FY 2020 ANNUAL PERFORMANCE REPORT AND FY 2022 ANNUAL PERFORMANCE PLAN

This document combines NSF's FY 2020 Annual Performance Report and FY 2022 Annual Performance Plan (APP + APR = APPR). The goals for FY 2021 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.

In FY 2020, NSF tracked progress toward its three strategic goals using eight performance goals, one of which was a 2-year Agency Priority Goal (APG) in its first year of activity. Four of the eight achieved all or some of their targets or were on track throughout the year. Three goals were not achieved. One goal changed its measurement framework midyear. These results were published online in early 2021 and are republished here in their multi-year context.

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).

While we present an APP for FY 2022 in this document, NSF will be releasing a new Strategic Plan in February 2022, and at that time this plan will be retired for a new APP aligned to the new Plan. The FY 2021-2023 APPR will therefore also contain targets for 2022 which will supersede those published here.

Goal 1, Agency Priority Goal (APG): Expand Public and Private Partnerships

Lead Organizations: Directorate for Computer and Information Science and Engineering, Directorate for Education and Human Resources, Directorate for Geosciences

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 and Reporting Year		
FY	Target Summary	Result
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.	On track for 2021 achievement.
Previous Years		
FY	Target Summary	Result
2018-2019	Expand public and private partnerships to enhance the impact of NSF's investments and contribute to American economic competitiveness and security. 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.	Achieved FY 2017 baseline = 57 partnerships 70 partnerships in FY 2019, an increase of 23 percent over FY 2017 baseline.

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." Quarterly information on this goal can also be found on performance.gov.

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. NSF is a sought-after partner and the range of partnership opportunities present different needs, goals, and priorities. Developing partnerships requires significant time and intellectual capital, as well as strategic foresight.

Assessing and prioritizing partnership opportunities often occurs at the directorate/office level. Efficiencies could be better realized through greater harmonization across the agency. Consequently, pursuing partnership opportunities in a strategic and coordinated manner will allow NSF to accelerate discovery and translation of research to products and services, and enhances preparation of the future workforce to benefit society and grow the American economy.

Developing a consistent agency-wide partnerships strategy and improving internal processes will result in

partnerships that will allow NSF to maximize the scientific, economic, and societal impacts of its investments.

Discussion of FY 2020 Results
In FY 2020, the Partnerships pillar of Renewing NSF and the APG Implementation Team merged and expanded. The group is focusing on enhancing the strategic value of the Foundation's partnerships, and is using a milestone-oriented approach to report and assess progress in three areas: improving internal and external communications, implementing process improvements, and conducting strategic outreach. Quarterly reports for FY 2020 can be found on performance.gov (https://www.performance.gov/NSF).

FY 2021 and Planned FY 2022 Changes
NSF is on track for successful closeout of this goal in FY 2021. The team has produced a number of reports and internal tools to aid in partnership formation and management, which are being made available to all staff.

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**	
2022	NSF will obligate 100 percent of designated funding targets for all identified NSF-wide priority investments.	
2021		
Reporting Year		
FY	**Target Summary**	**Result**
2020	NSF will obligate 100 percent of designated funding targets for all identified NSF-wide priority investments.	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 2020 Results
Beginning in FY 2020, and on the recommendation of NSF's independent verification and validation team, the unit of measurement was adjusted to simplify quarterly tracking and the determination of achievement (from a qualitative approach, where the unit of analysis was a program, to a quantitative approach that tracks spending against a target). The goal now tracks the extent to which funding is obligated in accordance with the annual operating plan, and the percentages, by program, are reported to leadership each quarter.

FY 2021 and Planned FY 2022 Changes
In FY 2021, NSF continues to track the Big Ideas under this goal. NSF will include funding provided through the American Rescue Plan (ARP) under this goal, in keeping with the Administration's commitment to the effective implementation and stewardship of ARP funds, as outlined in M-20-21, issued by OMB on March 19, 2021. Internally, tracking of ARP will begin in FY 2021, but the 100 percent funding target will not be applied until FY 2022 since the funds are 2-year funds.

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. Starting in FY 2019 NSF has monitored the Big Ideas as the "key NSF-wide program investments" of this goal, and 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 makes the goal more quantifiable and meaningful.

Previous Years		
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
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

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	CEMMS	SaTC	CIF21	SEES	UtB	INFEWS	NSF INCLUDES	Risk and Resilience
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**
2022	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.
2021	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**
2020	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.	Not Achieved. 1 of 4 projects was behind schedule at the end of 2020.

Measure Information for All Years

Major Facilities Construction Project Monitoring Performance Trend, FY 2015-2020

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
Result	83%	67%	67%	100%	100%	75%		
Target	100%	100%	100%	100%	100%	100%	100%	100%

The Mid-scale target was first tracked in FY 2021; no trend information available.

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.

While this goal added a target in FY 2020 to track mid-scale research infrastructure projects, no such projects met reporting thresholds this fiscal year, so this target is not presented.

Discussion of FY 2020 Results

Of the four projects tracked as part of this goal in FY 2020, the Antarctic Infrastructure Modernization for Science (AIMS) project fell behind schedule by 10.3 percent, very slightly outside the 10 percent goal, due to delays associated with the COVID-19 pandemic; the project's timeline will be re-baselined in FY 2021. For more information about this and all other MREFC-funded construction projects, see the MREFC chapter of this Request.

FY 2021 and Planned FY 2022 Changes

No changes planned.

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

Goal Statement
Divisions and Offices will make timely proposal decisions.

Measure, Milestone, or Deliverable

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 5, Improve Review Quality, for more recent survey results).

Discussion of FY 2020 Results
NSF missed this goal in FY 2020 for several reasons. One factor is the decisions NSF made to prioritize award actions after the FY 2019 shutdown, which resulted in a backlog of decline actions at the end of that year. This backlog did not appear in the FY 2019 statistics but in the year in which the decision was processed, FY 2020. Another factor is the reprioritization of agency operations in response to the COVID-19 pandemic, including providing staff with flexibilities to adjust to the changed working environment and allowing for mid-year reprioritization of workloads. Consistent with previous years, when unique events such as the agency's FY 2017 relocation disrupted normal operations, agency leadership determined that

meeting this goal should be considered secondary to meeting more mission-critical responsibilities in the wake of the pandemic.

FY 2021 and Planned FY 2022 Changes
No changes planned.

Goal Change Statement
In FY 2021, the goal statement and target were reorganized to be more consistent in structure with the other goals, with a goal statement that is outcome-oriented and a target that is a full sentence describing a measurable achievement.

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**	
2022	Target to be set late 2021.	
2021	In FY 2021, assess the feasibility of and develop the strategy and plan for assessing and piloting activities to improve the quality of written reviews.	
Reporting Year		
FY	**Target**	**Result**
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.	1. Achieved. Result = 313 programs. 2. Achieved. Result = 14,434 reviewers.
Previous Years		
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.
	    a. 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.
	    b. 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

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.[2]
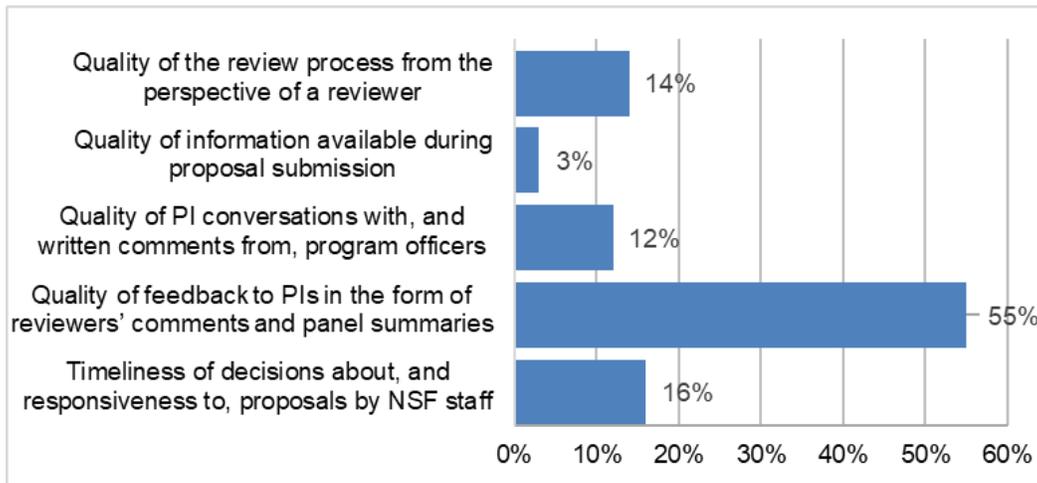
Discussion of FY 2020 Results
From the start of this goal in FY 2018 through September 30, 2020, at least 14,434 reviewers across at least 313 programs viewed the entire orientation video. Data capture issues meant that not all completed views of the video were captured, so both numbers are underestimates.

FY 2021 and Planned FY 2022 Changes
After the initial pilot period from 2018-2020, beginning in FY 2021, activities associated with this goal are focusing on assessing and piloting a wider range of activities to improve the quality of written reviews, such as automated scoring of review quality. This work will inform the development of a new target in future years, ensuring that the new target is aligned with the agency's new strategic plan.

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[2] 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**	
2022	Target to be set late 2021.	
2021	All NSF leaders will participate in culture change activities.	
Reporting Year		
FY	**Target**	**Result**
2020	All NSF leaders will participate in culture change activities.	Not Achieved Result = 96.2 percent.
Reporting Year		
FY	**Target**	**Result**
2019	In FY 2019, 100 percent of NSF leaders will participate in culture change activities.	Not Achieved
2018	By September 30, 2018, ODI will conduct the new IQ process with four organizational units. Improve the four NSF organizational units' New IQ Self-Survey Scores by five percent above established baseline.	Achieved Achieved
2017	By September 30, 2017, ODI will conduct the new IQ process with three additional organizational units. Improve the three NSF organizational units' New IQ Self-Survey Scores by seven percent above established baseline.	No targets achieved
2016	By September 30, 2016, ODI will conduct the new IQ process with two NSF organizational units. 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 and perform two compliance desk reviews under antidiscrimination laws.	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 ensuring 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.

Beginning in 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.

Discussion of FY 2020 Results
NSF continued in FY 2020 to define "culture change activities" as participation in anti-harassment and anti-bullying training, and consider the target reached if all managers and executives on board more than 30 days complete the training by the end of the fiscal year[3]. NSF trained 278 of 289 managers and executives by the end of FY 2020. While not a target of the goal, NSF can also report that 1347 of 1393 (96.7 percent) of nonmanager employees received the same training. This shortfall of the 100 percent target reflects two issues that arose during the year. First, a software upgrade let to an incompatibility between NSF software and the third-party site that hosted the training videos, rendering the videos inaccessible for most of the last quarter of the year. Second, by the time the site was restored in Q4, OMB had issued M-20-34, "Training in the Federal Government." NSF therefore limited the anticipated outreach related to this goal while it took steps to ensure compliance with the OMB memo.

FY 2021 and Planned FY 2022 Changes
NSF is currently engaged in a number of high priority activities that relate directly to the diversity and inclusion activities encompassed by this goal and that will inform the development of the target for FY 2022. These activities include developing the agency's response to the *Executive Order On Advancing Racial Equity and Support for Underserved Communities Through the Federal Government*, issued on January 20, 2021, addressing the FY 2021 Management Challenge "Increasing Diversity in Science and Engineering Education and Employment" identified by the NSF Office of Inspector General, and addressing recommendations for increasing STEM talent included in the *Vision 2030* report from the National Science Board.

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"[4] status. Starting in FY 2016, this goal focused on inclusion, and New IQ workshops[5] were made available to NSF staff. The focus on leadership represents another new direction for this goal in FY 2019, when 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.

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[3] For a full explanation of this approach and its rationale, see the FY 2019 Performance Report at
www.nsf.gov/about/budget/fy2021/pdf/68_fy2021.pdf.
[4] www.nsf.gov/about/budget/fy2017/pdf/56_fy2017.pdf
[5] www.nsf.gov/about/budget/fy2020/pdf/67_fy2020.pdf

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[5]) or the FY 2018/FY 2020 APPR in the FY 2020 NSF Budget Request (New IQ[6]).

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**	
2022	Target to be set late 2021.	
2021	Eliminate 100 obsolete Position Descriptions in FY 2021.	
Reporting Year		
FY	**Target Summary**	**Result**
2020	In FY 2020, the Division of Human Resource Management will review, modernize, or eliminate 10 percent of the existing position descriptions requiring review.	Not applicable
Previous 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
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. Further, NSF is promoting transdisciplinary and convergent research and will need to ensure its current and future workforce can adapt to this convergent approach. As technological systems increase in complexity, greater support is needed in data processing, data mining, analytics, and use of automated processes. 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 2020 Result
In FY 2019, NSF had 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. The 10 percent target was measured against that denominator in FY 2019. In mid-FY 2020, related to a staff transition and pandemic-related work reprioritization, NSF revisited this limitation and determined that limiting the review to 400 predefined PDs no longer effectively supported the goal (Ensure that employee job requirements are aligned with competencies and skills needed for the future) or the priority from the Renewing NSF effort that motivated the goal (Adapting the NSF Workforce to the Work). Rather than continue tracking and reporting against the previous measure, NSF switched to a broader review of several thousand NSF position descriptions. This rendered the 10 percent target inapplicable since it was devised in relation to a smaller denominator.

FY 2021 and Planned FY 2022 Changes
The target of 100 position descriptions eliminated was established early in FY 2021, and a new target will be established for FY 2022 in conjunction with the development of the new strategic plan for the agency.

Goal Change History
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 in the IT and HR domains. As noted in the discussion of the FY 2020 result, a percentage-based target was used initially, and in FY 2020 a more straightforward numerical target was adopted.

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**
2022	Target to be set late 2021.
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. 86 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.

Reporting Year		
FY	**Target Summary**	**Result**

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.
		1. Achieved
		    Result = 99.8 percent
		 2. Not Achieved
		    Result = 79 percent
		 3. Not Achieved
		    Result = 41 percent

Previous Year		
FY	**Target**	**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
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 2020 Result
Target 1, measuring system uptime, was exceeded. Targets 2 and 3 encompass a multi-year effort to establish single portals for NSF's internal and external merit review (MR) functions, and monitor software development processes. The effort began in FY 2017, and set multi-year targets for 86 percent (25 of 29) of internal MR functions and 64 percent (14 of 22) of external MR functions to be accessible via single portals by the end of FY 2021. Intervening-year targets were established to monitor the overall progress of the effort and ensure it remained on track. In FY 2020, IT development resources were reprioritized during the year to establish capabilities needed to maintain NSF operations through the pandemic. This reprioritization resulted in fewer resources being devoted to the development of these internal and external portals, as is reflected in the missed targets for FY 2020.

FY 2021 and Planned FY 2022 Changes
An error in the FY 2021 APP published the wrong value for target 2. The correct value (86 percent) for FY 2021 was recently identified, and the correct value (86 percent) is stated above.

A new goal framework and associated targets will be established for FY 2022 in conjunction with the development of the agency's new strategic plan.