NSF EPSCoR
ADVANCING GEOGRAPHIC DIVERSITY IN STEM

E-CORE & E-RISE FACT SHEET

In 2023, the U.S. National Science Foundation Established Program to Stimulate Competitive Research (NSF EPSCoR) established two programs in response to the 2022 *Study of the Established Program to Stimulate Competitive Research*, the *Envisioning the Future of NSF EPSCoR* report, and the "CHIPS and Science Act of 2022."

The NSF EPSCoR Research Infrastructure Improvement programs, **EPSCoR Collaborations for Optimizing Research Ecosystems (NSF E-CORE)** and **EPSCoR Research Incubators for STEM Excellence (NSF E-RISE)**, will enhance jurisdictions' research and development competitiveness, support partnerships across academic institutions and non-academic sectors, create workforce development opportunities and promote scientific progress nationwide. The inaugural NSF E-CORE and NSF E-RISE awards were made in 2024.

Current E-CORE and E-RISE Awardee and Partner Institution Overview

71	Funded institutions.	**6**	Hispanic-serving institutions.
45	Emerging research institutions.	**7**	Historically Black colleges and universities.
37	Primarily undergraduate institutions.	**4**	Tribal colleges and universities.
14	Non-academic institutions.	**1**	Disability-serving institution.
18	Minority-serving institutions.	**1**	Asian American and Native American Pacific Islander-serving institution.

EPSCoR Research Infrastructure Improvement Program: EPSCoR Collaborations for Optimizing Research Ecosystems (E-CORE)

E-CORE aims to further EPSCoR's programmatic goals by building capacity in one or more targeted research infrastructure cores within an EPSCoR-eligible jurisdiction's research ecosystem.

Over four years, the teams, comprised of diverse academic institutions and government, industry, and nonprofit partners, will leverage their partnerships to meet core research infrastructure needs, grow self-sustaining research ecosystems, create pathways to science, technology, engineering and mathematics innovations, spur economic growth and yield societal impacts.

> "EPSCoR is a driving force in enabling STEM research for everyone, everywhere, ensuring broad access to innovation and opportunity. This cohort of E-CORE projects exemplifies the transformative power of investing in research infrastructure, and their contributions are poised to generate a lasting, sustainable impact on these jurisdictions' research ecosystems."
>
> – NSF Director Sethuraman Panchanathan

E-CORE awards provide funding over four years, with the possibility of renewal for four additional years.

For additional information about the E-CORE program, visit
https://new.nsf.gov/funding/opportunities/epscor-collaborations-optimizing-research.

EPSCoR Research Infrastructure Improvement Program: EPSCoR Research Incubators for STEM Excellence (E-RISE)

E-RISE aims to further EPSCoR's programmatic goals by developing and implementing sustainable networks of diverse research teams to collaborate on critical jurisdictional research priorities.

The research networks will leverage partnerships across institution types and sectors to develop innovative plans that address jurisdictional priorities while preparing a skilled technical workforce. The research teams will make sustainable scientific improvements that will lead to advancement and economic impact in the research and development enterprise of the jurisdiction.

> "This investment from NSF's E-RISE program powers scientific progress through broad networks of researchers, institutions and organizations that will significantly enhance STEM research capacity in our EPSCoR jurisdictions. We are investing in a future where EPSCoR jurisdictions are even more competitive in the scientific enterprise, both nationally and internationally."
>
> – NSF Director Sethuraman Panchanathan

E-RISE awards provide funding over four years, with the possibility of renewal for three additional years.

For additional information about the E-RISE RII program, visit
https://new.nsf.gov/funding/opportunities/epscor-research-incubators-stem-excellence.

E-CORE Project Summaries

- **Strengthening Partnerships for Advancing Research Capacity in Delaware**

Led by the University of Delaware, this project's vision is to create an inclusive, open, collaborative research ecosystem as well as to train and retain a highly skilled workforce. The project focuses on strengthening the state's data and intellectual property infrastructure, improving communication and access to STEM programming, supporting entrepreneurial training and fostering cross-institutional collaborations. By addressing these needs, this project will boost cutting-edge research carried out by interdisciplinary teams, resulting in substantial gains in Delaware's knowledge-based economy.
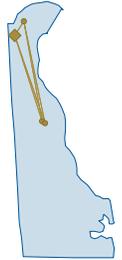
Collaborating institutions: Delaware State University, Delaware Technical and Community College, and Goldey-Beacom College. NSF Award IDs: 2438144 and 2438145.

- **Optimizing Research Infrastructure in Guam**

Led by the University of Guam, this project will build networks within Guam's research ecosystem to promote and support the development of competitive scientific research. The project will manage and coordinate research ecosystem growth to support improvements to jurisdictional research infrastructure. Additionally, it will support the training of a diverse STEM workforce ready to engage with emerging economic opportunities driven by scientific research and development. Through organizing workshops and strategic planning activities with Guam's stakeholder community, the project aims to identify areas and opportunities for growth, foster and strengthen partnerships and promote efforts to secure external funding to strengthen the territory's capacity for scientific research. The project will provide project development as well as management and administrative support for these efforts to grow and strengthen Guam's research ecosystem.
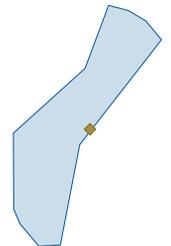
Collaborating institution: Guam Community College. NSF Award ID: 2438132

- **Technology for Innovative Visualization, Aggregation & Training in Environmental Preparedness and Resilience for Kentucky**

This project, led by the Kentucky Science & Technology Corporation, aims to expedite solutions to existing and rising challenges in climate resilience in Kentucky by increasing the capacity and connectivity of the research ecosystem throughout the state. Project outcomes will reduce the potential for damage and preserve life, develop new technologies, contribute to economic growth and job creation and build a more climate-resilient and prosperous future for all Kentuckians.
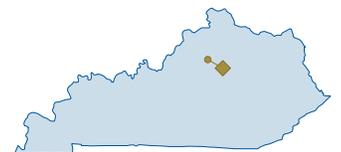
Collaborating institution: Kentucky State University. NSF Award ID: 2438201.

E-CORE Project Summaries

- **Louisiana Networks of Excellence for Tomorrow**

Led by the Louisiana Board of Regents, this project aims to build and sustain strong networks of collaboration, communication and partnership among the jurisdiction's institutions of higher education, connecting all stakeholders to the various resources, facilities and opportunities available in the state. Additionally, key project activities will include mentoring programs, competitive graduate student scholarships and fellowships and K-12 outreach activities.

Collaborating institutions: Louisiana State University and A&M College, Louisiana Tech University, Southern University and A&M College and the University of New Orleans. NSF Award ID: 2437963.

- **Strengthening Maine's Research Ecosystem and Pathways Through Strategic Capacity Building (Maine-SMART)**

Led by the University of Maine, the Maine-SMART project will take a comprehensive approach to addressing both scientific and cultural needs within the state. By leveraging partnerships with diverse institutions and organizations, the project has the potential to foster systemic changes in collaboration, education and workforce development, aligning closely with Maine's science and technology plan. The project integrates Indigenous science and sociocultural learning theory into research and educational practices, thus offering innovative solutions to complex problems while promoting inclusivity and belonging among tribal members in STEM.

Collaborating institutions: The Gulf of Maine Research Institute, the Maine Mathematics and Science Alliance, the University of Southern Maine, Southern Maine Community College and the University of Maine at Fort Kent. NSF Award IDs: 2412130, 2412131, 2412132, 2412133, 2412135.

- **Mississippi Research Alliance**

The vision of this project, led by Mississippi State University, is to be a transformative force in the Mississippi research and innovation ecosystem. The project will forge strategic partnerships that harness and enhance existing human and physical assets and coordinate new investments to position Mississippi as a national front-runner in science and technology. The project will strengthen strategic governance, improve sustainable access to instrumentation, and foster cross-institutional collaborations, thereby boosting cutting-edge research carried out by interdisciplinary teams and resulting in exponential gains to Mississippi's knowledge-based economy. The project's integrated approach will create a research and development ecosystem that builds strategic alliances among research and emerging research institutions, state agencies, and public and private organizations to positively impact education, workforce development and the broader societal understanding of scientific endeavors.
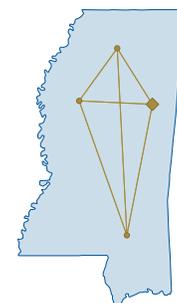
Collaborating institutions: The University of Southern Mississippi, The University of Mississippi, and Mississippi Valley State University. NSF Award ID: 2433435.

E-CORE Project Summaries

- **New Hampshire Long-term Investment to Fuel Transformative Research (NH-LIFT)**

The NH-LIFT project, spearheaded by the University of New Hampshire, aims to develop a network that includes representatives from all 17 colleges and universities in the state and works with the NSF Small Business Innovation Research/Small Business Technology Transfer program to develop relationships between academia and businesses. The goals of NH-LIFT are to procure new research opportunities at partner institutions; develop and strengthen educational and research collaborations with regional industry partners; share institutional best practices to recruit, empower and retain a broad and diverse group of students in STEM fields; and build a cohort of project alumni that will support near-peer mentoring and recruitment.

Collaborating institutions: Keene State College, Dartmouth College, Plymouth State University, New England College, Saint Anselm College, and the Community College System of New Hampshire. NSF Award ID: 2412054.

- **Research Infrastructure Optimization for New Mexico**

Led by The University of New Mexico, this project aims to connect New Mexico's emerging research institutions (ERIs) with the broader state research ecosystem consisting of national laboratories, high-tech industries, and established research universities. By strengthening New Mexico's research infrastructure, the project will foster innovation, which will lead to economic growth in critical sectors and create high-value employment opportunities for graduates from ERIs. The project will also provide the state legislature with insights on economic and workforce trends to enable strategic investments in key areas and foster a culture of inclusion and diversity, thereby broadening participation in the scientific enterprise across individuals, institutions, and sectors.
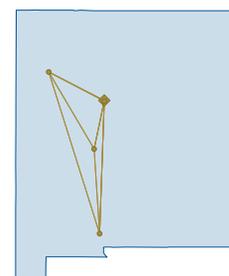
Collaborating institutions: Central New Mexico Community College, New Mexico Institute of Mining and Technology, Navajo Technical University, and New Mexico State University. NSF Award ID: 2435071.

- **Rhode Island Inclusive Network for Excellence in Science and Technology**

The University of Rhode Island is leading this project to enable the state of Rhode Island and the Narragansett Indian Tribe and its citizens to develop and maintain a sustainable, broadly inclusive, and competitive research ecosystem that supports use-inspired science and technology and workforce development. The project will sustainably develop capacity, programming, platforms, and partnerships that serve and benefit institutions of higher education across Rhode Island by institutionalizing research infrastructure support programs and implementing innovative programs that lead to increased collaborations across the state's institutions. These platforms and systems will lead to an inclusive network for scientific opportunities with low barriers to entry, an increased number of students from minoritized and tribal backgrounds that flourish in STEM, and the creation of new initiatives that align with the strategic diversity, equity, inclusion, justice and access plans of the collaborating institutions.
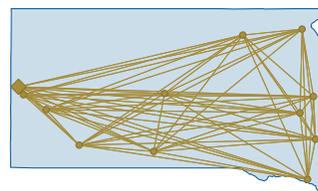
Collaborating institutions: Brown University, Rhode Island College, Rhode Island School of Design, and Roger Williams University. NSF Award ID: 2433276.

E-CORE Project Summaries

- **South Dakota Research Ecosystem Network: STEM Education, Community Engagement, and Broadening Participation**

Led by Black Hills State University, this project will meet the challenge of creating pathways for young learners to develop interest and confidence in STEM and become motivated to work in STEM fields across the largely rural jurisdiction of South Dakota. The project aims to engage STEM researchers and K-12 teachers and students to create a pipeline for the next generation of the South Dakota STEM workforce that could become a national model for connecting individuals who are geographically isolated to STEM education at the pre-college level.

Collaborating institutions: Oglala Lakota College, the University of South Dakota, the South Dakota School of Mines and Technology, Dakota State University, South Dakota State University, the Augustana University Association, Northern State University, Sinte Gleska University, Sisseton Wahpeton College, the Sanford Underground Research Facility/South Dakota Science and Technology Authority, and the South Dakota Discovery Center. NSF Award IDs: 2412055, 2412056, 2412057, 2412058, 2412059, 2412060, 2412061, 2412062.

- **The Science and Technology Research Initiative for the Vermont Economy**

This project, led by Landmark College, aims to build an inclusive research ecosystem to serve as a cornerstone of the Vermont economy. The project's goal is to establish administrative support to build and sustain a diverse, integrated science and technology research ecosystem in Vermont. The project also aims to expand opportunities in STEM education and research for students who are neurodivergent, first-generation, low-income or multilingual to ensure opportunities for all talented students. The project will build research capacity through training, increasing research opportunities and creating new science and technology jobs. It will contribute to expanding the science and technology workforce locally and nationally.
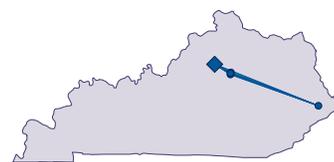
Collaborating institutions: Bennington College and Community College of Vermont. NSF Award IDs: 2438168 and 2438169.

For additional information, including information about other funding opportunities through NSF EPSCoR, visit www.nsf.gov/epscor.

E-RISE Project Summaries

- **Kentucky — Driving AgTech Research and Education in Kentucky through Inclusive Network Building, Impactful Research, and Workforce Development for Soilless Food Systems**

Led by Kentucky State University, this project will establish an unprecedented, cross-sector research incubator to improve nutrient management, food safety, and sustainability of soilless agriculture in Kentucky, which will lead more diverse and inclusive STEM research and several approaches to understand how nutrient flow through aquaponic systems influences microbial communities and its potential impact on biofilm formation and food safety. The project will enhance workforce development in Kentucky by creating new curricula, integrating research into student learning and developing new work-and-learn opportunities.

Collaborating institutions: Bluegrass Community and Technical College, the University of Pikeville, Kentucky Science and Technology Corporation, and FoodChain Inc. NSF Award ID: 2416939.

- **Maine — Enhancing Maine Forest Economy, Sustainability, and Technology Ecosystem to Accelerate Innovation**


Led by the University of Maine, this project will build strategic R&D capacity to fuel the dramatic growth of Maine's forest-based economy and the rural communities it supports. The project will employ innovative and inclusive approaches to participatory system dynamics modeling to leverage stakeholder networks while yielding new information regarding convergent science. The project's framework will nurture adaptive community resilience and strengthen the capacity of rural and Indigenous communities to respond to current and future socio-ecological threats and opportunities.

Collaborating institutions: Bates College, Colby College, the University of Maine at Fort Kent, the University of Maine at Presque Isle, the University of Southern Maine, the Maine Development Foundation, and the Maine Mathematics and Science Alliance. NSF Award IDs: 2416915, 2416916, 2416917, 2416918, 2416919, 2416920, 2416921, 2416922.

- **Maine — Maine Algal Research Infrastructure and Accelerator**

The Bigelow Laboratory for Ocean Sciences leads this project to build the Maine Algal Research Infrastructure and Accelerator which will serve as a nucleus for algae-based innovation in Maine and catalyze economic growth and workforce development. This state-of-the-art research infrastructure will be used to streamline the exploration of algae's commercial potential — from individual cell-level analysis to product optimization and eventual scaling. The project will lead to the discovery of novel approaches to harness algae as efficient biofactories for synthesizing new high-value products relevant to the "Maine Innovation Economy Action Plan," while aligning strategic collaborations, including with local farmers and algal companies, to create an accelerated network to enhance the agricultural, aquaculture, and pharmaceutical potential of algae in Maine.
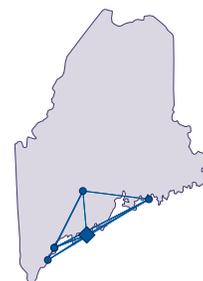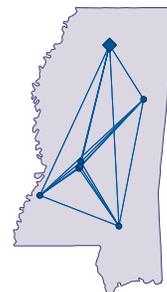
Collaborating institutions: Mount Desert Island Biological Laboratory, University of New England, Colby College, Maine Center for Entrepreneurs, and Gulf of Maine Ventures. NSF Award ID: 2436200.

E-RISE Project Summaries

- **Mississippi — Establishment of the Mississippi Nano-bio and ImmunoEngineering Consortium**

This project, spearheaded by the University of Mississippi, will build capacity in Mississippi for use-inspired R&D of advanced polymer materials and for addressing the scientific, engineering and educational training needs of the nano- and biotechnology industries at a time when these industries are experiencing unprecedented growth. The project proposes to create a robust pipeline for next-generation materials by fostering multidisciplinary research teams to iteratively design, synthesize, and characterize new materials while evaluating their impact on delivery efficacy in relevant disease models. In addition to advancing scientific knowledge in biomaterials research — with a focus on pioneering innovations applicable to healthcare, bioengineering and materials science — this project will establish a comprehensive biomaterials research network across Mississippi.

Collaborating institutions: Mississippi State University, Jackson State University, Tougaloo College, Alcorn State University, the University of Southern Mississippi, and the University of Mississippi Medical Center. NSF Award IDs: 2414442, 2414443, 2414444, 2414445, 2414446, 2414447, 2414448.

- **New Mexico — Research Center for Distributed Resilient and Emergent-Intelligence-Based Additive Manufacturing**

This project, led by New Mexico State University, will enhance New Mexico's competitive edge in the global manufacturing sector by establishing the groundwork for an advanced distributed intelligent additive manufacturing infrastructure. The project will contribute to fundamental knowledge in advanced manufacturing, cybersecurity and machine learning while spurring economic growth in New Mexico and contributing to national efforts to onshore manufacturing. The project will provide an integrated pathway for workforce development in additive manufacturing from middle school to doctoral and postdoctoral levels by intertwining classroom activities with research experience and pedagogical models that promote diversity, inclusion and belonging.
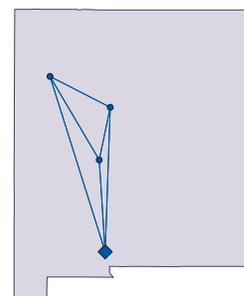
Collaborating institutions: Navajo Technical University, the University of New Mexico, and the New Mexico Institute of Mining and Technology. NSF Award ID: 2417062.

E-RISE Project Summaries

- **Puerto Rico — Cracking the Developmental Blueprint of Life: Omics, Computational Science, and Artificial Intelligence**

This project, led by the University of Puerto Rico-Rio Piedras, will position Puerto Rico as a thriving hub for innovation and economic growth in the life science and biotech/molecular sectors. Faculty from seven institutions will come together to unravel the complexities of developmental biology by examining the evolutionary and developmental framework of butterfly divergence. The project will delve into the fundamental science of evolution and adaptation, seeking to decipher the molecular intricacies that govern cellular processes and organismal development. The novelty of the project lies in the single cell–genomic resolution around which all other molecular information will be integrated using cutting-edge computational and AI approaches. Also included in the project will be workforce development initiatives that integrate STEM education and interventions to cultivate skills for both academic and non-academic careers, in part by generating important resources for the broader scientific community and through outreach activities tailored to K-12 teachers and students.
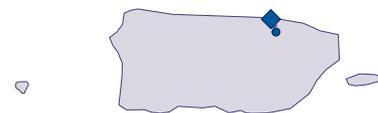
Collaborating institutions: Centro Comprensivo de Cancer de la Universidad de Puerto Rico. NSF Award ID: 2435987.

- **South Dakota — BioNitrogen Economy Research Center**

South Dakota State University is leading this project to build sustainable capacity to leverage abundant atmospheric nitrogen gas and solar energy to create a commercially viable, solar-powered "bionitrogen economy" in South Dakota, relying in part on the knowledge and resources of Native communities about agricultural and medicinal indigenous plants. While alleviating environmental issues of nitrogen pollution in a largely agricultural state, the project will also provide alternatives for the commercial production of nitrogen- and carbon-rich biological products, including fertilizers, nutritional proteins and bioplastics. The project will promote workforce development by integrating K-12 outreach, undergraduate and graduate research programs and partnering with tribal communities.
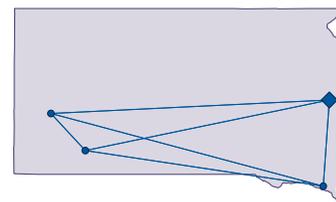
Collaborating institutions and organizations: Oglala Lakota College, South Dakota School of Mines and Technology, the University of South Dakota, and Houdek, an industry partner. NSF Award IDs: 2416911, 2416912.

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