

**U.S. HOUSE OF REPRESENTATIVES
COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY**

HEARING CHARTER

A Review of Recommendations for NSF Project Management Reform

Thursday, February 4, 2016
9:30 a.m. –11:30 a.m.
2318 Rayburn House Office Building

Purpose

On Thursday, February 4, 2016, the Research & Technology and Oversight Subcommittees will hold a joint hearing on recommendations made in a recent National Academy of Public Administration (NAPA) report *National Science Foundation Use of Cooperative Agreements to Support Large Scale Investment in Research*.¹ The hearing will review recommendations made by NAPA on reforming the National Science Foundation’s (NSF) project management for large-scale projects as well as receive testimony from the NSF and NSF Inspector General on their response to these recommendations. On February 3, 2015, the Committee held a hearing on, “NSF’s Oversight of the NEON Project and Other Major Research Facilities Developed Under Cooperative Agreements.”²

Witnesses

- **Ms. Cynthia Heckmann**, Project Director, National Academy of Public Administration
- **Dr. Richard Buckius**, Chief Operating Officer, National Science Foundation
- **Ms. Allison Lerner**, Inspector General, National Science Foundation

Background

The National Science Foundation (NSF) is an independent federal agency established in 1950 “to promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense; and for other purposes.”³ In support of that mission, the NSF frequently funds the development and construction of large-scale, multi-user scientific facilities through awards made under “cooperative agreements.” Cooperative agreements are a form of financial assistance for projects that require substantial involvement of the awarding agency,

¹ “National Science Foundation Use of Cooperative Agreements to Support Large Scale Investment in Research, “National Academy of Public Administration. Available at:

http://napawash.org/images/reports/2015/NSF_Phase_2_Comprehensive_Report.pdf

² “NSF’s Oversight of the NEON Project and Other Major Research Facilities Developed Under Cooperative Agreements,” <https://science.house.gov/legislation/hearings/subcommittee-oversight-and-subcommittee-research-and-technology-joint-hearing>

³ NSF Legislative History, Available at: <https://www.nsf.gov/about/history/legislation.pdf>

beyond routine monitoring or technical assistance.⁴ The NSF does not operate its own research facilities. The NSF is currently funding several cooperative agreements, including the construction of the Large Synoptic Survey Telescope, the Daniel K. Inouye Solar Telescope, and the National Ecological Observatory Network. These 5-10 year construction projects range from \$344 million to \$473 million in total project cost.⁵

In May 2015, the NSF and National Science Board (NSB) commissioned NAPA to conduct a study reviewing the NSF's use of cooperative agreements to support the development, construction and operations of large-scale research facilities. The NSF and NSB commissioned the report in response to concerns raised by Congress, the NSF OIG and other stakeholders regarding the NSF's management and oversight of cooperative agreements, and proper stewardship of federal funds.

In the study, the Academy was asked to: (1) assess how cooperative agreements are being used at NSF; (2) identify other funding mechanism options; and (3) determine how NSF can improve the mechanisms used to support large-scale investment in science and technology. The eight-month study also investigated how a small number of comparable agencies use cooperative agreements and other procurement instruments.⁶

On December 17, 2015, NAPA released its final report. The study committee found that while cooperative agreements are an appropriate mechanism for NSF to support large-scale research facilities, several reforms would strengthen the oversight of these projects. The panel found that the critical factor for the success of these types of projects is a combination of project management discipline, a rigorous review process, and capacity and capability of a skilled workforce to carry out and oversee project management responsibilities. The study panel analyzed practices at the National Aeronautics and Space Administration (NASA), Department of Energy (DOE) Office of Science to provide lessons learned and identify practices that could be adopted by NSF.

The study offered 13 specific recommendations that appear in chapters 3, 4, and 6 of the report:

Business Practices: Cost Analysis, Contingency, and Management Fee

The panel made four recommendations for bolstering NSF's ability to detect and address potential cost issues prior to release of award funds, strengthening internal controls of

⁴ Federal Grant and Cooperative Agreement Act of 1978, Public Law 97-258

⁵ FY2016 Major Research Equipment and Facilities Construction Budget Request. Available at: https://www.nsf.gov/about/budget/fy2015/pdf/26_fy2015.pdf

⁶ "Work in Progress: National Science Foundation Use of Cooperative Agreements to Support Large Scale Investment in Research," National Academy of Public Administration. Available at: http://napawash.org/images/WorkInProgress/NSF_Work_in_Progress.pdf

contingency funds, improving cost estimating and rigor in the process, and eliminating the potential for inappropriate use of federal funds through management fees.

- NSF should require that exceptions to the recommendations from pre-award cost analyses conducted by Cost Analysis and Audit Resolution, be reviewed by the Large Facilities Office (LFO) and forwarded to the Chief Financial Officer (CFO) for a final determination. The results of the CFO's decision should be documented in writing and shared with the Major Research Equipment and Facilities (MREFC) Panel prior to release of award funds. (3.1)
- NSF should retain control of a portion of an award recipient's contingency funds and distribute them with other incremental funds as needed. (4.1)
- NSF should change current language in the Large Facilities Manual so that it is clear that award recipients are expected to follow the guidance in the Government Accountability Office's Cost Estimating and Assessment Guide and Schedule Assessment Guide when developing cost and schedule estimates. (4.2)
- NSF should eliminate the practice of including a management fee in cooperative agreements in future projects. (4.3)

Planning, Oversight, and Accountability: Roles and Responsibilities

The panel made two recommendations for improving transparency and adding more rigor in how the NSF and NSB work together to enable mission accomplishment and perform management oversight, and to clarify and codify roles, responsibilities, and working relationships.

- NSF and NSB should establish and publish a joint NSF-NSB duties and responsibilities document institutionalizing roles and addressing key working relationships. (6.1)
- NSF should re-scope the role/duties of the MREFC Panel and amend the Panel's charge to include status update reviews of projects in the development and construction phases, focusing on cost, schedule, and performance. (6.2)

Project Management Knowledge and Skills

The panel made seven recommendations for ensuring that external review panels and the NSF Director are being advised by individuals with expertise in managing large projects and cost estimating, as well as bolstering the authority of the Large Facility Office (LFO) to help manage projects across the Foundation, and requiring that project managers have the skill capabilities to successfully manage projects.

- NSF should identify requirements for project management and financial management expertise related to large facilities projects and add the requirements to the criteria for selection of external reviewers. (6.3)
- NSF should establish a Federal Advisory Committee Act (FACA) advisory committee for the Director to use as a sounding board for objective insight on large research projects. (6.4)
- NSF Director should (1) authorize the LFO to hire two additional FTEs and (2) direct the MREFC Panel charter be revised to change the status of the Head of the LFO from a nonvoting member to a full member with voting rights on the Panel. (6.5)
- NSF should evaluate how it develops and uses the NSF Facility Plan (processes, form and format) and how it aligns with the agency's current budget and strategic planning processes. (6.6)
- NSF should identify project management skill requirements by role and develop/implement required corollary role-specific project management training/workshops to ensure that award recipients have the requisite project management experience and knowledge to lead a MREFC project. (6.7)
- NSF should require award recipient project managers be certified in project management. NSF should also specify the minimum project management experience thresholds for project positions in the terms and conditions of the cooperative agreement. (6.8)
- NSF should formally establish communities to share best practices and implement a "lessons learned" requirement for all MREFC projects. (6.9)