FY 2019 ANNUAL PERFORMANCE REPORT AND FY 2021 ANNUAL PERFORMANCE PLAN

This document combines NSF's FY 2019 Annual Performance Report and FY 2021 Annual Performance Plan (APP + APR = APPR). FY 2020's goals, and historical information on individual goals, are also provided when available. Results for each performance goal are presented in strategic context, with reference to strategic goals, objectives, and targets from NSF's 2018-2022 Strategic Plan. Multiple years of trend data are available for NSF's longstanding quantitative performance measures (Infrastructure Investments and Timely Proposal Decisions). Other performance goals monitor progress towards multiyear goals, such as implementation of a new process (Improve Review Quality, Culture of Inclusion), upgrades to ongoing processes (Align Job Requirements, Improve User Interactions), or strategically important investments (Key Program Investments, Expand Public and Private Partnerships).

In FY 2019, NSF tracked progress toward its three strategic goals using eight performance goals, one of which was an Agency Priority Goal. Six of the eight goals partially or fully achieved their targets in FY 2019 and two goals missed their targets.

Goal 1, Agency Priority Goal (APG): Public and Private Partnerships
Lead Organizations: Directorate for Biological Sciences, Directorate for Computer and Information Science and Engineering.

Goal Statement
Strategically engage in public and private partnerships to enhance the impact of NSF's investments and contribute to American economic competitiveness and security.

Measure, Milestone, or Deliverable

Current Year		
FY	**Target Summary**	
2020-2021	To benefit the U.S. scientific and engineering research and education enterprise, by September 30, 2021, NSF will develop and pursue an agency-wide partnerships strategy, components of which will include targeted outreach, implementation of process improvements, and improvement of internal and external communications.	
Reporting Year		
FY	**Target Summary**	**Result**
2019	Expand public and private partnerships to enhance the impact of NSF's investments and contribute to American economic competitiveness and security.	Achieved.
		FY 2017 baseline = 57 partnerships
	By September 30, 2019, NSF's number of partnerships and award actions with other federal agencies, private industry, and foundations/philanthropies will grow by five percent, relative to the FY 2017 baseline, to make available infrastructure, expertise, and financial resources to the US scientific and engineering research and education enterprise.	70 partnerships in FY 2019, an increase of 23 percent over FY 2017 baseline.
Previous Years		
FY	**Target Summary**	**Result**
2018	No FY 2018 target—first year of APG	FY 2018 = 68 partnerships

Strategic Alignment
Strategic Goal 2: Advance the capability of the Nation to meet current and future challenges. Objective 2.1, Societal Impacts: Support research and promote partnerships to accelerate innovation and to provide new capabilities to meet pressing societal needs.

About This Goal
This goal incorporates principles from Renewing NSF, the agency operational reform plan initiated in FY 2017 in response to M-17-22, "Comprehensive Plan for Reforming the Federal Government."

Private industry, foundations, and non-profits, together with other federal agencies and international funding organizations, bring additional expertise, resources, and capacity to NSF-funded research. This, in turn, accelerates discovery and translation of research to products and services, and enhances preparation of the future workforce to benefit society and grow the American economy.

Partnerships require significant time and intellectual capital, as well as strategic foresight, in their development. NSF will improve efficiencies in developing, implementing, and managing partnerships to ultimately grow the number and scope of partnerships and maximize the scientific, economic, and societal impacts of its investments.

Discussion of FY 2019 Results

As a result of this APG, NSF noted a significant year-over-year increase in number of partnership activities, defined for this APG as a formal agreement between NSF and at least one external, domestic stakeholder and for which there was investment, new commitment, or other quantifiable contribution formalized in the fiscal year. "Formal agreements" include, but are not limited to, Interagency Agreements and Memoranda of Understanding. Additionally, the Partnerships APG implementation team increased the Foundation's awareness of partnerships, increased the attention paid to strategy and diversity of opportunity in partnership formation, and streamlined processes relating to partnerships. See performance.gov/NSF for a fuller report on these activities.

FY 2020 and Planned FY 2021 Changes

In FY 2020 and beyond, the Partnerships pillar of Renewing NSF and the APG Implementation Team will merge to strengthen NSF's partnerships strategy. The group will focus on the strategic value of the Foundation's partnerships, including a milestone-oriented approach to reporting and assessing progress. The group plans to continue refining the approach used in FYs 2018-2019 to quantitatively track partnerships.

Goal 2, Ensure that Key Program Investments are on Track
Lead Organization: Office of Budget, Finance, and Award Management.

Goal Statement
Ensure that key NSF-wide program investments are implemented and on track.

Measure, Milestone, or Deliverable

Current and Upcoming Years		
FY	**Target Summary**	
2021	NSF will obligate 100 percent of designated funding targets for all identified NSF-wide priority investments.	
2020		
Reporting Year		
FY	**Target Summary**	**Result**
2019	1. Monitor the progress of the following NSF-wide investments using a common set of milestones and indicators: Big Ideas. 2. Review the results with senior leaders quarterly in data-driven performance reviews.	Achieved

Strategic Alignment
- Strategic Goal 1: Expand knowledge in science, engineering, and learning (all Objectives)
- Strategic Goal 2: Advance the capability of the Nation to meet current and future challenges (all Objectives)

About This Goal
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. Most are described in the NSF-Wide Investments chapter of the Budget Request. 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.

NSF selects a subset of these investments for closer quarterly tracking by agency leadership, based on internal assessments of the value that tracking is likely to add. For example, new programs, programs with recent changes, or high-profile programs may benefit from the attention of leadership, and programs that are stably operating or sunsetting have reduced need for monitoring.

Discussion of FY 2019 Results
NSF monitored ten Big Ideas investments under this goal in FY 2019. This was the first fiscal year when all Big Ideas issued solicitations. NSF monitored solicitation issuance dates, numbers of proposals received and awards made, and funding obligated. Reports were reviewed with senior leaders at three points (due to the lapse in funding in Q1 and Q2 at both NSF and OMB, Q1 and Q2 performance reporting requirements were considered together after the lapse ended).

FY 2020 and Planned FY 2021 Changes
The Big Ideas will remain the focus of this goal. The unit of measurement is being modified to simplify quarterly tracking and the determination of achievement.

Goal Change History
The intended purpose of tracking these key investments is to ensure that these projects meet internal milestones and issue funding adequate to achieve the desired advances in science and engineering. NSF's independent verification and validation team has pointed out weaknesses in the measurability, and therefore utility, of this goal. The measurement method was established in FY 2014 to accommodate programs with

different structures, which were not all tracked the same way within NSF's systems—a common issue at that time. Since the Big Ideas are defined and tracked similarly, NSF is changing from a qualitative approach (where the unit of analysis is a program) to a quantitative approach (unit of analysis is the percentage of funds obligated relative to a target). This change will make for a more quantifiable and meaningful goal.

Previous Years		
FY	**Target Summary**	**Result**
2018	1. Monitor the progress of the following NSF-wide investments using a common set of milestones and indicators: NSF INCLUDES, INFEWS, Risk and Resilience, and UtB. 2. Review the results with senior leaders quarterly in data-driven performance reviews.	Achieved
2017	1. Monitor the progress of the following NSF-wide investments using a common set of milestones and indicators: NSF INCLUDES, INFEWS, Risk and Resilience, and UtB. 2. Review the results with senior leaders quarterly in data-driven performance reviews.	Achieved
2016	Monitor the progress of the following NSF-wide investments using a common set of milestones and indicators: NSF INCLUDES, INFEWS, and UtB.	Achieved
2015	Monitor the progress of Cognitive Science and Neuroscience, CEMMSS, CIF21, SaTC, and SEES using a common set of milestones and indicators.	Achieved
2014	Monitor the progress of CEMMSS, CIF21, I-Corps™, INSPIRE, SaTC, and SEES using a common set of milestones and indicators.	Not achieved

By design, this goal's monitored programs change annually to match the funding priorities of the year. In addition to the annual change in the list of monitored programs, described in the narrative and the table below, the Goal Statements have changed slightly each year for this goal, as follows:

FY 2019: Ensure that key FY 2019 NSF-wide program investments are implemented and on track.
FY 2018: Ensure that key FY 2018 NSF-wide program investments are implemented and on track.
FY 2017: Ensure that key FY 2017 NSF-wide program investments are implemented and on track.
FY 2016: Ensure that key FY 2016 NSF-wide program investments are implemented and on track.
FY 2015: Meet critical targets for key program investments.
FY 2014: Meet critical targets for key FY 2014 program investments.

FY	CEMMS	SaTC	CIF21	SEES	UtB	INFEWS	NSF INCLUDES	Risk and Resilience
2014	✓	✓	✓	✓				
2015	✓	✓	✓	✓	✓			
2016					✓	✓	✓	
2017			sunset	sunset	✓	✓	✓	✓
2018	sunset				✓	✓	✓	✓

CEMMS: Cyber-enabled Materials, Manufacturing, and Smart Systems
SaTC: Secure and Trustworthy Cyberspace
CIF21: Cyberinfrastructure Framework for 21st Century Science and Engineering
SEES: Science, Engineering, and Education for Sustainability
UtB: Understanding the Brain
INFEWS: Innovations at the Nexus of Food, Energy and Water Systems
NSF INCLUDES: Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science

Goal 3, Ensure that Infrastructure Investments are on Track
Lead Organization: Large Facilities Office, Office of Budget, Finance, and Award Management.

Goal Statement
Ensure program integrity and responsible stewardship of major research facilities and infrastructure.

Measure, Milestone, or Deliverable

Current and Upcoming Years	
FY	**Target**
2021	Construction Project Monitoring (MREFC and R&RA):
	1. Keep negative cost and schedule variance at or below 10 percent for 100 percent of Major Facilities in the Construction Stage that are over 10 percent complete.
2020	2. Track cost and schedule performance for Mid-scale Research Infrastructure in the Construction Stage with a Total Project Cost (TPC) above $20.0 million that are over 10 percent complete and using Earned Value Management (EVM) principles.

Reporting Year		
FY	**Target**	**Result**
2019	Construction Project Monitoring: For 100 percent of MREFC facilities under construction that are over 10 percent complete, keep negative cost and schedule variance at or below 10 percent.	Achieved.
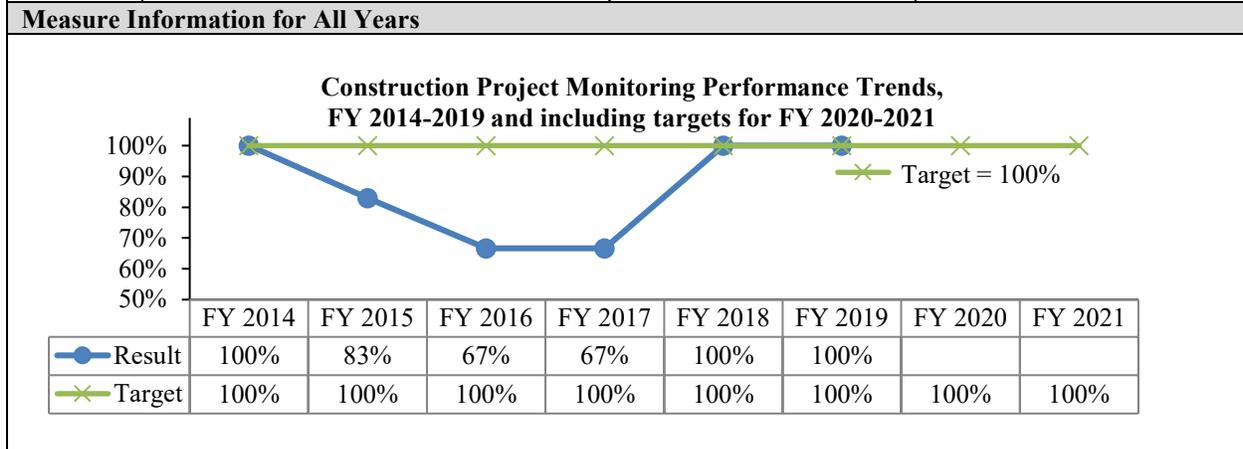
Measure Information for All Years		

Construction Project Monitoring Performance Trends, FY 2014-2019 and including targets for FY 2020-2021

	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
Result	100%	83%	67%	67%	100%	100%		
Target	100%	100%	100%	100%	100%	100%	100%	100%

Strategic Alignment
Strategic Goal 1: Expand knowledge in science, engineering, and learning. Objective 1.1, Knowledge: Advance knowledge through investments in ideas, people, and infrastructure.

About This Goal
The 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 System (EVMS). EVMS 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.

Discussion of FY 2019 Results
For more information about all projects currently funded from the MREFC account, see the Major Research

Equipment and Facilities Construction chapter of this Budget Request.

All of the projects that were over 10 percent complete by the end of FY 2019 were on track. At the end of FY 2019, the Daniel K. Inouye Solar Telescope was 94 percent complete, the Large Synoptic Survey Telescope was 75 percent complete, and the Regional Class Research Vessel project was 21 percent complete. Each project had cost and schedule variances well below the 10 percent thresholds. The National Ecological Observatory Network completed the construction phase in FY 2019.

FY 2020 and Planned FY 2021 Changes
In FY 2020, the population of projects will expand. The Antarctic Infrastructure Modernization for Science project is likely to cross the 10 percent complete threshold during FY 2020. Additionally, projects funded by the NSF Mid-scale Research Infrastructure Big Idea (MSRI) will also be tracked by this goal. More specifically, those MSRI projects with a Total Project Cost above $20.0 million will be tracked using EVM principles.

Goal 4, Make Timely Proposal Decisions
Lead Organization: Office of Integrative Activities.

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.

Measure, Milestone, or Deliverable
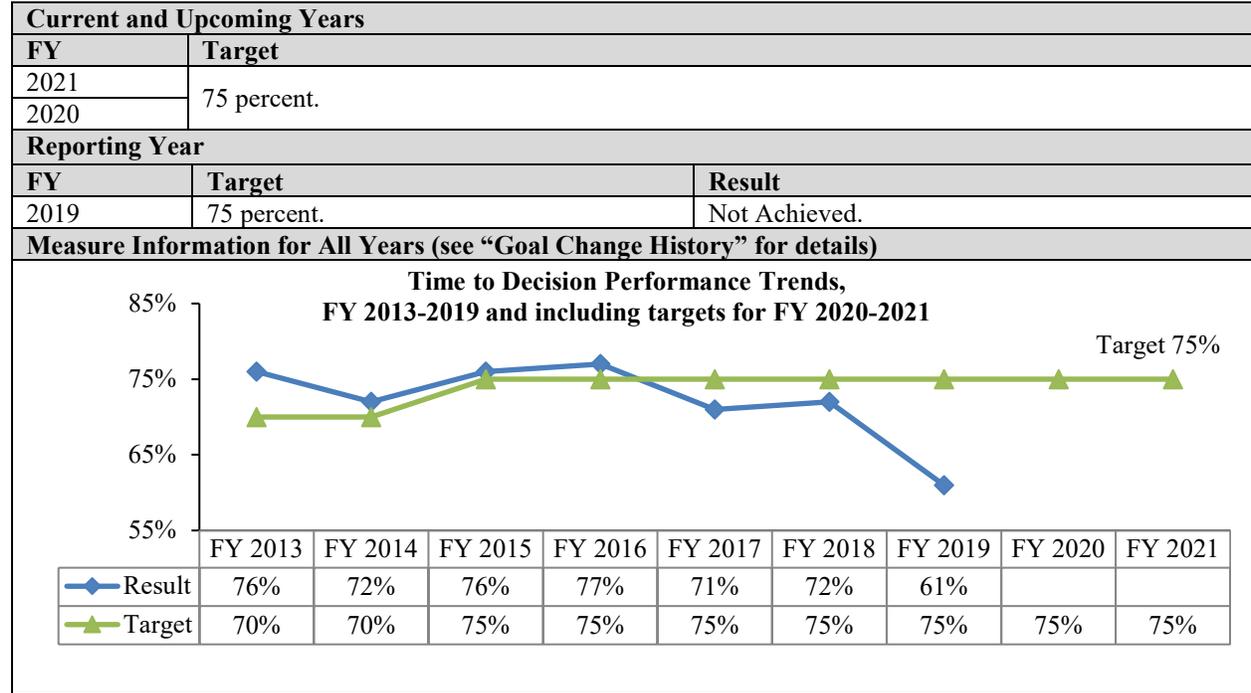
Current and Upcoming Years		
FY	**Target**	
2021	75 percent.	
2020		
Reporting Year		
FY	**Target**	**Result**
2019	75 percent.	Not Achieved.
Measure Information for All Years (see "Goal Change History" for details)		

Time to Decision Performance Trends, FY 2013-2019 and including targets for FY 2020-2021

Target 75%

	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
Result	76%	72%	76%	77%	71%	72%	61%		
Target	70%	70%	75%	75%	75%	75%	75%	75%	75%

Strategic Alignment
Strategic Goal 3, Enhance NSF's performance of its mission. Objective 3.2, Processes and Operations: Continually improve agency operations.

About This Goal
Time to decision or "dwell time" is the amount of time that passes between receipt of a proposal and notification to the principal investigator (PI) about the funding decision. At the time of this goal's establishment in the early 2000s, one of the most significant issues raised in customer satisfaction surveys was the time it took NSF to process proposals, with only around 50 percent of proposals receiving responses within 6 months of submission or deadline. Too long a time period inhibits the progress of research as it delays the funding process, but too short a time period may inhibit review quality. The 75 percent target seeks to strike a balance between the need of the PI for timely action and the need of NSF for a credible and efficient merit review system. Since this goal was introduced, NSF's response times have improved, and over 70 percent of proposals have received responses in under 6 months for nearly two decades. More recent surveys have shown that this is now the second most common concern mentioned by PIs (see Goal 6, Improve Review Quality, for more recent survey results).

Discussion of FY 2019 Result
Explanation of Unmet Goal
NSF missed this goal in FY 2019 due to the 35-day lapse in funding during December 2018-January 2019. More specifically, this goal was missed due to key decisions that were made when prioritizing work upon

returning to normal operations. As in FY 2017, when NSF was relocating to its new headquarters in Alexandria, upon resumption of operations in Q2 FY 2019 NSF staff were directed to prioritize processing award decisions ahead of decline decisions. In FY 2017 this shift in work facilitated an early close-out, while in FY 2019 this shift made up for the lost weeks of award processing work in the middle of the fiscal year. This decision to prioritize awards is likely to affect the FY 2020 dwell time result, as NSF is now processing a backlog of likely declines.

FY 2020 and Planned FY 2021 Changes
NSF will continue its target of informing 75 percent of proposers of the decisions reached within 6 months of submission.

Goal Change History
In FY 2015, the target was raised from 70 to 75 percent to be more in line with the historical trend of achievement from 75 to 80 percent. The low dwell time result in FY 2014, 72 percent, was likely due to Foundation-wide delays in proposal processing after the lapse in funding authority in October 2013.

Goal 5, Improve Review Quality
Lead Organization: Office of Integrative Activities, Office of the Director.

Goal Statement
Improve the quality of written reviews of NSF proposals.

Measure, Milestone, or Deliverable

Current and Upcoming Years		
FY	**Target**	
2021	TBD mid-FY 2020	
2020	By September 30, 2020, 1. 140 NSF programs will have had reviewers view the presentation "Tips on how to write better reviews." 2. 10,000 reviewers of NSF proposals will have viewed "Tips on how to write better reviews" prior to preparing written reviews.	
Reporting Year		
FY	**Target**	**Result**
2019	By September 30, 2019, 1. 60 NSF programs will have had reviewers view the presentation "Tips on how to write better reviews." 2. 8,000 reviewers of NSF proposals will have viewed "Tips on how to write better reviews" prior to preparing written reviews. 3. Improve the perceptions reported by survey respondents in a repeat survey of proposers and reviewers. • Increase the percentage of PI survey respondents who agree that written reviews are thorough from a baseline of 55 percent (2015) to 57 percent in FY 2019. • Increase the percentage of PI survey respondents who agree that written reviews are technically sound from a baseline of 63 percent (2015) to 65 percent in FY 2019.	1. Achieved. 2. Achieved 3. Achieved
Previous Years		
2018	By September 30, 2018, 1. 50 NSF programs will have held orientation sessions that include "Tips on how to write better reviews." 2. 5000 reviewers of NSF proposals will have viewed "Tips on how to write better reviews" prior to preparing written reviews.	1. Achieved 2. Not achieved

Strategic Alignment
• Strategic Goal 1: Expand knowledge in science, engineering, and learning (all Objectives)
• Strategic Goal 3: Enhance NSF's performance of its mission. Objective 3.2, Processes and Operations: Continually improve agency operations.

About This Goal
This goal addresses and incorporates feedback NSF has received about its customer service. Committees of Visitors, program officers, and principal investigators (PIs) frequently note that the quality of individual written reviews is variable. In 2015, NSF conducted a survey of researchers who were submitting and/or reviewing proposals. Survey respondents identified the quality of reviews as the factor that would have the most significant effect on improving their proposals and fostering science (see chart below, n=22,174 respondents). A strategic review in the spring of 2015 recommended that NSF apply what was learned from the PI and reviewer survey to inform a new performance goal aimed at improving customer service. This goal was designed in response to that recommendation.

This goal measures the implementation of a pilot program, initiated in December 2016, to improve the

quality of written reviews of NSF proposals. The pilot encourages NSF programs to use the video presentation "Tips on how to write better reviews" early in the review process to orient reviewers and provide information on how to write more effective reviews. The assumption is that orienting reviewers before the reviews are written (as opposed to at the beginning of a review panel, at which time the reviews have been drafted but not finalized) helps reviewers better understand and apply the review criteria. The intention is to make written reviews more useful to both PIs and NSF program staff.

Percentage of respondents identifying each item as the most significant improvement that could be made in the merit review process.[1]
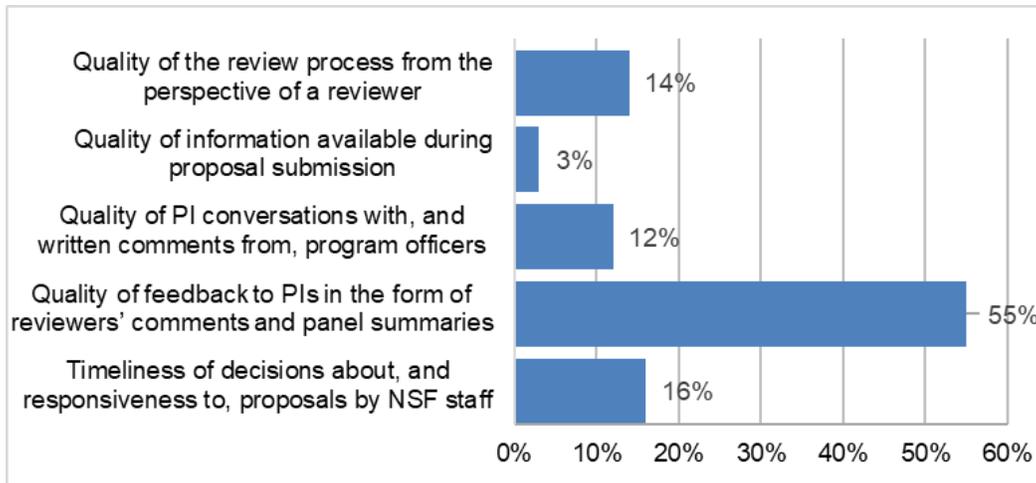
Discussion of FY 2019 Results
Through September 30, 2019, reviewers across at least 296 programs viewed the orientation video, exceeding the target of 50 programs. 5,894 reviewers viewed the orientation video prior to preparing written reviews in FY 2019. Combined with the 3,022 reviewers viewing the video in FY 2018, this makes a total of 8,916 reviewers viewing the video, exceeding the target of 8,000 reviewers.

The survey mentioned in FY 2019's third target was delayed by the lapse in appropriations. Preliminary data was used to assess this result. These data showed that 11,999 out of 18,632 respondents (64.4 percent) agreed or strongly agreed that written responses were thorough, and 12,950 out of 18,537 respondents (67.9 percent) agreed that written reviews are technically sound. These both exceed the targets of, respectively, 57 and 65 percent.

FY 2020 and Planned FY 2021 Changes
Development of FY 2021 targets for this goal is dependent on the results of the 2019 survey, which will not be available until mid-2020. At a high level, the goal—to improve review quality—remains highly relevant to NSF. Without the survey data, though, it is not possible to assess whether the current activities are having the desired impacts, so NSF is not yet in a position to decide which specific steps to take towards that end. Therefore, targets will be developed in the second half of FY 2020 and published in the FY 2022 Plan/FY 2020 Report. The survey is biennial and will be fielded again in FY 2021.

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[1] FY 2015 Merit Review Report, p.126. www.nsf.gov/nsb/publications/2016/nsb201641.pdf

Goal 6, Foster a Culture of Inclusion

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

Goal Statement

Foster a culture of inclusion through change management efforts resulting in change leadership and accountability.

Measure, Milestone, or Deliverable

Current and Upcoming Years		
FY	**Target**	
2021	All NSF leaders will participate in culture change activities.	
2020		
Reporting Year		
FY	**Target**	**Result**
2019	In FY 2019, 100 percent of NSF leaders will participate in culture change activities.	Not Achieved

Strategic Alignment

Strategic Goal 3, Enhance NSF's performance of its mission. Objective 3.1, Human Capital: Attract, retain, and empower a talented and diverse workforce.

About This Goal

This goal incorporates principles from Renewing NSF, the agency operational reform plan initiated in FY 2017 in response to M-17-22, "Comprehensive Plan for Reforming the Federal Government."

Fostering inclusive work environments and realizing the full potential of the workforce's diversity requires agencies to employ effective management practices. NSF values diversity and inclusion: by engaging the talent of all our workforce, individuals are empowered to realize their full potential; by insuring that our workforce is diverse, our collective ability to deliver on our scientific mission is enhanced. NSF looks for ways to intensify and innovate diversity efforts through active leadership and including and engaging everyone in the workplace. This goal will encourage leaders to participate in engagement initiatives being used around the Foundation, including, but not limited to:

• New Inclusion Quotient (New IQ) workshops,
• Diversity and Inclusion Dialogues,
• Workforce Inclusiveness Assessment,
• Special Emphasis observances,
• Employee Resource Groups,
• Unconscious bias awareness training, and
• Inclusion learning activities for all employees.

Discussion of FY 2019 Results

For FY 2019, NSF expanded this goal's scope in two ways: to include all leaders, and to include participation in activities other than the New IQ that might contribute to culture change. Unrelated to this particular goal, NSF took steps in FY 2018 to help ensure that all NSF-funded research and learning environments are free from harassment by bolstering policies, guidelines, and communications so that organizations clearly understand expectations and individuals understand their rights. Internally, the agency has promoted an identical set of expectations for its staff and leaders. In relating anti-harassment efforts to the aims of this goal, NSF determined that leadership's participation in anti-harassment and anti-bullying training had the potential to contribute to culture change, since it could not only help them identify and stop harassment and bullying, but could actively promote an environment and a culture where all contributions are valued and everyone can reach their full potential.

Explanation of Unmet Goal

To keep in the spirit of expanding the goal's scope to the entire agency, NSF in FY 2019 defined "leaders" broadly, to mean all managers and executives. To simplify measurement in the first year of the expanded goal scope, NSF defined "participate in culture change activities" narrowly, as completion of a new anti-harassment and anti-bullying training module made available to all NSF staff. The training module was not available until the fourth quarter of FY 2019. Despite the late roll-out of the training, 55 percent of NSF staff completed both training modules in the last two months of FY 2019, including over half of managers and executives and over 80 percent of senior leaders. As of mid-January 2020, over 80 percent of NSF staff, including all senior leaders, have completed the training.

FY 2020 and Planned FY 2021 Changes

In FY 2020 emphasis on full completion of the anti-harassment and anti-bullying training by all staff will continue. The list of activities that will be considered to support culture change is anticipated to expand as more offerings are made available to NSF staff.

Goal Change History

While NSF has had a performance goal relating to diversity and inclusion since FY 2011, throughout the years, new directions have emerged under its umbrella. For five years, goals were largely focused on NSF's efforts to attain "Model EEO Agency"[2] status. Starting in FY 2016, this goal focused on inclusion, and New IQ workshops[3] were made available to NSF staff. The focus on leadership represents another new direction for this goal in FY 2019. For more information on previous formulations of this goal, refer to the FY 2015 Annual Performance Report in the FY 2017 NSF Budget Request (Model EEO Agency[2]) or the FY 2018/FY 2020 APPR in the FY 2020 NSF Budget Request (New IQ[3]).

Previous Years (see "Goal Change History" for details)		
FY	**Target Summary**	**Result**
2018	1. By September 30, 2018, ODI will conduct the new IQ process with four organizational units. 2. Improve the four NSF organizational units' New IQ Self-Survey Scores by five percent above established baseline.	1. Achieved. Four units. 2. Achieved. Increases averaged 10 percent.
2017	1. By September 30, 2017, ODI will conduct the new IQ process with three additional organizational units. 2. Improve the three NSF organizational units' New IQ Self-Survey Scores by seven percent above established baseline.	No targets achieved.
2016	1. By September 30, 2016, ODI will conduct the new IQ process with two NSF organizational units. 2. Improve the two NSF organizational units' New IQ Self-Survey Scores by five percent above established baseline.	No targets achieved
2015	Attain six of six essential elements of a model EEO agency, perform two compliance desk reviews under antidiscrimination laws.	Not Achieved (4/6 elements, 2 desk reviews)
2014	Attain six of six essential elements of a model EEO agency, perform two compliance desk reviews under antidiscrimination laws.	Not Achieved (5/6 elements, 0 desk reviews)
2013	Attain five of six essential elements of a model EEO agency.	Achieved
2012	Attain four of six essential elements of a model EEO agency.	Achieved
2011	Attain three elements of a model EEO agency.	Achieved

[2] nsf.gov/about/budget/fy2017/pdf/56_fy2017.pdf
[3] nsf.gov/about/budget/fy2020/pdf/67_fy2020.pdf

Goal 7, Align Job Requirements with Competencies
Lead Organization: Division of Human Resource Management, Office of Information and Resource Management

Goal Statement
Ensure that employee job requirements are aligned with competencies and skills needed for the future.

Measure, Milestone, or Deliverable

Current and Upcoming Years		
FY	**Target**	
2021	In FY 2021, the Division of Human Resource Management will review, modernize, or eliminate 10 percent of the existing position descriptions requiring review.	
2020	In FY 2020, the Division of Human Resource Management will review, modernize, or eliminate 10 percent of the existing position descriptions requiring review.	
Reporting Year		
FY	**Target Summary**	**Result**
2019	In FY 2019, the Division of Human Resource Management will review, modernize, or eliminate 10 percent of the existing position descriptions requiring review.	Achieved
Previous Year		
2018	This goal was initiated in FY 2019 to replace a retired goal entitled *"Use Evidence to Guide Management Decisions,"* in which agency leaders used data-driven reviews to inform decision making.	

Strategic Alignment
Strategic Goal 3, Enhance NSF's performance of its mission. Objective 3.1, Human Capital: Attract, retain, and empower a talented and diverse workforce.

About This Goal
This goal incorporates principles from Renewing NSF, the agency operational reform plan initiated in FY 2017 in response to M-17-22, "Comprehensive Plan for Reforming the Federal Government."

Technological improvements have automated many tasks once performed by NSF staff. Requirements for NSF's administrative staff have evolved from the more traditional competencies related to general clerical and office tasks such as categorizing, processing, and tracking paper forms to more advanced competencies related to the use of multiple automated data systems. Additionally, the increasing number of proposals NSF receives, processed by the relatively stable number of program officers, means greater support is needed in data processing, data mining, analytics, and use of automated processes. Further, NSF is promoting transdisciplinary and convergent research and will need to ensure its current and future workforce can adapt to this convergent approach. NSF will review and realign its workforce to ensure its greatest resource–NSF staff–are equipped with the knowledge, skills, and abilities for success now and in the future. Ultimately, this will result in increased alignment between NSF's organizational structure, its core mission, and strategic plan.

NSF will improve performance and increase accountability by systematically reviewing the NSF workforce from top to bottom. This review will allow NSF to revise position descriptions (PDs) that are outdated or do not reflect current and future work responsibilities. This PD modernization effort will enable NSF to identify the skills needed in today's work environment and will establish more relevant opportunities for training and developing NSF's existing workforce, while also enabling hiring managers to better target recruitment and outreach efforts to obtain the highest caliber of external candidates.

Discussion of FY 2019 Results

In FY 2019, NSF first identified a pool of 400 PDs that had the potential for being either updated or eliminated, based on vacancy rate or consolidation with other types of positions. NSF then performed a more detailed review of the PDs to determine their relevance to the current ways in which NSF performs its mission, and decided whether the PD was a candidate for updating or eliminating based on the current workforce management approaches of the relevant offices and directorates. After confirming with managers to verify the outdated nature of the PDs, NSF eliminated 40 PDs in FY 2019.

FY 2020 and Planned FY 2021 Changes

NSF anticipates continuing this goal's direction, reaching a cumulative 30 percent of existing PDs reviewed by the end of FY 2021.

Goal 8, Improve User Interactions with IT Systems

Lead Organization: Office of the Chief Information Officer and the Division of Information Systems, Office of Information and Resource Management

Goal Statement

Streamline and simplify user interactions with IT systems and functions that support the merit review process, reducing non-value-added steps and reducing the time spent managing the proposal and award lifecycle.

Measure, Milestone, or Deliverable

Current and Upcoming Years		
FY	**Target**	
2021	By the end of FY 2021, 1. NSF IT systems will have been available 99.6 percent of the time, excluding 469 hours of planned downtime. 2. 90 percent of internal merit review functions will be accessible through a single portal. 3. 68 percent of external merit review functions will be accessible through a single portal.	
2020	By the end of FY 2020, 1. NSF IT systems will have been available 99.6 percent of the time, excluding 469 hours of planned downtime. 2. 86 percent of internal merit review functions will be accessible through a single portal. 3. 50 percent of external merit review functions will be accessible through a single portal.	
Reporting Year		
FY	**Target Summary**	**Result**
2019	By the end of FY 2019, 1. NSF IT systems will have been available 99.5 percent of the time, excluding 469 hours of planned downtime. 2. 72 percent of internal merit review functions will be accessible through a single portal. 3. 32 percent of external merit review functions will be accessible through a single portal.	1. Achieved 2. Achieved 3. Achieved
Previous Year		
2018	This goal was initiated in FY 2019 to replace a retired goal entitled *"Use Evidence to Guide Management Decisions,"* in which agency leaders used data-driven reviews to inform decision making.	

Strategic Alignment

Strategic Goal 3, Enhance NSF's performance of its mission. Objective 3.2, Processes and Operations: Continually improve agency operations.

About This Goal

This goal incorporates principles from Renewing NSF, the agency operational reform plan initiated in FY 2017 in response to M-17-22, "Comprehensive Plan for Reforming the Federal Government."

As part of the Renewing NSF principle to make IT Work For All, NSF will focus on leveraging state-of-the-art IT solutions to develop flexible tools and improve upon current service offerings in order to streamline and simplify the interactions that staff and the research community have with NSF's IT systems. This will help ensure that their time is spent on activities where they can add the most value instead of administrative activities, thereby helping the agency more effectively carry out its mission. As part of this effort, NSF will offer single points of access to both internal and external users for the IT services that they need, ensure that IT services have close to 100 percent availability with downtime for critical maintenance and service releases carefully coordinated to minimize disruption. In addition, NSF will utilize new IT solutions for automating non-value-added steps for users, through services like robotic process automation.

Discussion of FY 2019 Results
Target 1 was exceeded in all four quarters. Target 2 was exceeded, with 79 percent of internal merit review functions were accessible through a single portal at the end of the FY. Target 3 was met, with 32 percent of external merit review functions accessible through a single portal at the end of the FY.

FY 2020 and Planned FY 2021 Changes
NSF is planning to change the second and third targets to monitor the modernization of proposal submission functions. The set of functions that would be monitored has not been finalized at the time of publication, so specific targets will be developed in the second half of FY 2020 and published in the FY 2022 Plan/FY 2020 Report.