



NATIONAL SCIENCE FOUNDATION
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NSF 18-013

Dear Colleague Letter: Request for Information on Mid-scale Research Infrastructure

October 6, 2017

Overview

This Request for Information (RFI) is issued in response to the American Innovation and Competitiveness Act (AICA, Public Law No. 114-329), Section 109. NSF seeks information on existing and future needs for mid-scale research infrastructure projects from the US-based NSF science and engineering community.

Definitions

For the purposes of this RFI, NSF defines Research Infrastructure (RI) as any combination of facilities, equipment, instrumentation, computational hardware and software, and the necessary human capital in support of the same. This includes upgrades to existing major research facilities. Mid-scale RI requires an investment that falls between the maximum award funded by NSF's Major Research Instrumentation Program (MRI; \$4 million) and that of a major multi-user research facility project (\$100 million or more), as defined in AICA.

Background

Enabling Mid-scale Research Infrastructure is one of NSF's Ten Big Ideas. Given priorities in the current budget climate, NSF has been able to fund smaller mid-scale RI projects through its individual scientific directorates. Instrumentation and equipment up to \$4 million has been routinely funded through the MRI program. Large-scale RI projects have been successfully funded through the Major Research Equipment and Facilities Construction (MREFC) Account. In November 2016, the eligibility threshold for potential inclusion in the MREFC Account was lowered from approximately a \$100 million Total Project Cost (TPC), i.e., total cost to NSF, depending on the directorate, to a fixed \$70 million TPC. This adjustment was an initial step to support potential priorities in mid-scale science and infrastructure.

Objective

The purpose of this RFI is to assess the needs for mid-scale RI from the US-based NSF science and engineering community in order to develop a strategy, in accordance with the AICA. The AICA requires NSF to "evaluate the existing and future needs, across all disciplines supported by the Foundation, for mid-scale projects" and "develop a strategy to address the needs." This RFI focuses on mid-scale research infrastructure projects with an anticipated NSF contribution of between \$20 million and \$100

million towards construction and/or acquisition. This range is of primary interest to NSF as it will help us anticipate the potential impact of lowering the MREFC threshold as well as identifying promising projects that remain difficult to address within program budgets due to the comparatively large investment needed in a relatively short period of time. After the submission period ends, and the information is analyzed, NSF will summarize the high-level insights drawn from this analysis for the science community and internal NSF use. Please note that funding for mid-scale RI projects in this range of investment has not been identified; nor does this RFI imply an intent on the part of NSF to issue a call for proposals. In addition, responses to this RFI do not constitute any commitment on behalf of the submitters or their institutions to submit a proposal or carry out an RI project.

What We Are Looking For

Submissions should identify ideas for mid-scale RI projects in the following format:

1. Concept title and description. The description should include the potential for any inter-agency or international partnerships and contributions that are part of the TPC;
2. Point of contact (in case additional clarification is needed);
3. Contact of your Authorized Organizational Representative. Note, this contact will receive a copy of the survey submission;
4. New, transformative science or scientific breakthroughs to be enabled by project;
5. Evidence of research community support (list of reports, decadal surveys, other publications);
6. Rough order of magnitude TPC (fully loaded, i.e. inclusive of indirect and/or Facility and Administration costs) with a percentage breakdown by the following major budget categories: (1) physical components including structures, equipment, instrumentation, and hardware; (2) other computational resources, including software and firmware; and (3) human capital;
7. Concept of operations: anticipated duration and level of federal and non-federal support.

Who should respond

Researchers, users, and leaders at US based colleges and universities as well as non-profits who are well positioned to advance and support a mid-scale project throughout its lifecycle.

How should you respond

To submit your concept, please use this link: https://www.surveymonkey.com/r/midscale_2017 and complete the online questionnaire no later than December 8, 2017. Please use the email contact field provided to enable a courtesy copy of your response to your Authorized Organizational Representative or institutional leadership to ensure institutional awareness of your submission.

What We Will Do with the Information

All information submitted is subject to the Privacy Act. Summary information would be presented in aggregate form as part of the high-level analysis shared publicly.