Celebrating Increased NSF Investments in EPSCoR Jurisdictions: A Reflection on the CHIPS and Science Act

EPSCoR Live! Panelists

Sandra Richardson, Section Head, Office of Integrative Activities

J. Kemi Ladeji-Osias, Deputy Division Director, Directorate for Engineering

Junping Wang, Deputy Division Director, Directorate for Mathematical and Physical Sciences

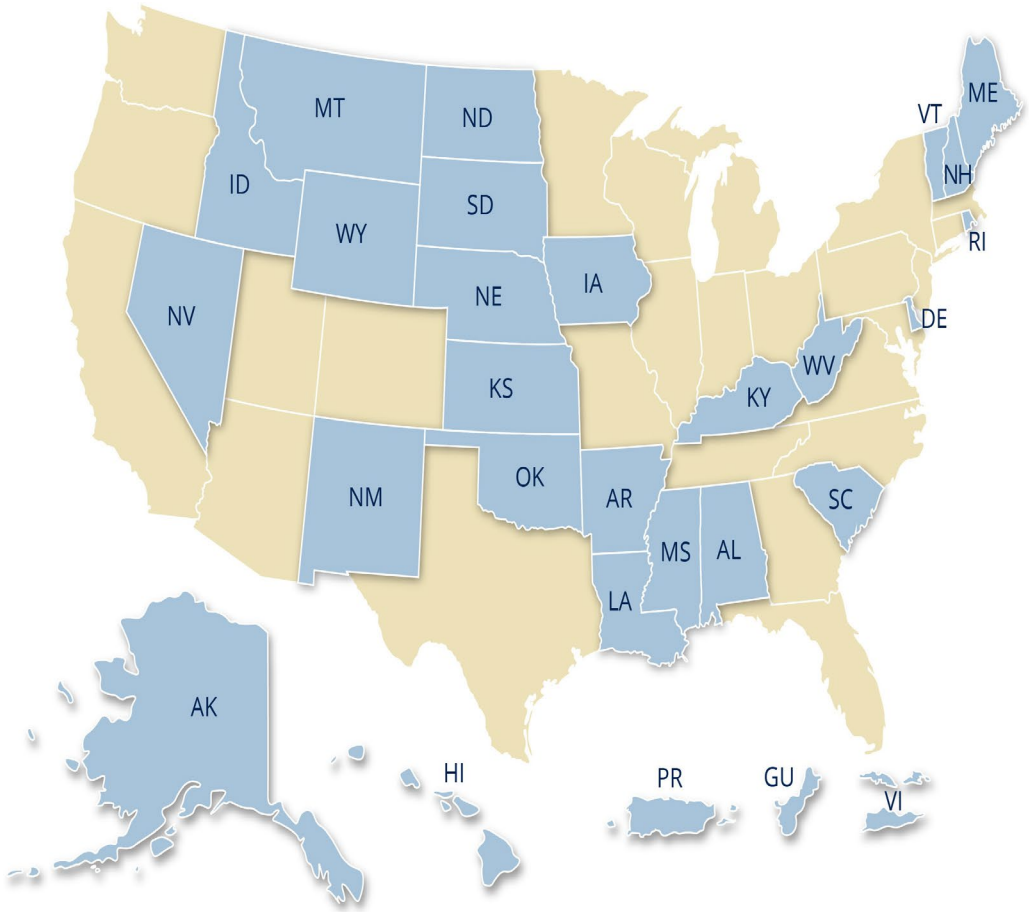
Monya Ruffin, Acting Division Director, Directorate for STEM Education

David Barker, Division Director, Directorate for Social, Behavioral, and Economic Sciences

December 5, 2024

NSF EPSCoR Jurisdiction Eligibility

- The Established Program to Stimulate Competitive Research (EPSCoR) is a congressionally-legislated geographic diversity, research capacity building program.
- A state or territory is NSF EPSCoR-eligible if its most recent five-year level of total NSF funding is ≤ 0.75% of the total NSF budget (excluding EPSCoR funding and NSF funding to other federal agencies).
- There are currently 28 EPSCoR-eligible jurisdictions (eligibility is frozen through FY27).



AL	Alabama
AK	Alaska
AR	Arkansas
DE	Delaware
GU	Guam
HI	Hawaii
IA	Iowa
ID	Idaho
KS	Kansas
KY	Kentucky
LA	Louisiana
ME	Maine
MS	Mississippi
MT	Montana
NE	Nebraska
NH	New Hampshire
NM	New Mexico
ND	North Dakota
NV	Nevada
OK	Oklahoma
PR	Puerto Rico
RI	Rhode Island
SC	South Carolina
SD	South Dakota
VI	U.S. Virgin Islands
VT	Vermont
WV	West Virginia
WY	Wyoming

EPSCoR Provisions in CHIPS and Science Act (2022)

(CHIPS Sec 10325 a.3.C): **NSF will 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 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;

(iv) capacity building activities for Emerging Research Institutions (ERIs) and Minority Serving Institutions (MSIs); and

(v) leveraging the Partnerships for Innovation Program to build sustainable innovation ecosystems in EPSCoR jurisdictions.

EPSCoR Provisions in CHIPS and Science Act (2022)

Sec 10325. Expanding geographic diversity

- **Target 1** (CHIPS Sec 10325 a.3.A): Authorization of a gradual increase in percentage of NSF funding for institutions in EPSCoR jurisdictions.

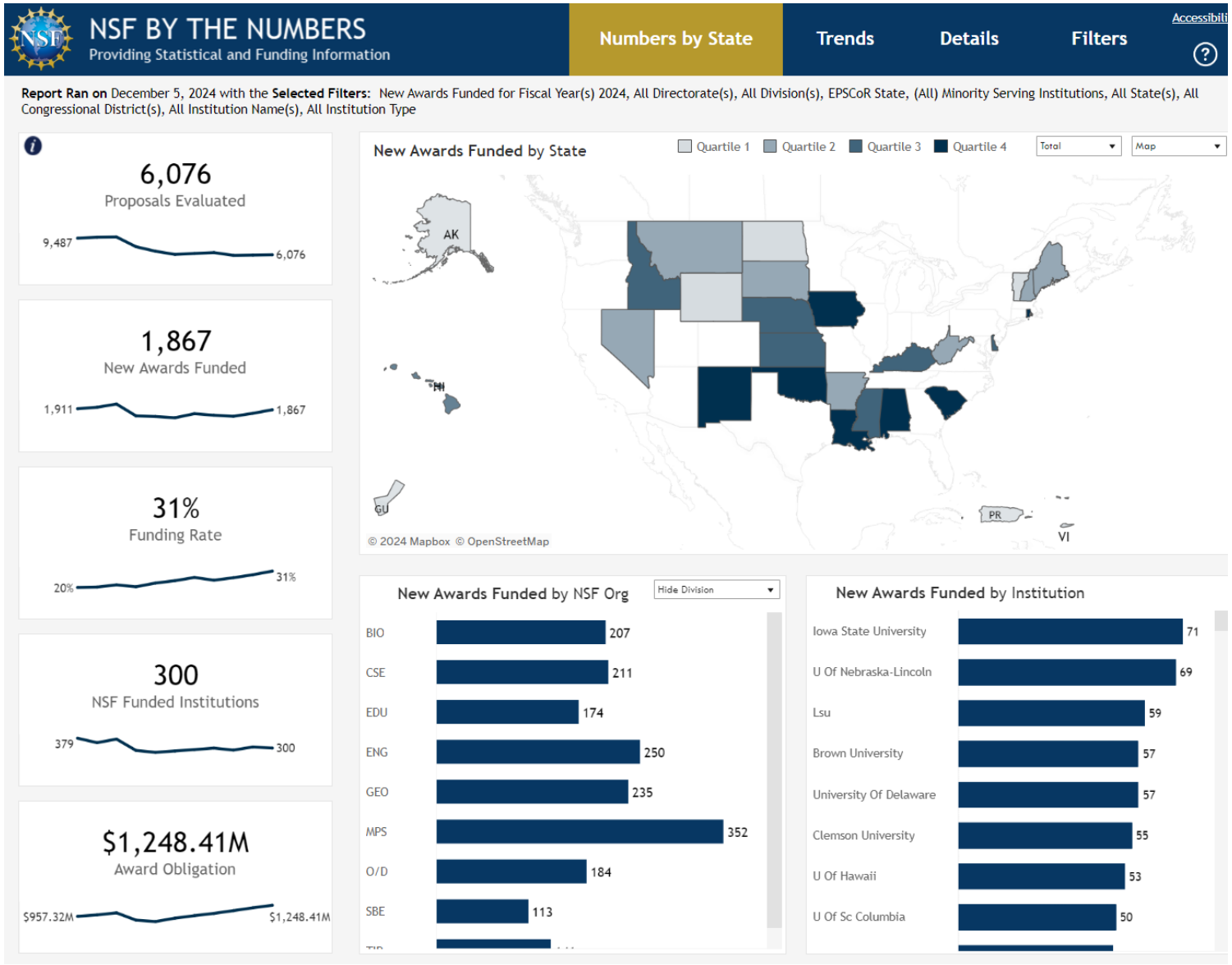
Agency-level Spending Target (Dollars in Millions)							
	FY2023	**FY2024**	**FY2025**	**FY2026**	**FY2027**	**FY2028**	**FY2029**
% Target	15.5%	16%	16.5%	17%	18%	19%	20%
Dollar Target	$1,176.00M	$1,065.30M	TBD	TBD	TBD	TBD	TBD
Resulting NSF Investment	$1,204.98 (15.9%)	*ACHIEVED**	TBD	TBD	TBD	TBD	TBD

EPSCoR Provisions in CHIPS and Science Act (2022)

Sec 10325. Expanding geographic diversity

- **Target 2** (CHIPS Sec 10325 a.3.B): Authorization of a gradual increase in percentage of NSF funding of scholarships, graduate fellowships and traineeships, and postdoctoral awards to support institutions in EPSCoR jurisdictions.

Agency-level Spending Target for Scholarships, Fellowships, Traineeships (Dollars in Millions)							
	FY2023	**FY2024**	**FY2025**	**FY2026**	**FY2027**	**FY2028**	**FY2029**
% Target	16%	18%	20%	20%	20%	20%	20%
Dollar Target	$51.87M	$45.55M	TBD	TBD	TBD	TBD	TBD
Resulting NSF Investment	$60M (18%)	*ACHIEVED**	TBD	TBD	TBD	TBD	TBD



NSF BY THE NUMBERS

NSF EPSCoR Strategy, Engagement, and Consultation Working Group (ESEC WG)

The ESEC WG was established in March 2023 to:

- support development of an agency strategy and implementation plan for EPSCoR provisions in CHIPS and Science Act;
- identify and share directorate- and agency-specific needs and gaps related to submissions from and awards to EPSCoR jurisdictions; and
- increase EPSCoR representation in NSF proposal submission and award portfolio.

ESEC WG Membership:

- 12 members, including WG Chair from OIA, a senior leader from each directorate, and representatives from Office of Budget Finance and Awards & Office of International Sci & Eng
- 3 subgroups to carry out work related to outreach & engagement, internal activities & training, and internal systems

Strategies in Agency Implementation Plan

- **Strategy 1**: Develop or grow NSF funding opportunities that support new or enhanced research capacity building approaches which promote sustainable research infrastructure advancements at institutions in EPSCoR jurisdictions.
  - Includes activities for research capacity building efforts for EPSCoR jurisdictions
- **Strategy 2**: Enhance technical assistance, external outreach, and ongoing engagement with EPSCoR institutions.
  - Includes targeted activities for in-reach, outreach, and engagement
- **Strategy 3**: Establish and monitor agency funding to EPSCoR institutions/jurisdictions.

Directorate for Engineering

J. Kemi Ladeji-Osias
Deputy Division Director
Division of Engineering Education and Centers (EEC)

NSF Directorate for Engineering

https://new.nsf.gov/eng

Kemi Ladeji-Osias, Ph.D.
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Engineering Directorate

Emerging Frontiers and Multidisciplinary Activities (EFMA)	Chemical, Bioengineering, Environmental, and Transport Systems (CBET)	Civil, Mechanical, and Manufacturing Innovation (CMMI)	Electrical, Communications, and Cyber Systems (ECCS)	Engineering Education and Centers (EEC)
Emerging Frontiers in Research and Innovation erVa	Chemical process systems Engineering biology and health Environmental engineering and sustainability Transport phenomena	Advanced manufacturing Dynamics, control, and cognition Engineering for civil infrastructure (NHERI) Mechanics and engineering materials Operations and design	Communications, circuits, and sensing systems Electronics, photonics, and magnetic devices Energy, power, control, and networks Foundational Research in Robotics	Engineering centers and networks Engineering education Engineering workforce development Broadening participation

Early and Mid-Career Funding

Review ENG proposals

Engineering Research Initiation (ERI) - NSF 24-590 – Due 9/16/25

- Supports new investigators at non-R1 institutions
- NSF-DOE EERE partnership: marine energy and hydro-power

Research Initiation in Engineering Formation (RIEF) - NSF 20-558 – TBD

- Supports new investigators to engineering education research

ENG CAREER proposal workshop, Spring 2025

Faculty Early Career Development Program (CAREER)

- NSF 22-586 proposals due July 23, 2025
- 2024 workshop - https://careerworkshop.asee.org/

Re-entry to Active Research Program (RARE)

- NSF 20-586 continuous submission

Boosting Research Ideas for Transformative and Equitable Advances in Engineering (BRITE) - NSF 25-512 – Due 3/3/25

- Pivot to new research or reestablish sustained research

BRITE Webinar, 12/2 & 1/6

Supplemental Proposals

Education and Training

- Design projects
- REU, REM, veterans
- NSF INTERN, START

Use-inspired and Translational Research

- GOALI
- Access to facilities for fabrication and manufacturing

International Collaboration

- European Union, Ireland, South Korea, Ukraine and others

Recent Awards

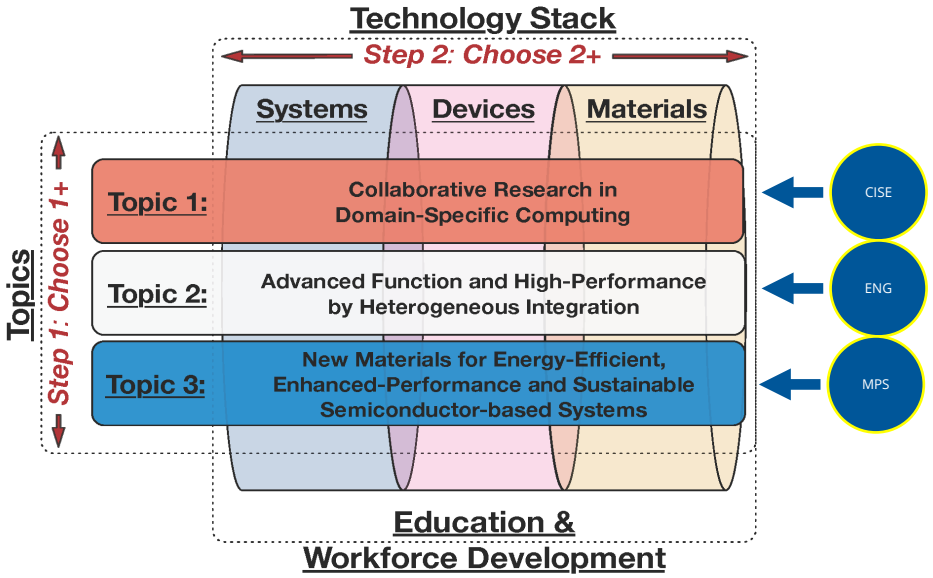
U.S. National Science Foundation
Engineering Research Centers

NSF Engineering Research Center for Environmentally Applied Refrigerant Technology Hub (EARTH)

This ERC will create a transformative, sustainable refrigerant lifecycle to reduce global warming from refrigerants while increasing the energy efficiency of heating, ventilation, and cooling.

University of Kansas - Award # 2330175 PI: Shiflett - $26M (2024 – 2028)

https://erc-earth.ku.edu/



Collaborative Research: FuSe: Substrate-inverted Multi-Material Integration Technology

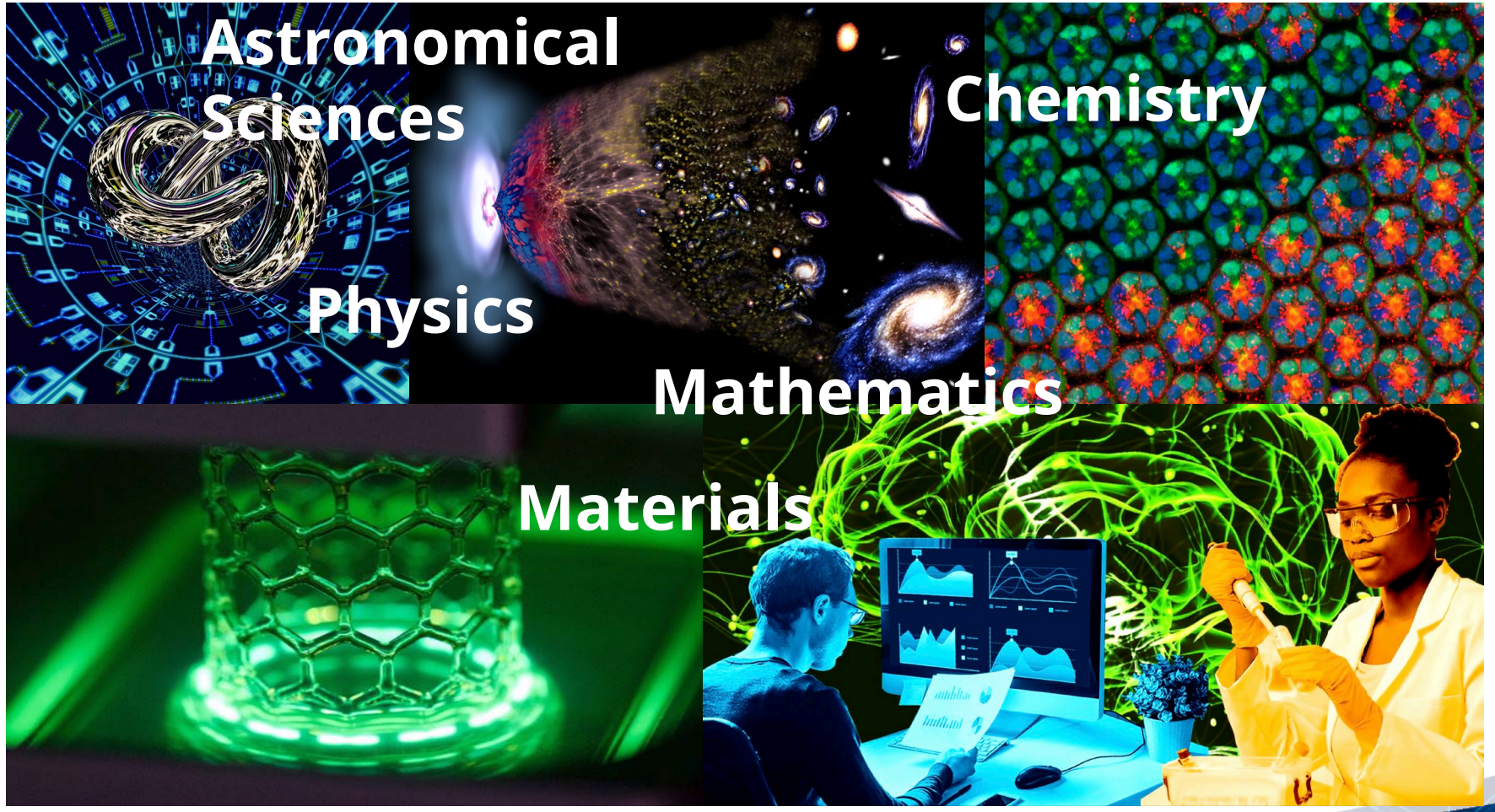
This program will explore co-design of new materials, integration processes, device architectures, and packaging solutions to realize a transformative universal heterogeneous integration platform: Substrate-inverted Multi-Material Integration Technology (SuMMIT).

Massachusetts Institute of Technology, Award # 2328839, PI: Hu, $1.27M
University of Delaware, Award # 2328840, PI: Zeng, $359K
Dartmouth College, 2328841, PI: Liu, $360K

Directorate for Mathematical and Physical Sciences

Junping Wang
Deputy Division Director
Division of Mathematical Sciences (DMS)

Directorate for Mathematical and Physical Sciences (MPS)

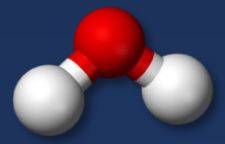


Science at the Scales of the Universe

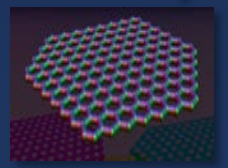
Images from Wikipedia Commons

quarks

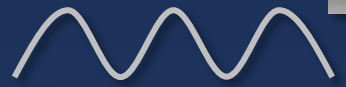
nuclei
proton



molecules
atoms



nanostructures
polymers
proteins



100 Hz
gravitational
wave

Sun

planets

solar
system

Crab
Nebula

galaxies
Milky Way

Virgo
cluster

observable
universe

10^{-20} 10^{-16} 10^{-12} 10^{-8} 10^{-4} 1 10^{4} 10^{8} 10^{12} 10^{16} 10^{20} 10^{24}

CHE, DMR

PHY

AST

DMS

MPS EPSCoR Activities

MPS EPSCoR Outreach Activities:

- NSF EPSCoR National Conference, Omaha NE, October 13-16, 2024.
  - MPS AD (*David Berkowitz*) participated
- 9th Annual Meeting of SIAM Central States Section, October 5-6, 2024, Kansas City, Missouri.
- Midwest Numerical Analysis Day 2025 conference.
  - Outreach to Iowa, Oklahoma, Kansas, South Dakota, Nebraska, Wyoming, Montana, and New Mexico
- Annual EPSCoR PI meeting at NSF, May 19-20, 2025
- Virtual Office Hours dedicated to EPSCoR funding opportunities
- Program officer visits to various institutions in EPSCoR jurisdictions
- Program officer presentation on EPSCoR funding opportunities

MPS EPSCoR Activities

MPS EPSCoR Activities:

- EPSCoR incentives from all MPS divisions
  - Priority of funding for competitive EPSCoR proposals
- Coordinated co-funding through the Office of Strategic Initiatives (OSI)
- Participation of foundation-wide EPSCoR activities
  - Contribute to and engage with activities at the Foundation level, including workshops, networking events, and cross-agency initiatives, to amplify the impact of EPSCoR programs
- Inclusion of panelists and workshop participants from institutions in EPSCoR jurisdictions
  - Promote representation by prioritizing the inclusion of panelists from EPSCoR jurisdictions in proposal reviews.
  - Facilitate cultural change
- Data tool development aiming at
  - EPSCoR investment tracking
  - Scenario building and portfolio analysis

Directorate for STEM Education

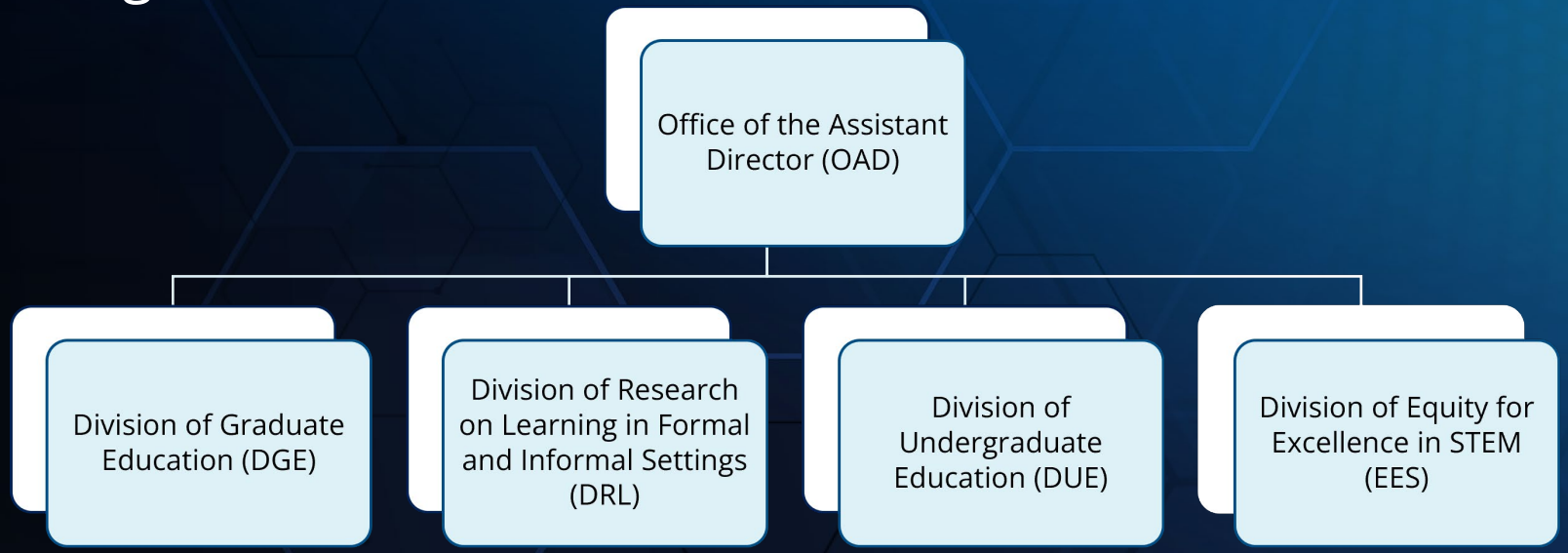
Monya Ruffin

Deputy Division Director

Division of Research on Learning in Formal and Informal Settings (DRL)

Directorate for STEM Education (EDU)

The U.S. National Science Foundation's Directorate for STEM Education works to develop a well-informed citizenry and a diverse and capable workforce of scientists, technicians, engineers, mathematicians and educators.



STEM Learning and Learning Environments

Broadening Participation & Institutional Capacity

STEM Professional Workforce Development

U.S. National Science Foundation
Directorate for STEM Education

Preparing a diverse STEM workforce and a well-informed citizenry

Find more information here nsf.gov/edu.

Directorate for STEM Education (EDU)

Division of Research on Learning in Formal and Informal Settings (DRL)

- Advancing Informal STEM Learning (AISL)
- Discovery Research PreK-12 (DRK-12)
- Computer Science for All (CSforAll)
- Innovative Technology Experiences for Students and Teachers (ITEST)
- Research on Innovative Technologies for Enhanced Learning (RITEL)

Division of Undergraduate Research (DUE)

- NSF Scholarships in Science, Technology, Engineering, and Mathematics (S-STEM)
- Advanced Technological Education (ATE)
- Improving Undergraduate STEM Education: Directorate for STEM Education (IUSE: EDU)
- IUSE: Innovation in Two-Year College STEM Education (ITYC)
- IUSE: Hispanic-Serving Institutions (HSI Program) **(DUE/EES)**
- Robert Noyce Teacher Scholarship Program National STEM Teacher Corps

Division of Graduate Education (DGE)

- National Science Foundation Research Traineeship (NRT) Program
- Innovations in Graduate Education (IGE)
- Graduate Research Fellowship Program (GRFP)
- CyberCorps® Scholarship for Service (SFS)
- Secure and Trustworthy Cyberspace (SaTC)

Division of Equity for Excellence in STEM (EES)

- Louis Stokes Alliances For Minority Participation (LSAMP)
- Tribal Colleges and Universities Program (TCUP)
- Historically Black Colleges and Universities Undergraduate Program (HBCU-UP)
- Centers of Research Excellence in Science and Technology (CREST Centers)
- EPSCoR CREST
- Alliances for Graduate Education and the Professoriate (AGEP)
- ADVANCE: Organizational Change for Gender Equity in STEM Academic Professions (ADVANCE)
- NSF's Eddie Bernice Johnson Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science (INCLUDES) Initiative
- IUSE: Hispanic-Serving Institutions (HSI Program) *(DUE/EES)*

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Directorate-wide and NSF-wide Programs

EDU Core Research (ECR:Core)
NSF 21-588

EDU Core Research: Building Capacity in STEM Education Research
(ECR: BSCER)
NSF 22-548

EPSCoR Graduate Fellowship Program
(EGFP)
NSF 24-588)

Faculty Early Career Development Program
(CAREER)
NSF 22-586

Graduate Research Fellowship Program
(GRFP)
NSF 24-591

Racial Equity in STEM Education Program
NSF 22-634

Science, Technology, Engineering and Mathematics Education Individual Postdoctoral Research Fellowships
(STEMEdIPRF)
NSF 23-544

Workplace Equity for Persons with Disabilities in STEM and STEM Education
NSF 23-593

NSF 24-077

Dear Colleague Letter: Enhancing STEM Education, Research Capacity, and Workforce Development in Established Program to Stimulate Competitive Research (EPSCoR) Jurisdictions

April 11, 2024

Dear Colleague:

In alignment with the CHIPS and Science Act of 2022, the U.S. National Science Foundation's Directorate for STEM Education (EDU) affirms its commitment to support science, technology, engineering, and mathematics (STEM) education, research capacity, workforce development, and professional development within institutions in Established Program to Stimulate Competitive Research (EPSCoR) eligible jurisdictions. Through this Dear Colleague Letter (DCL), EDU encourages new proposal submissions to EDU programs and supplemental funding requests to existing EDU awards led by institutions in the 28 EPSCoR jurisdictions (see list below). In order to achieve this, EDU seeks increased accessibility to the ideas, opportunities, and tools of STEM education and research for students, educators, researchers, communities at all levels and in all settings (both formal and informal), and by the public in EPSCoR jurisdictions, which historically receive less STEM education funding than other regions of the country.

Proposal submissions and supplemental funding requests should address one or more of the following EDU goals:

- Prepare the **next generation of STEM professionals** and attract and retain more Americans to STEM careers.
- Develop a robust research community that can conduct **rigorous research and evaluation** that will support excellence in STEM education and that **integrates research and education.**
- Increase the **technological, scientific, and quantitative literacy** of all Americans so that they can successfully participate in every realm of citizenship, living productive lives in an increasingly technological society.
- Broaden participation **(e.g., individuals, geographic regions, types of institutions, and STEM disciplines)** and close achievement gaps in all STEM fields.

NSF EPSCoR Graduate Fellowship Program (EGFP) – egfp@nsf.gov

The NSF EPSCoR Graduate Fellowship Program (EGFP) supports institutions in EPSCoR jurisdictions by funding graduate fellowships for new or continuing EGFP eligible students

- Eligible students received the distinction of GRFP HM (nsfgrfp.org) in the last 3 years (Spring 2022 – 2025)
- Support consists of $37,000 stipend and $16,000 for Cost of Education allowance each year of attendance for 3 years within a 5-year period

Potential EGFP Fellows: Apply to EGFP-Designated Institutions/Programs at ETAP.NSF.GOV starting Spring 2025	Potential EGFP PI Institutions: See NSF 24-588 for proposal submission details

To find out more about EPSCoR: https://new.nsf.gov/funding/initiatives/epscor

EDU

Directorate for STEM Education

EPSCoR Centers of Research Excellence in Science and Technology (EPSCoR CREST)

Published May 17, 2024, NSF 24-575

Full Proposal Deadline
December 6;
July 7, 2025 and first Monday in July, annual thereafter

Supplemental Requests Deadline
July 7, 2025 and first Monday in July, annual thereafter

EPSCoR CREST Centers

EPSCoR CREST Centers integrate research and education, and must promote the development of new knowledge, enhance faculty research productivity, and increase diverse representation in STEM disciplines. EPSCoR CREST Center awards are typically **60-month continuing grants of up to $7.5 million**. These funds are used to improve elements that the institution has identified as being critical to strengthening its future research capacity to increase extramural funding and research productivity in the form of publications, patents, and other research products..

EPSCoR CREST Partnership Supplements

EPSCoR CREST Partnership Supplements support the establishment or strengthening of partnerships and collaborations between existing EPSCoR CREST Centers and nationally or internationally recognized research centers including NSF-supported research centers, K-12 schools, and museums and science centers. Support may be requested for activities that have a direct positive influence on the competitiveness of participating scientists and engineers, and the quality of the institution's research and training. EPSCoR CREST Partnership Supplements may be **supported up to $100,000**.

National Science Foundation

EDU EPSCoR Outreach

- Onsite EDU EPSCoR Outreach
- EDU Regional Days (Virtual and in person)
- EDU January Virtual events
- NSF EPSCoR PI Meeting Open House
- Programmatic and Opportunities Outreach Materials and Resources

Directorate for Social, Behavioral, and Economic Sciences

David Barker
Division Director
Division of Social and Economic Sciences (SES)

Social Behavioral & Economic Sciences (SBE)

MISSION:

Advance scientific knowledge about people and society to enhance U.S. health, prosperity, welfare, and defense

SBE sciences are thus critical for the nation's (and the world's) well-being.

SBE Core Funding Divisions and Programs

Behavioral and Cognitive Sciences (BCS)

- Archaeology and Archaeometry
- Biological Anthropology
- Cultural Anthropology
- Cognitive Neuroscience
- Developmental Sciences
- DLI-Documenting Endangered Languages
- Human-Environment and Geographical Sciences
- Human Networks and Data Science
- Linguistics
- Perception, Action and Cognition
- Science of Learning and Augmented Intelligence
- Social Psychology

Social and Economic Sciences (SES)

- Accountable Institutions and Behavior
- Decision, Risk and Management Sciences
- Economics
- Law and Science
- Methodology, Measurement, and Statistics
- Science of Organizations
- Science and Technology Studies
- Science of Science: Discovery, Communication, and Impact
- Security and Preparedness
- Sociology
- Research Infrastructure in SBE sciences

SBE Office of Multidisciplinary Activities (SMA)

- Build and Broaden
- Ethical and Responsible Research
- Research Experiences for Undergraduates Sites
- SBE Postdoctoral Research Fellowships

Stay connected:

https://new.nsf.gov/sbe

Seek a speaker?

SBE.EPSCoR@nsf.gov

- Senior/standard
- Continuing
- DDRIG
- Postdoctoral
- Community Engagement
- CAREER
- MCA
- NSF/SNF
- Conference
- RAISE
- EAGER

- REU & RET
- REG
- SBE-High

NSF 24-079

Dear Colleague Letter: Expanding Geographic and Institutional Diversity in Social, Behavioral, and Economic Sciences (SBE)

April 16, 2024

Dear Colleagues:

The U.S. National Science Foundation's (NSF) Directorate for Social, Behavioral and Economic Sciences (SBE) welcomes submissions of both new proposals and supplemental funding requests from Established Program to Stimulate Competitive Research (EPSCoR) eligible institutions. This Dear Colleague Letter (DCL) aims to broaden geographic and demographic participation and to promote SBE-funded activities that enable sustainable growth and competitiveness across all 28 EPSCoR jurisdictions. Proposals from institutions across EPSCoR-eligible jurisdictions are encouraged to submit to all SBE programs. Collaborative proposals led by EPSCoR institutions, and proposals from Minority Serving Institutions (MSIs) and Emerging Research Institutions (ERIs) in EPSCoR jurisdictions are particularly welcomed.