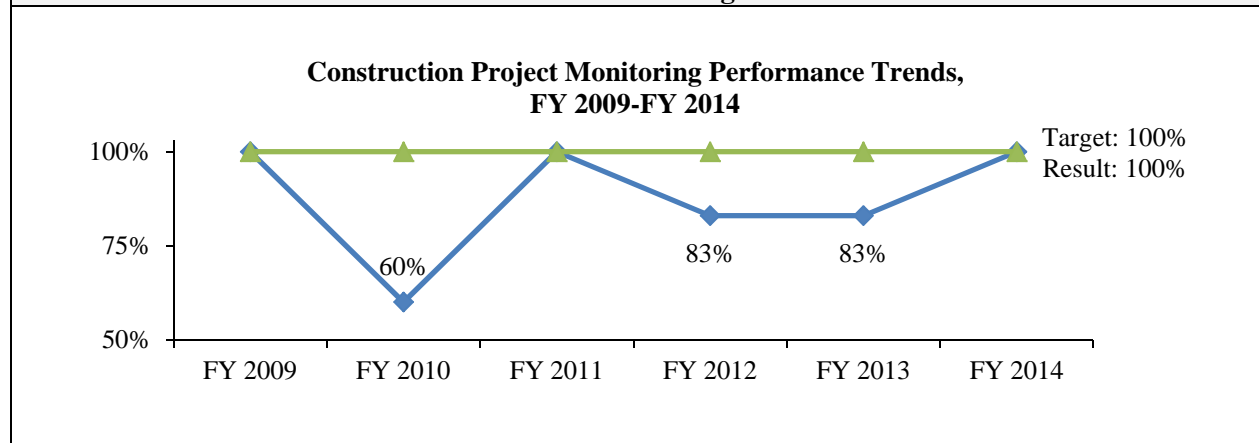
Discussion
The Major Research Equipment and Facilities Construction (MREFC) account supports the acquisition, construction, and commissioning of major research facilities and equipment that provide unique capabilities at the frontiers of science and engineering. Performance of construction projects funded 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.

For more information about the five projects funded from the MREFC account in FY 2014, see the Major Research Equipment and Facilities Construction chapter of this Request.

Goal 9, Diversity and Inclusion
Lead Organization: Office of Diversity and Inclusion, Office of the Director.

Strategic Alignment:
- G3/O1, Build an increasingly diverse, engaged, and high-performing workforce by fostering excellence in recruitment, training, leadership, and management of human capital.

Fiscal Year	Goal Statement	Target Measure, Milestone, or Deliverable	Result
2014	Foster an environment of diversity and inclusion while ensuring compliance with the agency's civil rights programs.	1. Attain six of six essential elements of a model EEO agency. 2. Assist in implementation of one ODI action within NSF's D&I Strategic Plan. 3. Perform two compliance desk reviews under the applicable anti-discrimination laws.	1. Not achieved. Four of six essential elements met. 2. Achieved. 3. Not achieved. Reviews not completed in FY 2014.
Actual Results for Preceding Fiscal Years			
2013	Perform activities necessary to attain essential elements of a model EEO agency, as defined by the Equal Employment Opportunity Commission (EEOC).	Attain five of six essential elements.	Achieved. Five elements attained.
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.
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 attain 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 (see table below). In FY 2014, NSF complied with four of the six essential elements towards attaining a model EEO Agency Program: elements B, C, D, and F.

In 2014, NSF expanded this goal in two ways. First, NSF set a target to attain all of the elements of a model EEO agency—a status no agency has attained. Second, NSF added a target to conduct two desk reviews under Title IX of the Education Amendments of 1972 (hereinafter Title IX), which prohibits

discrimination based on gender in any educational program or activity receiving federal financial assistance.

Explanation of Unmet Goal

Two of the three targets for this goal were not achieved. The first was to attain six of the essential elements of an EEO agency. In FY 2014, two of the six elements were not met: Elements A (demonstrated commitment from agency leadership) and E (efficiency). For more information, see the table of essential elements below.

The target of performing two compliance reviews under the applicable anti-discrimination laws was also unmet in FY 2014. Federal anti-discrimination laws prohibit discrimination in any programs and activities that receive federal funds. Agencies that provide such funding are required to conduct periodic reviews to ensure recipients are in compliance. NSF has not been in compliance with this requirement since 2006 when it conducted one compliance review. This compliance review was conducted after a 2004 report by the Government Accountability Office, which evaluated the participation of women in the sciences and the efforts of four science agencies (Department of Education, Department of Energy, National Aeronautics and Space Administration, and NSF). Since 2009, a number of steps have been taken to bring the agency into compliance, including:

- Drafting a compliance plan, participating with the Title IX Interagency Working Group, and laying the framework for a pro-active and collaborative approach to compliance in which the objectives were to (1) focus on best practices, (2) serve as a resource, and (3) assist recipients in coming into compliance;
- Establishing a Title IX website and publishing the brochure "Nondiscrimination on the Basis of Sex in Federally Funded Programs (Title IX of the Education Amendments of 1972)"; and
- Serving as a Subject Matter Expert for the Large Facilities Business Systems Reviews, which include a component on compliance with anti-discrimination laws and regulations, including Title IX.

In FY 2013, ODI sought funding to establish NSF's compliance program. In FY 2014, ODI received approval for funding to conduct reviews; however, it was not received in time to conduct the two reviews in FY 2014. Also in FY 2014, the position description of ODI's Complaints Manager was revised to reflect the compliance review duties, and NSF and the Department of Energy began laying the foundation to conduct two joint on-site reviews in FY 2015.

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 achieved all but two measures under essential element A. The two measures unmet involved ensuring EEO policy statements were current, communicated to all employees, and vigorously enforced by agency management. The revised EEO, and newly devised diversity policy, are under review.
B: Integration of EEO into the 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	NSF has continued to fully achieve and comply with all of essential 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

Essential Element	NSF Activities
supports the agency's strategic mission.	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 achieved 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 of responsibility. NSF achieved 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 the implementation of schedules to review Merit Promotion Program Policy, Employee Recognition Awards Program, and Employee Development/Training Programs. In meeting these measures, NSF sought guidance from the EEOC during a Federal Sector Complement Review in April 2014.
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 met all but three measures under 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 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. Areas of improvement include ensuring counseling is complete in a timely manner, investigations are conducted within the applicable timeframes and that the management officials involved in a dispute have actual settlement authority.
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.

Goal 10, Evidence-Based Reviews
Lead Organization: Office of Information and Resource Management

Strategic Alignment:
- G3, Excel as a Federal Science Agency

Fiscal Year	Goal Statement	Target Measure, Milestone, or Deliverable	Result
2014 (new goal)	Use evidence-based reviews to guide management investments.	HRStat measures: 1. 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. 2. 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. PortfolioStat measures: 3. NSF's IT governance boards will evaluate and prioritize proposed investments for FY 2016. 4. NSF will move toward a standardized computing environment, reducing purchase costs by $300,000 below FY 2012 levels by FY 2014. 5. Migration to cloud email provider will reduce costs by approximately $240,000 below FY 2012 levels by FY 2014.	1. Achieved. Dashboard released in FY 2014. 2. Achieved. Review process established. 3. Achieved. Governance boards prioritized IT portfolio. 4. Achieved.[8] Costs reduced by at least $376,725. 5. Achieved.[8] Costs reduced by $260,000.

Discussion
HRStat and PortfolioStat are processes in which agency leaders conduct regular data-driven reviews of human resources or IT portfolio information.

HR Stat: Targets 1 and 2
In FY 2014, NSF developed a first-generation human capital management dashboard for senior management use. The dashboard includes Federal Employee Viewpoint Survey measures and internal HR data and provides information on four human capital focus areas. These areas are subject to change as topics are identified or deemphasized by leadership. The FY 2014 focus areas are:
- *Monitor NSF Retention.* NSF is concerned about an impending acceleration of retirements due to the forthcoming NSF relocation, especially among the Senior Executive Service (SES) cadre. NSF understands the knowledge management challenges and those associated with the time required to fill executive positions. The dashboard provides historical loss rates data and losses by directorate, and allows dashboard users to drill into divisions to see what types of employees are leaving and in what numbers.

---

[8] These results were not available in time for the FY 2014 verification and validation process. They will be V&V'd in FY 2015 and any corrections published in the FY 2015 APR.

- *Create Viable Career Paths.* NSF is looking for opportunities to create more viable career paths for both scientific and non-scientific positions, for which, historically, NSF has not had clearly defined career paths. In addition, NSF has not made significant use of science positions outside of AD-4 Program Officers. However, given changes to NSF work, there may be new opportunities to create positions other than Program Officers within scientific disciplines and more clearly define possible career progressions for non-scientific staff. The dashboard provides data regarding employee attitudes about career progression opportunities at NSF as well as data about the number and types of hires it makes each year.
- *Enhance Recruitment Efforts.* NSF's high retirement eligibility, particularly among those in senior positions, along with the lengthy hiring process compel the agency to look at the number and types of positions being hired as well as the processes for hiring. The dashboard provides data about the number of executive hires each year and the amount of time it takes to recruit/select/onboard employees into those executive positions.
- *Level Workload.* Workload at NSF has been an ongoing issue and most directorates/offices have projected an increase in workload between now and FY 2016. Workload challenges have resulted from flat FTE allocations, increased oversight and regulatory requirements, and increases in the amount of crosscutting (i.e., cross-discipline) work in the program directorates involving initiatives with other directorates, often necessitating broader skills. The dashboard provides data about workload, including employee perceptions of workload.

NSF's HR data review process is built into the GPRA quarterly review process and incorporates OPM requirements to the extent possible at each review.

Portfolio Stat: Target 3
In order to strengthen its IT investment evaluation process and ensure NSF's IT investments best support the Foundation's business needs, NSF implemented a more formal and disciplined IT investment review and decision-making process. Specifically, NSF strengthened its process for approving centrally-funded IT investments by requiring advocates for new IT investments to complete detailed justification and business case documentation. This ensures that advocates for new IT investments have fully considered the business need, benefits, impacts, and strategic alignment of each potential investment. This also helps the CIO and governance boards verify that IT, rather than policy changes or business process reengineering, is the appropriate solution to a business need, and it provides NSF's CIO and governance boards the information needed to review, approve, and prioritize investment proposals using a comprehensive evaluation methodology. This process was successfully used to prepare the FY 2016 IT budget request and prioritize an $80+ million investment portfolio.

Portfolio Stat: Targets 4 and 5
NSF has undertaken several initiatives to reduce the costs of the computing environment.
- *Desktop and Laptop Procurement.* NSF awarded a Blanket Purchase Agreement (BPA) with a companion catalog ordering tool to support the purchase of desktops and laptops for use by all organizations. This allows NSF to leverage ordering activities' buying power by taking advantage of quantity discounts, saves administrative time, and reduces paperwork. These tools provide a means to easily order all desktops and laptops via a standard set of requirements using one procurement vehicle. This initiative will help NSF to reduce the number of desktop configurations to be supported and reduce outyear support costs. Savings in this area have not been calculated for FY 2014 since purchasing is accomplished within each organization. NSF expects to realize benefits in the outyears; as the number of desktop configurations decrease, labor to support the desktop configurations will decrease.
- *Mobile Device Management.* NSF awarded a Telecommunications Expense Management (TEMS) contract in 2012 with the goal of improving management of mobile devices and their associated plans

resulting in reduced wireless costs. In 2013, a pilot was launched with approximately 50 percent of NSF lines participating. The TEMS provider identified that NSF had been overbuying minutes and data plans, was maintaining a substantial number of zero-use devices, and received inaccurate carrier invoices and other items that contributed to mobile device costs. An estimated savings of $167,000 has been identified via optimization and validation exercises across the Foundation (mobile devices are funded within each of the directorates).

- *Laptop Rentals*. NSF has reduced cost of laptop rentals in support of panels by migrating to a virtual laptop model which requires a less costly laptop to support. In FY 2012 NSF spent $717,042 and in FY 2014 NSF spent $507,317 for a reduction of $209,725.
- *Cloud Email*. One of NSF's Portfolio Stat initiatives was to migrate existing local based email services to a cloud based solution. The project was initiated in 2012 and successfully implemented in 2013. After an initial successful pilot program all email was converted to the cloud based solution. As a part of the migration NSF was able to realize a cost savings as a result of no longer needing to support the local hardware infrastructure and its associated maintenance and support costs. As an additional longer term benefit, upgrades to future versions of our email platform will require much less cost and will be implemented seamlessly across the Foundation. As reported to OMB via the Integrated Data Collection (IDC), in 2012 the annual cost of email was $700,000 and in 2014 the cost was $440,000, resulting in a savings of $260,000.

Goal 11, Financial System Modernization
Lead Organization: Office of Budget, Finance, and Award Management.

Strategic Alignment:
- G3/O2, Use effective methods and innovative solutions to achieve excellence in accomplishing the agency's mission.

Fiscal Year	Goal Statement	Target Measure, Milestone, or Deliverable	Result
2014	Upgrade NSF's financial system.	Manage cost and schedule variance of the iTRAK system integrator within +/- 10 percent of the baseline.	Achieved. Cost and schedule variances for FY 2014 were zero.
Actual Results for Preceding Fiscal Years			
2013	Upgrade NSF's financial system.	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.	Achieved. All grantees were transferred to ACM$ by June 30, 2013.
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.

Discussion
Financial system modernization efforts have been underway at NSF for several years and culminated with the deployment of iTRAK in October 2014. iTRAK is a fully integrated, commercial-off-the-shelf (COTS) financial management shared services solution. One of NSF's FY 2014 goals was to manage the cost and schedule variance of the iTRAK system integrator (SI) within +/- 10 percent of the performance measurement baseline.

Each month, the SI submitted a project performance report to NSF showing the cost and schedule variance of the iTRAK implementation project. Throughout 2014, the variances were consistently well below 10 percent, which indicated that the project was within an acceptable level of being on schedule and on budget. At the end of the year, there was no cost or schedule variance. The SI deployed iTRAK without a cost or schedule overrun.
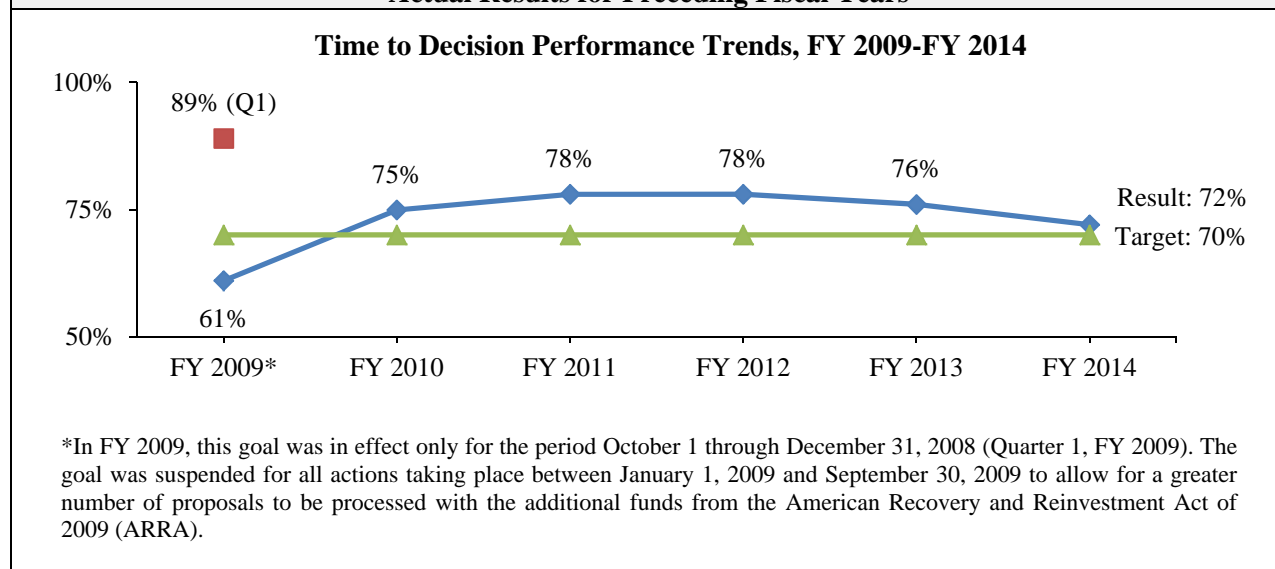
Goal 12, Customer Service: Time To Decision
Lead Organization: Office of Integrative Activities.

Strategic Alignment:
- G3/O2, Use effective methods and innovative solutions to achieve excellence in accomplishing the agency's mission.

Fiscal Year	Goal Statement	Target Measure, Milestone, or Deliverable	Result
2014	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.	70 percent.	Achieved. 72 percent.
Actual Results for Preceding Fiscal Years			

Time to Decision Performance Trends, FY 2009-FY 2014

*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).

Discussion

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.

While NSF exceeded the target in FY 2014, it did so by a historically low margin. This is likely due to Foundation-wide delays in proposal processing after the lapse in funding authority in October 2013. This reduction is the most significant variation since FY 2009, when the goal was suspended after the first quarter to allow for a greater number of proposals to be processed with additional funds from ARRA.

Goal 13, Virtual Merit Review Panels
Lead Organization: Office of Integrative Activities, Office of the Director.

Strategic Alignment:
* G3/O2, Use effective methods and innovative solutions to achieve excellence in accomplishing the agency's mission.

Fiscal Year	Goal Statement and Target	Target Measure, Milestone, or Deliverable	Result
2014	Improve the ability to use virtual merit review panels by incorporating technological innovations into review process.	15 percent of merit review panels will be wholly virtual panels.	Achieved. 31.2 percent of panels were virtual panels.
Actual Results for Preceding Fiscal Years			
2013	Expand the use of virtual merit review panels.	As a pilot activity, five percent of merit review panels will be virtual panels.	Achieved. 28.6 percent of panels were virtual panels.
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 2014, administrative offices and program staff collaborated to complete the first three of a planned set of four training modules for organizers of virtual panels at NSF. An internal website 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 such as town hall meetings were conducted to familiarize staff with the resources available to them.

In FY 2012, 99 virtual panels were conducted. In FY 2013, 1,874 panels were held, of which 537 were wholly virtual (28.6 percent), exceeding the FY 2013 target of five percent wholly virtual panels. In FY 2014 a total of 1,292 panels were held of which 587 were wholly virtual (31.2 percent), exceeding the FY 2014 goal of 15 percent of wholly virtual panels. This significant increase in virtual participation over prior years can be attributed to several factors: a response to reductions in travel budgets; development of

virtual panel training materials; and management's encouragement to utilize virtual panels as a viable reviewer participation mechanism.   A virtual panelist survey administered to participating virtual panelists is being used to inform NSF's virtual panel process. Three of four planned virtual panel training modules have now been completed, with the fourth expected to be completed in FY 2015.