



NSF EPSCoR
ADVANCING GEOGRAPHIC DIVERSITY IN STEM



NSF Response to the Recommendations from the *Envisioning the Future of NSF EPSCoR Report*

Sandra Richardson
NSF EPSCoR Section Head

EPSCoR Office Hour Session
November 15, 2023

Charge for CEOSE Subcommittee on Future of EPSCoR

The Committee's work was organized around **two major motivating questions**:

1

What does the **available evidence** tell us about the effectiveness of NSF EPSCoR's current investment strategies, both individually and collectively, in advancing scalable, jurisdiction-wide solutions and best practices to achieve the program's goals?

2

Based on the answers to the question above, are there **novel strategies** or changes to the current strategies that would enable NSF EPSCoR and its jurisdictional partners to more effectively achieve its mission?

The report generated **8 recommendations** for improvement and **19 related suggestions** for how to accomplish them.



Recommendation 1 - Ecosystem Approach to Investments

*NSF should **partner with other federal agencies** to create new programs for coordinated and long-term strategic investment that will **ensure capacity and support** from the basic science questions through commercialization, job creation, and workforce support, while **also expanding and using the internal EPSCoR co-funding mechanism** and considering programs to encourage **collaboration between NSF EPSCoR and non-NSF EPSCoR jurisdictions**.*

NSF EPSCoR Response

- Collaborations via Federal EPSCoR Interagency Coordination Committee (e.g., launch of NSF EPSCoR Research Fellows: @NASA)
- ~30% of FY23 EPSCoR budget allocated to co-funding, compared to ~16% five yrs ago
- Launch of [NSF 23-587](#) (E-CORE RII)
 - supports building capacity in targeted research infrastructure cores that underlie the jurisdiction's research ecosystem
 - opportunities to develop and grow new jurisdictional networks (or leverage existing networks)
 - enhance partnerships with other federal agencies and other entities in the research ecosystem



Recommendation 2 - Increased Integration of NSF EPSCoR

*NSF should **adopt a more holistic view of NSF EPSCoR** with a greater integration of NSF EPSCoR **across the Foundation** and more cross-fertilization between the NSF EPSCoR Office and the balance of the Foundation and **focus on developing internal programs that are more inclusive of the strengths and scientific priorities of NSF EPSCoR jurisdictions.***

NSF EPSCoR Response

- **EPSCoR Strategy, Engagement, and Consultation Steering Committee**
 - Facilitates, prepares, and tracks implementation of EPSCoR provisions in CHIPS & Science Act (2022)
 - Collaborated with NSF Agency Priority Goal External Engagement team to host a listening session for the EPSCoR PI community to document inclusivity needs, goals, and next steps
 - Developed implementation plan to include strategies to prioritize enhancement and development of programs and increased outreach & engagement in EPSCoR jurisdictions
- **Launch of [NSF 23-588](#) (E-RISE RII)**
 - Focuses on sustainability of jurisdictions' research capacity & competitiveness in scientific topical area
 - Can be leveraged in the preparation of competitive submissions to non-EPSCoR funding opportunities
 - Prepares teams of researchers in EPSCoR jurisdictions to prepare meritorious submissions for NSF priority areas, Center-scale opportunities, regional transformation activities, and other state or federal funding opportunities



Recommendation 2 (cont.) - Increased Integration of NSF EPSCoR

NSF should adopt a more holistic view of NSF EPSCoR with a greater integration of NSF EPSCoR across the Foundation and more cross-fertilization between the NSF EPSCoR Office and the balance of the Foundation and focus on developing internal programs that are more inclusive of the strengths and scientific priorities of NSF EPSCoR jurisdictions.

NSF EPSCoR Response (cont.)

NSF 23-221Y, GRANTED

- Supports generation of scalable models that mitigate structural barriers and expand research capacity and competitiveness.
- Aims to diversify the project leadership, institutions, ideas, and approaches that NSF funds



Recommendation 3 - Diverse Talent Recruitment and Retention

*NSF should expand investments to **grow the critical mass of highly competitive and capable faculty, technical staff and students in NSF EPSCoR jurisdictions and develop new grant programs that will help build nationally competitive, sustainable research, and promote collaborations within and across NSF EPSCoR jurisdictions and beyond.***

NSF EPSCoR Response

- **Implementation of CHIPS & Science Act provisions in Sec 10325**
- **Multiple new NSF programs (e.g., [NSF 23-587](#) (E-CORE RII), [NSF 23-588](#) (E-RISE RII), [NSF 23-221Y, GRANTED](#), [TIP Directorate programs](#))**



Key NSF EPSCoR Highlights from CHIPS & Science Act

(SEC. 10325: EXPANDING GEOGRAPHIC AND INSTITUTIONAL DIVERSITY IN RESEARCH)

- **Target 1:** Authorization of a gradual increase in funding for institutions in EPSCoR jurisdictions.

FY23	FY24	FY25	FY26	FY27	FY28	FY29
15.5%	16%	16.5%	17%	18%	19%	20%

- **Target 2:** Authorization of a gradual increase in funding of scholarships, graduate fellowships and traineeships, and postdoctoral awards to support EPSCoR institutions.

FY23	FY24	FY25	FY26	FY27	FY28	FY29
16%	18%	20%	20%	20%	20%	20%



Key NSF EPSCoR Highlights from CHIPS & Science Act

(SEC. 10325: EXPANDING GEOGRAPHIC AND INSTITUTIONAL DIVERSITY IN RESEARCH)

Target 3: Prioritize funding and activities that enable sustainable growth in the competitiveness of EPSCoR jurisdictions, including—

- (i) infrastructure investments to build research capacity in EPSCoR jurisdictions;
- (ii) scholarships, fellowships, and traineeships within new and existing programs, to promote the development of sustainable research and academic personnel;
- (iii) partnerships between eligible organizations in EPSCoR and non-EPSCoR jurisdictions, to develop administrative, grant management, and proposal writing capabilities in EPSCoR jurisdictions;
- (iv) capacity building activities for ERIs, HBCUs, TCUs, and MSIs; and
- (v) building sustainable innovation ecosystems in EPSCoR jurisdictions



Recommendation 4 - Physical and Administrative Infrastructure

NSF should invest in physical and administrative infrastructure in EPSCoR jurisdictions that support research and economic development. This includes construction or modernization of research facilities and infrastructure, research instrumentation, and staff to support intellectual property development, commercialization, and corporate engagement—all of which are essential for building the research infrastructure for sustainable research and economic competitiveness in NSF EPSCoR jurisdictions.

NSF EPSCoR Response

- [NSF 23-587](#) (E-CORE RII)
 - Option for an Academic Research Infrastructure and Research Facilities Core
- Multiple NSF funding opportunities related to infrastructure ---- e.g., Mid-scale RI-1 ([NSF 22-637](#)), Mid-scale RI-2 ([NSF 23-570](#)), and MRI ([NSF 23-519](#))



Recommendation 5 - Programs to Promote Intra- and Inter-jurisdictional Research, Education, and Workforce Development

*NSF should explore opportunities to **fund collaborative proposals across multiple jurisdictions**. Interjurisdictional opportunities could support topics of shared interest that are identified by the proposing project team that would leverage existing expertise and resources with the goals of promoting synergistic research, workforce development, and educational activities that can broaden impacts well beyond what single jurisdictions (particularly smaller ones) can accomplish.*

NSF EPSCoR Response

- EPSCoR RII Track-2: Focused EPSCoR Collaborations, [NSF 22-633](#)
 - Now allow collaborative submissions
 - FY23-24 topic is very broad and spans disciplinary boundaries
 - Publication of a 2-year solicitation
- [NSF 23-587](#) (E-CORE RII) and [NSF 23-588](#) (E-RISE RII)
- Other many NSF funding opportunities & mechanisms, including conferences, workshops, planning grants, EAGERs, etc.



Recommendation 6 - Support for Workforce, Including those with Diverse Career Pathways

NSF should expand research and collaboration opportunities and related career support and mentoring for individuals at different career stages and pathways within NSF EPSCoR funding programs.

NSF EPSCoR Response

- EPSCoR RII Track-2: Focused EPSCoR Collaborations, [NSF 22-633](#)
 - Early-career faculty focus
- EPSCoR RII Track-4: EPSCoR Research Fellows, [NSF 23-535](#)
 - Early-career faculty focus, expanded eligibility to include mid-career faculty
 - Supports trainees
 - @NASA focuses on those underrepresented in STEM
- [NSF 23-587](#) (E-CORE RII) and [NSF 23-588](#) (E-RISE RII)
 - Opportunity to develop cores specific to diversity and workforce
 - Workforce development plan required for E-RISE RII



Recommendation 7 - Proactive Inclusion Strategies

NSF should be accountable for the formation of diverse teams of researchers via partnerships between EPSCoR jurisdictions and researchers from underrepresented groups in all pre- and post-award facets of the EPSCoR program, such as inclusion in panels, committees, commissions, and review boards. EPSCoR researchers, especially those from underrepresented groups, need greater inclusion on NSF panels and advisory committees.

NSF EPSCoR Response

- **Balanced panel preparations (pre- and post- award)**
- **Strategic inclusive representation on NSF Advisory Committees**
- **Outreach (and inreach) on best practices for forming diverse teams**
- **Required broadening participation component in all EPSCoR programs**

NOTE: One of NSF EPSCoR's five programmatic goals is as follows:

Broaden direct participation of diverse individuals, institutions, and organizations in the project's science and engineering research and education initiatives



Recommendation 8 – Access and Opportunity

*NSF should enhance geographic diversity by **providing greater infrastructure support for Tribal Colleges and Universities (TCUs), Historically Black Colleges and Universities (HBCUs), Hispanic Serving Institutions (HSIs), and other Minority-Serving Institutions (MSIs) and Primarily Undergraduate Institutions (PUIs), including Two-Year College (TYCs),** to engage in research efforts and enhance collaborations with external partners. Support must also include technical assistance to address gaps in research administration, funding of brick-and-mortar research facilities, institutional and interinstitutional research collaborations, and establishment of innovative mentoring partnerships. In addition to providing support, EPSCoR must shift to tracking impactful outcomes to inform subsequent support.*

NSF EPSCoR Response

- [Agency Priority Goal](#) (improve representation in the scientific enterprise)
- NSF Tribal Consultation and Engagement Working Group and launch of NSF's Supporting Tribal Nations in STEM [website](#)
- NSF *HBCU-Excellence in Research* ([NSF 23-598](#)) programmatic engagement, including launch of *Ideas Lab: Advancing Research Capacity at HBCUs through Exploration and Innovation* (ARC-HBCU, [NSF 23-626](#))



Recommendation 8 – Access and Opportunity

*NSF should enhance geographic diversity by **providing greater infrastructure support for Tribal Colleges and Universities (TCUs), Historically Black Colleges and Universities (HBCUs), Hispanic Serving Institutions (HSIs), and other Minority-Serving Institutions (MSIs) and Primarily Undergraduate Institutions (PUIs), including Two-Year College (TYCs),** to engage in research efforts and enhance collaborations with external partners. Support must also include technical assistance to address gaps in research administration, funding of brick-and-mortar research facilities, institutional and interinstitutional research collaborations, and establishment of innovative mentoring partnerships. In addition to providing support, EPSCoR must shift to tracking impactful outcomes to inform subsequent support.*

NSF EPSCoR Response

- NSF EPSCoR engagement with [Centers of Research Excellence in Science and Technology \(NSF 23-158\)](#) PI community
- [NSF 23-587](#) (E-CORE RII), [NSF 23-588](#) (E-RISE RII), and [NSF 23-221Y](#), (GRANTED)
- Launch of EPSCoR Document Outcomes Collection System (EDOCS)
- NSF Director Priority of Creating Opportunities Everywhere



