

National Science Foundation (NSF) Comments on Two Reports Concerning the Experimental Program to Stimulate Competitive Research (EPSCoR): the National Academy of Sciences (NAS) and the Science and Technology Policy Institute (STPI)¹

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In 1978, the National Science Board (NSB) established the *Experimental Program to Stimulate Competitive Research (EPSCoR)*. Recently, EPSCoR has been the topic of two reports calling for change. NSF thanks NAS and STPI for their recommendations and offers brief comments in response.

NAS Report on EPSCoR

(<http://www.nap.edu/catalog/18384/the-experimental-program-to-stimulate-competitive-research>)

This report was mandated by Congress under the America COMPETES Reauthorization Act of 2010² with funding from the NSF. It was completed in 2013.

NSF's Comments on NSF Recommendations

The principal NAS recommendation was "... that the federal government continue to promote the development of research capacity in every state so that all citizens across the nation have the opportunity to acquire the postsecondary education, skills, and experience they need to pursue productive and successful careers in science, technology, engineering, and mathematics (STEM) fields and to contribute fully to the nation's research enterprise."

The NAS's seven sub-recommendations can be categorized into four topical areas: Evaluation, Merit Review Process, Program Focus, and Program Eligibility. The recommendations and NSF's comments are briefly summarized below.

1. *Evaluation: The evaluation process conducted during and after an EPSCoR project's implementation should be made more rigorous by developing and implementing effective third-party evaluation design.*

Working with NSF's new office of Evaluation and Assessment Capability (EAC), EPSCoR will strengthen its program-level evaluations. It has invested in external, independent project-level evaluations for its Research Infrastructure Improvement (RII) grants since 2005.

2. *Merit Review Process: the proposal review for prospective EPSCoR projects should be made more rigorous to ensure that reviews of the scientific merit of the proposals are conducted by the most highly qualified panels of experts in the field of study. Scientific merit should be the first consideration in any assessment of a proposal's strength and value. Specially, all proposals should be reviewed in a two-step sequential process: first, review of the proposal's scientific*

¹ Committee to Evaluate the Experimental Program to Stimulate Competitive Research (EPSCoR) and Similar Federal Agency Programs; Committee on Science, Engineering, and Public Policy; Policy and Global Affairs; National Academy of Sciences; National Academy of Engineering; Institute of Medicine. *The Experimental Program to Stimulate Competitive Research*. Washington, DC: National Academies Press, 2013; Brian L. Zuckerman, et al, Science & Technology Policy Institute. *Evaluation of the National Science Foundation's Experimental program to Stimulate Competitive Research (EPSCoR): Final Report*. Washington, DC: Institute for Defense Analyses, 2015.

² America COMPETES Reauthorization Act of 2010 (111th Congress, 2009-2010, April 22, 2010).

merit- a “science score”; and second, a review of the proposal’s potential (state, agency, societal) impacts- a “program score”.

Like all NSF programs, EPSCoR continues to use the same gold-standard merit review process. It relies on subject-matter-expert reviewers and panelists who employ the two NSF merit review criteria – intellectual merit and broader impacts — in the evaluation of all EPSCoR proposals. NSF is considering the addition of post-award site visits and other mechanisms to enhance the success of its largest awards.

3. *Program Focus: The program should concentrate on its core elements of research excellence through competitive processes and capacity for post-secondary training in science, technology, STEM training; EPSCoR programs should be restructured to combine the beneficial aspects of current programs; and remove experimental from its name as it is a misnomer.*

NSF will concentrate on research excellence, competitive processes, and STEM training. NSF does not plan to change the program’s name, but rather encourage each jurisdiction to “experiment,” that is, develop flexible and competitive mechanisms to support research excellence, junior and senior faculty, and postsecondary education in STEM.

4. *Program Eligibility: develop a framework for eligibility and graduation; and develop a re-application process based on the new framework.*

NSF will work with the other federal agencies on the EPSCoR Interagency Coordinating Committee to consider the models for eligibility and graduation, including the option of using median funding level.

STPI Study of NSF EPSCoR

<https://www.ida.org/~media/Corporate/Files/Publications/STPIPubs/2015/P-5221.ashx>

In 2011, NSF asked STPI to evaluate the NSF EPSCoR Program. The study was completed in 2014.

NSF’s Comments on STPI Recommendations

STPI offered two sets of recommendations. The first set responds to NSF’s request for recommendations to better target available funding to achieve the largest incremental benefit to jurisdictions’ research capacity. The second set recommended certain changes in EPSCoR programmatic elements. The recommendations addressing NSF’s request stated that:

1. *NSF should develop an explicit definition of “undue concentration”(including whether it applies to NSF or total Federal research funding), the implementation of which might require legislative action.*

NSF has determined that the primary eligibility parameter should be NSF funds only and not federal research and development dollars. Unlike other federal support, NSF funds all areas of science and engineering, and this should be taken into account when determining the eligibility criteria.

2. *NSF should ensure that the EPSCoR program design, funding levels, and eligibility indication(s) reflect the new explicit definition of “undue concentration”, which might require legislative action.*

NSF will explore the use of specific indicators of “undue concentration” in collaboration with other federal agencies on the EPSCoR Interagency Coordinating Committee and ensure that EPSCoR’s program design, funding levels, and eligibility criteria reflect the indicators.

Eligibility

The NAS and STPI reports provided an opportunity for NSF to re-examine EPSCoR’s eligibility criteria. Accordingly, NSF proposes to work within the EPSCoR Interagency Coordinating Committee to consider the different models such as median funding level. Additionally, the Commonwealth of Puerto Rico and the Territories of Guam and the U.S. Virgin Islands will continue to be eligible to participate in EPSCoR, and NSF is prepared to discuss the eligibility of the District of Columbia.