

FY 2019 NSF STRATEGIC OBJECTIVE PROGRESS UPDATES

In FY 2019, the National Science Foundation conducted Strategic Reviews (SRs) of the six Strategic Objectives in its 2018-2022 Strategic Plan in response to the requirement of the GPRA Modernization Act 2010 Section 1116(f). Table 1 summarizes the analyses performed and the outcomes to date of each SR. The table also provides NSF’s determination as to whether performance towards an Objective is making noteworthy progress, should pursue focused improvement, or neither.

FY 2019 Process and Modifications

In FY 2019, NSF streamlined its SR process to ensure completion in a timeframe that could inform FY 2021 budget development. In an approach informed by Enterprise Risk Management (ERM) principles, topics were chosen to support and inform two areas where process improvements were immediately needed: development of the new OMB dashboard to highlight agency performance, and application of lessons learned during the lapse to our operations and towards maturation of the NSF model for major facilities oversight. NSF did not conduct a review in an area relevant to each of its Objectives, although each Review applied to more than one Objective.

For the FY 2018 Objective rankings, NSF’s Performance Improvement Officer (PIO) assessed the maturation stage of each SR’s implementation plans. No evidence was found that would warrant changes to those rankings in FY 2019.

Strategic Review Results

Strategic Objectives	Relevant SRs in FY 2018	Relevant SRs in 2019	Rankings
<u>1.1 Knowledge</u>	Streamlining, standardizing, and simplifying processes and practices*	Merit Review Report Modernization Funding Continuity for Major Facilities Portfolio	Progressing
<u>1.2 Practice</u>		Merit Review Report Modernization	Progressing
<u>2.1 Societal Impacts</u>	Expanding and deepening public and private partnerships*	No review in 2019	Noteworthy Progress
<u>2.2 STEM Workforce</u>	SR of NSF INCLUDES to illustrate a Learning Agenda		Progressing
<u>3.1 Human Capital</u>	Adapting NSF’s work and workforce*		Area of Focus
<u>3.2 Processes and Operations</u>	Making IT work for all*	Merit Review Report Modernization Funding Continuity for Major Facilities Portfolio	Progressing

*A Renewing NSF initiative. For more information on Renewing NSF, see the Special Analyses chapter.

Strategic Review of Merit Review Report Modernization

Strategic Objective 1.1: Knowledge: Advance knowledge through investments in ideas, people, and infrastructure.

Strategic Objective 1.2: Practice: Advance the practice of research.

Strategic Objective 3.2: Processes and Operations: Continually improve agency operations.

The strategic review explored evidence to inform agency planning and decision making and a strategy to improve the Merit Review Report (MRR).¹

To ensure the integrity, quality, accountability, and transparency of its policies and processes, NSF prepares and submits an annual MRR to the National Science Board. It contains a statistical summary of the operation of the merit review process, including information on the number of proposals submitted, funding rates, average award sizes and durations, and information about the diversity of proposers, awardees and reviewers. In July 2018, the NSB Committee on Oversight asked NSF to examine how the Merit Review Report could be made more useful with a goal of providing greater accountability, openness, and transparency about the merit review process and enabling continuous assessment and improvement of the merit review process.

Three Key Analytical Questions were posed:

1. How can we broaden understanding of the merit review process's correspondence to NSF's mission and increase the value of information about it to stakeholders?
2. How can NSF inform and empower key stakeholders by revising electronic access to Merit Review Report content?
3. How can NSF leverage existing resources to sustainably maintain an improved online version of Merit Review Report content?

The SR team consulted a broad range of internal stakeholders, examined a similar effort undertaken by the NSF National Center for Science and Engineering Statistics (NCSES), and reviewed data from existing merit review surveys of PIs and reviewers. The team found that many NSF Program Officers are unfamiliar with the Merit Review Report and its value as a resource when communicating with their PI communities. Some program officers reported using the report to disabuse communities of misconceptions about the review process. For example, a major misconception evident in recent PI surveys is that a majority of PIs believed that the proposal funding rate was 10 percent or lower, when it has historically been about 22 percent Foundation-wide.

The strategic review team concluded that a scoping feasibility study is necessary to better inform the Merit Review Report modernization effort, and that a coherent communications strategy would improve understanding and the usefulness of the Merit Review Report contents.

Activities after the SR

In response to the Strategic Review findings and recommendations, NSF is engaging in a feasibility study to inform plans for subsequent steps of the modernization activities. In consultation with key stakeholders, especially the National Science Board Committee on Oversight, NSF will develop a prioritized approach to creating a Merit Review dashboard that provides access to detailed information about NSF's merit review process. In concert with the development of the dashboard, NSF will implement a coordinated communications plan aimed at informing internal and external stakeholders about the Merit Review report and related electronic resources.

¹ Copies from 1996 forward are available online at www.nsf.gov/nsb/publications/pubmeritreview.jsp.

Strategic Review of Funding Continuity for NSF's Major Facilities Portfolio

Strategic Objective 1.1: Knowledge: Advance knowledge through investments in ideas, people, and infrastructure.

Strategic Objective 3.2: Processes and Operations: Continually improve agency operations.

This Strategic Review focused on the evaluation of agency practices in funding NSF's Major Facilities. Specifically, it incorporated lessons learned from the maturation of the recently-created Chief Officer for Research Facilities (CORF) position and from the impact of the FY 2019 lapse in appropriations on the major facilities portfolio.

NSF's portfolio of major facilities represents a substantial fraction of its total budget, including construction and operations of facilities at sites throughout the U.S. and around the world. Oversight of activities related to these facilities is led by program officers (PO) in distinct directorates, in close collaboration with multiple divisions within the Office of Budget, Finance, and Award Management (BFA). NSF has traditionally managed major facilities as discrete programs in their relevant directorates, and the divisions within those directorates, with summary data collected and presented only once a year as part of the Congressional Budget Request. Day-to-day oversight is generally provided at the division level by POs, in coordination with other members of an NSF Integrated Project Team. The distributed nature of this approach requires extensive coordination of oversight activities across the agency.

Two emerging elements in NSF's Major Facilities management inspired this review:

1. As mandated by Congress in the 2017 American Innovation and Competitiveness Act (AICA), the CORF, in the Office of the Director, is responsible for overall full life-cycle oversight of NSF's Major Facilities.
2. The lapse in appropriations from December 22, 2018 to January 25, 2019 highlighted several of the challenges involved in facilities oversight and financial management: how NSF ensures that appropriate facility funding obligations are in place throughout the fiscal year, how NSF management is able to quickly and accurately monitor the financial status of each facility to ensure that adequate funding is available, and how the funding is distributed to the facilities on a routine basis.

Following the resumption of NSF operations in January 2019, this Strategic Review analyzed lessons learned and considered potential improvements in facilities funding and oversight practices that would be applicable throughout the fiscal year to ensure funding continuity across all of NSF's Major Facilities. The team concluded that targeted improvements in NSF's financial management of its major facilities portfolio would enhance the stability of operations and decrease risks to NSF's mission. Specifically, a centralized and reliable method to provide timely and accurate financial information for all of the major facilities is needed in order to better inform agency-level decision making on a continual basis. In addition, NSF needs agency-wide guidelines for how funds should be routinely obligated to major facilities operations and maintenance (O&M) awards in order to support on-going science activities and to improve financial stability for the recipients at key operational milestones throughout the year. These guidelines must consider workload impacts and be flexible enough to address the diversity of facilities and funding circumstances across NSF divisions.

Activities after the SR

In response to the Strategic Review findings and recommendations, NSF issued a cross-directorate instruction memo on August 6th regarding the requirements for facility funding at potential discontinuity points in federal funding (e.g., end of Fiscal Year, end date of short-term Continuing Resolutions). A major facilities funding health "dashboard" for internal use is under development.