

FY 2015 ANNUAL PERFORMANCE REPORT

Each fiscal year the National Science Foundation (NSF) is required to prepare three reports to provide financial management and program performance information: the Annual Performance Report (APR), the Agency Financial Report (AFR), and the Performance and Financial Highlights Report. This report, the APR, includes the results of NSF's FY 2015 performance goals, including the agency priority goals (APGs), related to the Government Performance and Results Act of 1993 (GPRA) and the GPRA Modernization Act of 2010. All three reports are posted annually on the Budget and Performance page of the NSF web site (www.nsf.gov/about/performance/).

FY 2015 was the first full year of the implementation of NSF's Strategic Plan, *Investing in Science, Engineering, and Education for the Nation's Future: NSF Strategic Plan for 2014-2018*. In FY 2015, NSF tracked progress toward its three strategic goals, using ten performance goals, three of which are APGs. Based on results through Q4 of FY 2015, four of the ten goals fully achieved their targets in FY 2015 and six did not achieve one or more targets. Below is a tabular overview.

Goal ID	Performance Goals	FY 2015 Result
1	APG: Public Access Priority Goal	Not Achieved
2	APG: Data Science Priority Goal	Achieved
3	APG: Level Workload Priority Goal	Not Achieved
4	Key Program Investments	Achieved
5	Research Infrastructure Investments	Not Achieved
6	Evaluate NSF Investments	Not Achieved
7	Diversity and Inclusion	Not Achieved
8	Evidence-Based Management	Achieved
9	Timely Award Decisions	Achieved
10	Proposal Review Efficiency	Not 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 9) and the monitoring of construction projects (Goal 5). Other performance goals monitor progress towards multiyear goals, such as implementation of a new process or program (Goals 6 and 10) or an operational improvement (Goals 7 and 8).

Goal 1, Agency Priority Goal: Ensure Public Access to Publications

Lead Organization: Office of the Director.

Strategic Alignment

- Strategic Goal 1: Transform the Frontiers of Science and Engineering, Objective 3: Provide world-class research infrastructure to enable major scientific advances.
- Strategic Goal 2: Stimulate Innovation and Address Societal Needs through Research and Education, Objective 1: Strengthen the links between fundamental research and societal needs through investments and partnerships.
- Strategic Goal 3: Excel as a Federal Science Agency, Objective 2: Use effective methods and innovative solutions to achieve excellence in accomplishing the agency's mission.

2014-2015	Ensure Public Access to Publications	By September 30, 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.	Not achieved.

Discussion

Activities and achievements for this goal fall into several categories: development of the manuscript submission system, changes to internal NSF systems, and outreach. For more information, see www.performance.gov/content/ensure-public-access-publications.

- Development of manuscript submission system. The system was delayed several weeks due to issues with obtaining security certificates. Other components (e.g., interface design, metadata definition and display, negotiation of external agreements) were not delayed. 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. Parts of the NSF Public Access Repository (NSF-PAR) system were released in mid-November. The full roll-out began on November 20, 2015, and all components (public search, manuscript upload, and integration in internal award management systems) were functional by December 1, 2015. There are currently more than 12,000 records publicly available, and NSF is piloting the end-to-end author/program officer functionality. NSF and DOE will continue to monitor performance.
- Changes to internal systems. NSF has largely completed the requirements for the interfaces between the external and internal systems and has drafted user interfaces for primary investigators (PIs) and program officers (POs), based on earlier testing and additional user requirements studies. NSF made satisfactory progress in FY 2014 in identifying proposed changes to internal systems to accommodate system integration. The testing of the internal/external system integration was completed in FY 2014.
- Outreach. The NSF Public Access Plan (15-52) was released on March 18, 2015 together with a public website.¹ NSF made satisfactory progress in undertaking outreach and discussions with different stakeholder groups, other federal agencies, and possible public/private partners. NSF will continue to reach out to concerned stakeholder groups and accept comments on the plan

Explanation of Unmet Goal

This goal was not achieved in FY 2015 but was achieved December 1, 2015 (Q1 of FY 2016). The system was delayed several weeks due to issues with obtaining security certificates. Other components (e.g., interface design, metadata definition and display, negotiation of external agreements) were not delayed.

¹ www.nsf.gov/news/special_reports/public_access/

Goal 2, Agency 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:

- Strategic Goal 1: Transform the Frontiers of Science and Engineering, Objective 3: Provide world-class research infrastructure to enable major scientific advances.
- Strategic Goal 2: Stimulate Innovation and Address Societal Needs through Research and Education, Objective 1: Strengthen the links between fundamental research and societal needs through investments and partnerships.

2014-2015	Increase Data Scientists and Data Infrastructure	By September 30, 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.	Achieved.

Discussion

Activities and achievements for this goal fall into several categories: support for human capital development, partnerships, and infrastructure.²

- **Human Capital Development.** NSF has successfully inserted language emphasizing the education and training of data scientists in 18 solicitations. In the two-year period of this goal, NSF funded a number of workshops for the community:
 - NAS Workshop: Training Students to Extract Value from Big Data, April 2014.³
 - Advancing Data-Intensive Research in Education, June 2015.⁴
 - Graduate Data Science Workshop, August 2015.⁵
- **Partnerships.** Four Big Data Innovation Hubs were funded in FY 2015 to support partnerships that strive to achieve common big data goals that would not be possible to achieve alone.
- **Infrastructure.** In an effort to measure the number of communities/organizations/ecosystems that use data infrastructure and tools for their research and development (R&D) activities, NSF determined data intensiveness of NSF communities by monitoring the use of data-intensive high performance computing resources through Extreme Science and Engineering Discovery Environment (XSEDE). Compared to FY 2013, FY 2015 usage of XSEDE's data intensive resources rose by 30 percent. The number of scientific disciplines using XSEDE rose by 25 percent (from 28 to 35 disciplines).

² For more information, see www.performance.gov/content/increase-nation's-data-science-capacity.

³ www.nap.edu/read/18981/chapter/1

⁴ <http://cra.org/events/workshop-2-advancing-data-intensive-research-in-education/>

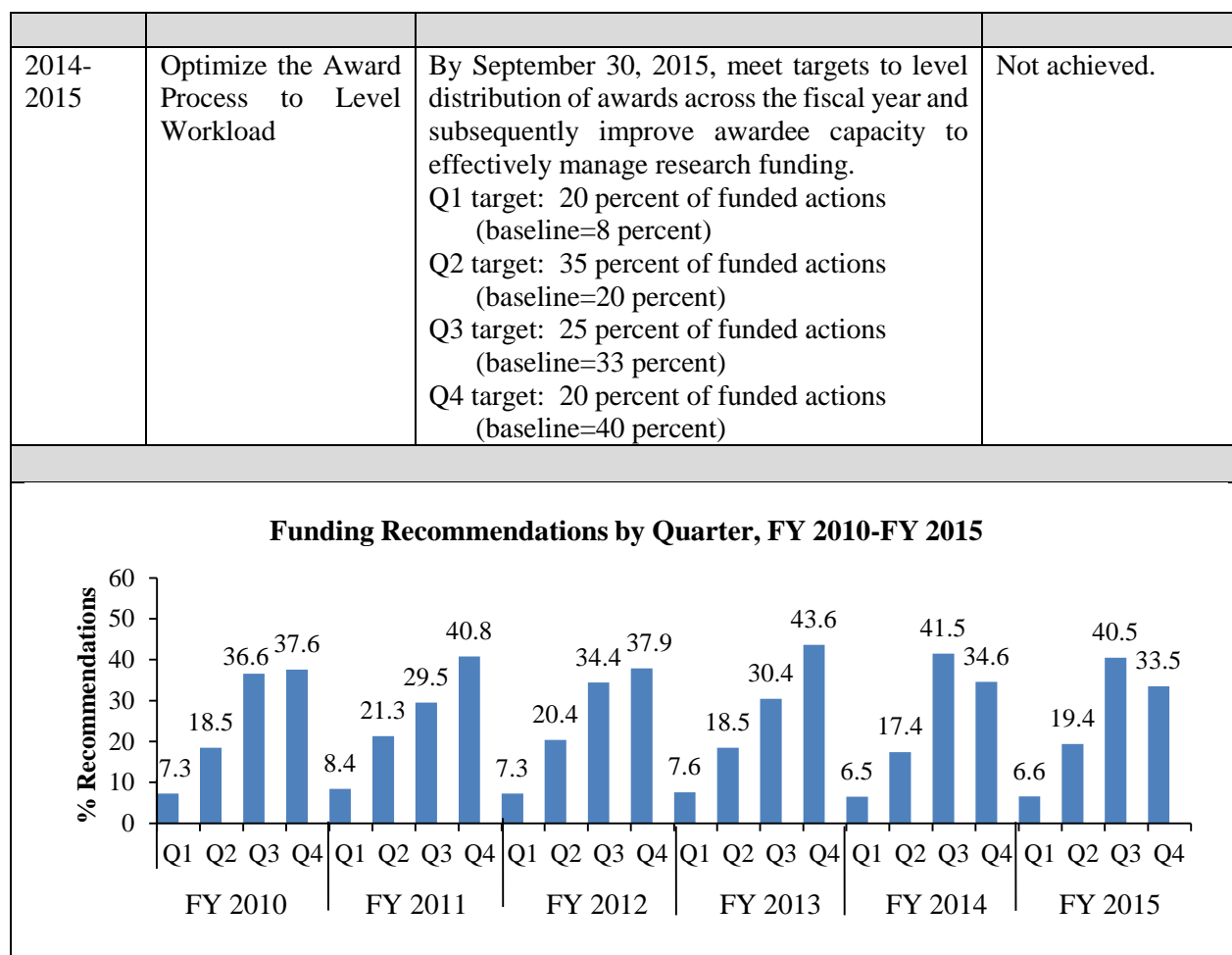
⁵ <http://depts.washington.edu/dswkshp/>

Goal 3, Agency Priority Goal: Optimize the Award Process to Level Workload

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

Strategic Alignment:

- Strategic Goal 3: Excel as a Federal Science Agency, Objective 2: Use effective methods and innovative solutions to achieve excellence in accomplishing the agency's mission.

**Discussion**

For more information on this goal, see www.performance.gov/content/optimize-award-process-level-workload.

NSF typically awards a large fraction of its nearly 20,000 funded grant actions in Q4 due to the fact that almost 75 percent of proposals and funding requests are recommended for award during the last half of the fiscal year. Issuing such a high volume of awards in a compressed time period during the end of the fiscal year not only strains NSF's workforce, as well as other resources such as IT business systems and space for conducting review panels, but also increases risk and places added stress on awardee capabilities coinciding with these peak workload periods. This goal was set to promote strategies that address calendar management, operating procedures, and potential IT improvements, with the goal of mitigating the negative impacts of the current imbalanced award distribution for both NSF and the Nation's scientific research community.

The FY 2014 activities towards this goal were focused on establishing implementation teams for each directorate and piloting approaches that may provide novel and/or innovative solutions to leveling proposal and award workload across the fiscal year. 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 Q3 of 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, and 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 Q4.

Explanation of Unmet Goal

This goal was not achieved in FY 2015. While there was a slight shift of actions into Q1 and Q2 and out of Q4 compared to FY 2014, overall levels were in line with historical trends. NSF has learned that such changes would take more than two years.

In FY 2016 and beyond, NSF will apply lessons learned from the goal to continue efforts within the agency to level workload. For example, strategic decisions to move deadlines for specific high-volume programs can have significant effects in moving actions across quarters. Future efforts in this area will focus on such strategically chosen actions likely to have small impact on NSF operations as a whole but large impact on awards processing.

Goal 4. Key Program Investments

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

Strategic Alignment:

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

2015	Meet critical targets for key program investments.	Monitor the progress of Cognitive Science and Neuroscience, CEMMSS, CIF21, SaTC, and SEES using a common set of milestones and indicators.	Achieved (five of five programs monitored).
2014 (new goal)	Meet critical targets for key FY 2014 program investments.	Monitor the progress of CEMMSS, CIF21, I-Corps™, INSPIRE, SaTC, and SEES using a common set of milestones and indicators.	Not achieved (four of six programs monitored).

Discussion

NSF instituted the Key Program Investments goal in 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 2015, NSF successfully monitored the progress of five NSF-wide investments (Understanding the Brain, 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. The following were tracked quarterly in FY 2015:

- Input indicator: progress towards the investment's funding level target.
- Output indicators: solicitations issued, proposals received, awards made.
- Investment-specific activities: defined by each investment in its roadmap, this can include PI meetings, Ideas Labs, workshops, and evaluation contract deliverables.

These measures enabled managers and leaders to quickly gauge the status of a program's implementation, interest from the scientific community, whether the review process resulted in awards in a timely manner, and whether the program has met its internal goals for short-term outcomes. Tracking these measures over time provided managers and leaders with the opportunity to assess whether mid-course corrections were needed to improve program management and/or the overall direction of the investment.

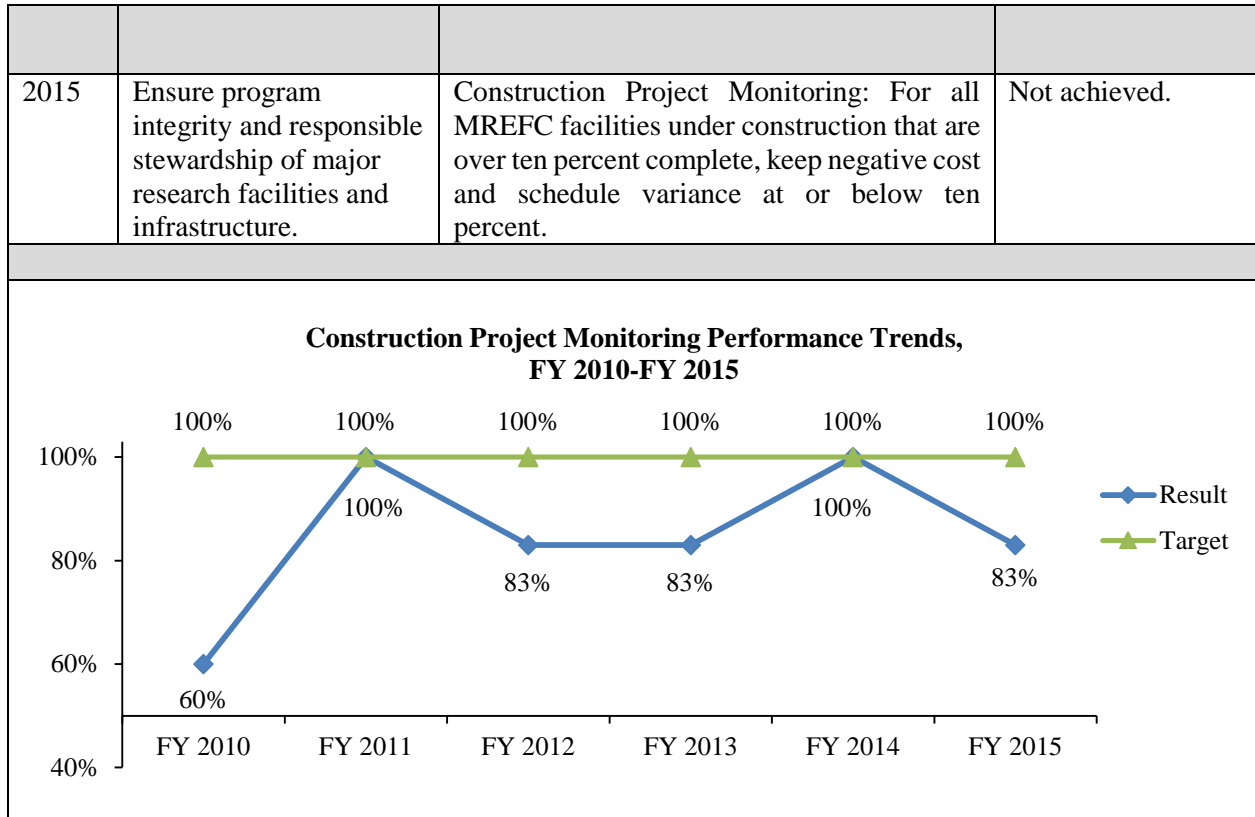
In FY 2016, three programs will be monitored including Understanding the Brain and two new programs, NSF INCLUDES and INFEWS. Monitoring of the four other FY 2015 programs (CEMMSS, CIF21, SaTC, and SEES), many of which are entering their final years of implementation, will be discontinued.

Goal 5, Research Infrastructure Investments

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

Strategic Alignment:

- Strategic Goal 1: Transform the Frontiers of Science and Engineering, Objective 3: Provide world-class research infrastructure to enable major scientific advances.



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 ten percent complete are not considered eligible for this goal because EVM data is less meaningful statistically in the very early stages of a project.

Five of the six projects that were over ten percent complete by the end of FY 2015 were on track: 1) the Advanced Laser Interferometer Gravitational-wave Observatory (AdvLIGO) project is complete except for procurement and implementation of the Data Computing System (DCS); 2) the Daniel K. Inouye Solar Telescope (DKIST) made significant progress; 3) the Ocean Observatories Initiative (OOI) was successfully completed as planned on October 31, 2015; 4) the Alaska Region Research Vessel (ARRV), *Sikuliaq*, is nearing 98 percent complete following final negotiations with the shipyard. EVM reporting has been discontinued with spending now monitored through the awardee's general ledger in preparation for close-out; and 5) the Large Synoptic Survey Telescope (LSST) continues to make good technical progress

and improvements in cost and schedule performance. For more information about all projects currently funded from the MREFC account, see the Major Research Equipment and Facilities Construction chapter of this submission.

Explanation of Unmet Goal

The National Ecological Observatory Network (NEON) experienced schedule performance issues in FY 2015 and is being re-scoped. NSF continues to be highly involved with oversight now that the project has crossed the -10 percent performance threshold.

Goal 6, Evaluate NSF Investments

Lead Organization: Office of Integrative Activities.

Strategic Alignment:

- Strategic Goal 1: Transform the Frontiers of Science and Engineering, All Objectives.
- Strategic Goal 2: Stimulate Innovation and Address Societal Needs through Research and Education, All Objectives
- Strategic Goal 3: Excel as a Federal Science Agency, All Objectives

2015 (new goal)	Enable consistent evaluation of the impact of NSF investments with a high degree of rigor and independence.	<ol style="list-style-type: none">1. By September 2015, the Evaluation and Assessment Capability will have developed evaluation quality principles and disseminated them to all directorates.2. These quality principles will be followed by all new evaluation projects across the agency.3. NSF will have incorporated logic models/theory of change in the language that describes the rationale for all new programs.	<ol style="list-style-type: none">1. Not achieved.2. Not achieved.3. Not achieved.

Discussion

The Evaluation and Assessment Capability (EAC), housed in the Office of Integrative Activities, provides NSF with the independent capacity to operate from a basis of evidence in program and policy decisions. The EAC has three multi-year goals: 1) encourage a culture of evidence-based planning and policy-making; 2) encourage increased rigor, independence, and consistency in all evaluations and assessments; and 3) develop and implement a coordinated evaluation framework. This performance goal, new in FY 2015, was intended to contribute towards these longer-term goals.

In FY 2015, NSF funded a series of workshops with international experts in the evaluation of science programs which was open to all NSF staff. The series accomplished the goal of disseminating the need for rigor in evaluation projects to staff NSF-wide. The report from the workshop series was used to inform the appropriate methodologies and methods for programs of different sizes and type.

Explanation of Unmet Goal

For target 1, the principles were developed in FY 2015, but not finalized. Achievement of targets 2 and 3 were contingent on the fulfillment of target 1.

Goal 7, Diversity and Inclusion

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

Strategic Alignment:

- Strategic Goal 3: Excel as a Federal Science Agency, Objective 1: Build an increasingly diverse, engaged, and high-performing workforce by fostering excellence in recruitment, training, leadership, and management of human capital.

FY	Goal Statement	Target Measure, Milestone, or Deliverable	Result
2015	Foster an environment of diversity and inclusion while ensuring compliance with the agency's Equal Employment Opportunity (EEO) and civil rights programs.	1. Continue to perform as a model EEO agency. 2. Perform two compliance desk reviews under the applicable anti-discrimination laws.	1. Not achieved (five of six essential elements attained: A, B, C, D, & F). 2. Achieved.
Actual Results for Preceding Fiscal Years			
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 antidiscrimination laws.	1. Not achieved (four of six essential elements attained: A, C, D, & E). 2. Achieved. 3. Not achieved.
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: A-E).
2012	Perform activities necessary to attain essential elements of a model EEO agency, as defined by the EEOC.	1. Attain four of six essential elements. 2. Submit Diversity and Inclusion Strategic Plan to OPM by March 30, 2012.	1. Achieved (four elements attained: C, D, E, & F). 2. Achieved.
2011	Attain essential elements of a model EEO agency, as defined by the EEOC.	Three elements.	Achieved (three elements attained A, B, & C).

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 2015, NSF complied with five of the six essential elements towards attaining a model EEO Agency Program: elements A, B, C, D, and F.

In 2014, NSF expanded this goal in two ways, which continued in FY 2015. First, NSF set a target to attain all of the elements of a model EEO agency—a status no agency has currently 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. In FY 2015, NSF was successful in performing two onsite Title IX compliance reviews: 1) April 2015 at the University of Tennessee’s College of Engineering’s Graduate Department of Electrical Engineering and Computer Science and 2) September 2015 at the University of Utah’s College of Engineering’s Graduate Department of Mechanical Engineering.

Explanation of Unmet Goal

For target 1, NSF attained 5 of 6 essential elements of a model EEO Agency. Delays in processing of disputes inhibited achievement of element E, Efficiency.

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 and complied with essential element A including ensuring that EEO policy statements were current, communicated to all employees, and vigorously enforced by agency management.
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 supports the agency’s strategic mission.	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 office is involved in, and is consulted on, management/personnel action; and NSF 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.

Essential Element	NSF Activities
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 two measures under 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 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 and investigations are conducted within the applicable timeframes.
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 8, Evidence-Based Management

Lead Organization: Office of Information and Resource Management

Strategic Alignment:

- G3: Excel as a Federal Science Agency, All Objectives

FY	Goal Statement	Target Measure, Milestone, or Deliverable	Result
2015	Use evidence-based reviews to guide management investments.	<p>HRStat measures:</p> <ol style="list-style-type: none"> 1. Establish indicators to assess the impact and progress of three workforce initiatives designed to advance progress toward or address barriers to the accomplishment of mission related goals and objectives. 2. During FY 2015, focus at least two evidence-based reviews on the three identified workforce initiatives. <p>PortfolioStat measures:</p> <ol style="list-style-type: none"> 3. NSF's information technology governance boards will evaluate and prioritize proposed investments for FY 2017. 4. NSF's information technology governance boards will use cost and schedule data on existing investments to inform investment decisions for FY 2017. Percentage of IT projects within ten percent of budgeted costs and percentage of IT projects within ten percent of budgeted schedule will be tracked. 	<ol style="list-style-type: none"> 1. Achieved. 2. Achieved. 3. Achieved. 4. Achieved.
Actual Results for Preceding Fiscal Years			
2014 (new goal)	Use evidence-based reviews to guide management investments.	<p>HRStat measures:</p> <ol style="list-style-type: none"> 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. <p>PortfolioStat measures:</p> <ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 1. Achieved. 2. Achieved. 3. Achieved. 4. Achieved. 5. Achieved.

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 de-emphasized by leadership.

In FY 2015, NSF met target 1 by selecting three areas of focus for workforce initiatives: Employee Engagement, Hiring and Losses, and Workload. Employee Engagement indicators include the government-wide Employee Engagement Index (EEI) and NSF's Joint Engagement Index (JEI). Hiring and Losses indicators include time-to-hire data, loss rates, IPA costs and turnover, FTE utilization, and retirement eligibility. Workload indicators include NSF's Workload Index and the NSF weighted workload model. HRStat meetings in Q1, Q2, and Q4 satisfied target 2 in FY 2015.

- Portfolio Stat: targets 3 and 4. These targets monitor NSF's IT investment evaluation process. NSF's IT investments support the Foundation's business needs through a formal and disciplined IT investment review and decision-making process. Specifically, NSF's process for approving centrally-funded IT investments requires 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. The process 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 2017 IT budget request and prioritize the IT investment portfolio.

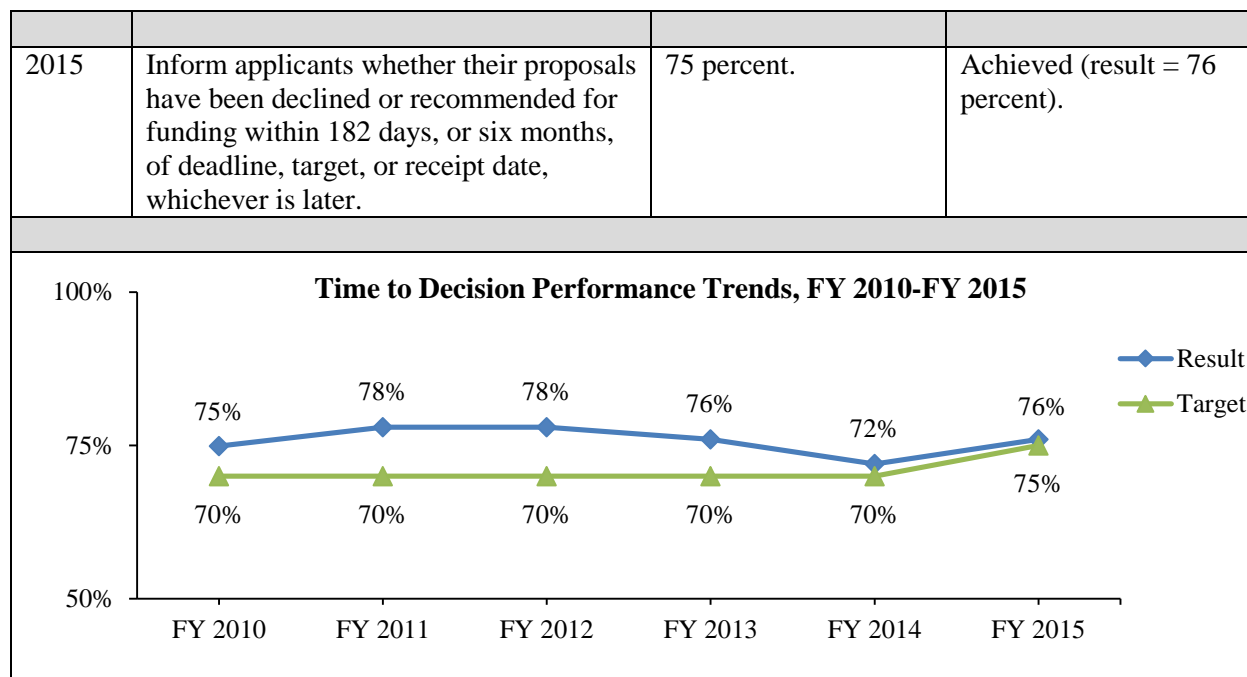
Target 4 speaks specifically to the requirement to monitor in-process investments cost and schedule to inform funding discussions for each year (FY 2017 for this report). This ensures that governance boards are aware of the progress and accomplishments for those investments that they recommended for funding.

Goal 9, Customer Service: Time to Decision

Lead Organization: Office of Integrative Activities.

Strategic Alignment:

- Strategic Goal 3: Excel as a Federal Science Agency, Objective 2: Use effective methods and innovative solutions to achieve excellence in accomplishing the agency's mission.



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.

In FY 2015, this target was raised from 70 to 75 percent to be more in line with the historical trend of achievement at or above this level (NSF exceeded the 70 percent target in FY 2014 by a historically low margin, likely due to Foundation-wide delays in proposal processing after the lapse in funding authority in October 2013). The FY 2015 result of 76 percent was in line with historical achievement.

Goal 10, Proposal Review Efficiency

Lead Organization: Office of Integrative Activities, Office of the Director.

Strategic Alignment:

- Goal 3: Excel as a Federal Science Agency, Objective 2: Use effective methods and innovative solutions to achieve excellence in accomplishing the agency's mission.

2015	Identify new approaches to keep NSF's world-renowned merit review process innovative, effective, and efficient.	<ol style="list-style-type: none"> 1. At least 33 percent of merit review panels will be wholly virtual panels. 2. At least five divisions explore use of asynchronous panels. 3. Pilot at least two additional innovative merit review mechanisms. 4. Assess the results from two merit review pilot activities conducted prior to FY 2015. 5. Complete assessments of synchronous virtual panel pilot. 	<ol style="list-style-type: none"> 1. Not achieved (result = 25.2 percent). 2. Not achieved (result = two divisions). 3. Achieved. 4. Achieved. 5. Achieved.
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 (result = 29.6 percent).
2013	Expand the use of virtual merit review panels.	As a pilot activity, five percent of merit review panels will be virtual panels.	Achieved (result = 26.3 percent).
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

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. Approximately 1,900 review panels are held each year. 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.

Review panels provide ample opportunity to test new methods and practices. One such practice, the use of virtual meeting technology to replace in-person panels, has been the subject of pilot testing and performance goals since FY 2010. 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. In FY 2015, this goal expanded to also monitor other aspects of the merit review pilot process.

FY	Total Panels	Wholly Virtual Panels	% Wholly Virtual Panels
2011	1763	55	3.1%
2012	1801	149	8.3%
2013	2073	545	26.3%
2014	1986	588	29.6%
2015	2131	537	25.2%

In FY 2012, 1801 panels were held, of which 149 (8.3 percent) were wholly virtual. In FY 2013, 2073 panels were held, of which 545 were wholly virtual (26.3 percent), exceeding the FY 2013 target of five percent wholly virtual panels. In FY 2014, a total of 1986 panels were held of which 588 were wholly virtual (29.6 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.

In FY 2015, targets 1 and 2 were not met. For target 1, the result is 25.2 percent, below the 33 percent target. For target 2, only two divisions participated in the pilot. The remaining targets were achieved. For target 3, three pilots were successfully deployed in FY 2015: asynchronous panels, e-polling, and virtual sidebar discussions. Targets 4 and 5 were achieved; assessments of the pre-FY 2015 merit review pilots, were produced, as well as an assessment of the virtual panel pilot. These affirm NSF's commitment to understanding how and why merit review pilot innovations are or are not successful. The assessments are likely to be used in future scaling efforts designed to expand use of the innovations.

Explanation of Unmet Goal

Targets 1 and 2 were not met. Because of the range of approaches to merit review across organizational units, NSF management adopted a voluntary approach to participation to merit review pilots in FY 2015. This approach did not secure the necessary level of participation to meet these two targets.