



## Maine EPSCoR

Since 1980, NSF EPSCoR funding has supported ten Track-1 grants and now supports three new NSF EPSCoR RII programs in Maine. The three new E-RISE and E-CORE projects represent a four-year \$23 million investment (with an additional \$17 million if renewed) in Maine's STEM workforce, competitiveness, research capacity, and infrastructure.

### Impact of NSF EPSCoR in Maine

EPSCoR programming has long been a staple in the Maine research community since the inception of the program in 1980. The NSF, NASA, Department of Energy and other branches' EPSCoR programs generate long lasting impacts and sustainable economic growth for Maine's communities.

These programs are responsible for the establishment of many of the state's premier research institutes and centers. Since their founding, centers and institutes have brought in additional millions of dollars of research and development funding. This also helps introduce undergraduates to research early in their academic careers and supports the development of graduate students and postdoctoral fellows.

#### *NSF EPSCoR Track-1 impacts 1980-2024:*

##### **Research**

- 46 new faculty hires
- 5 research centers, 3 institutes and 11 labs
- Over \$203 million in follow on grant awards
- Over 1600 publications

##### **Workforce Development**

- 37 postdoctoral fellows
- 390 graduate students
- 1,279 undergraduate internships
- 372 high school internships

### Maine leads new programs

Maine continues to serve as a leader within the EPSCoR community. The state is one of the first jurisdictions in the nation to be awarded two E-RISE awards and an E-CORE. These awards collectively bring together 28 leading organizations from across Maine together in pursuit of a common goal.

#### **Maine-FOREST \$8 million**

Led by the University of Maine, the RII E-RISE Forest-based Opportunities for Resilient Economy, Sustainability and Technology (Maine-FOREST) award expands the state's research and educational capacity to connect human and ecosystem focused innovations and services.

#### **MARIA \$7 million**

Led by the Bigelow Laboratory for Ocean Sciences, the RII E-RISE the Maine Algal Research Infrastructure and Accelerator (MARIA) award strengthens research infrastructure to serve as a nucleus of innovation potential for algae-based solutions in agriculture, aquaculture, energy, and pharmaceutical sectors.

#### **Maine-SMART \$8 million**

Led by the University of Maine, the RII E-CORE Strengthening Maine's Research Ecosystem and Pathways Through Strategic Capacity Building (Maine-SMART) award supports more than 200 early career faculty and 2,500 undergraduate students at colleges across Maine, and an additional 120 educators and 9,000 K-12 students.

# Success Stories



## A center for innovation and entrepreneurship

The U.S. National Science Foundation (NSF) has awarded the University of Maine and its partner universities \$15 million to create the New England Region Innovation Corps (I-Corps) Hub to accelerate the conversion of scientific discoveries into meaningful economic and societal advances. As part of an effort to expand the NSF-led National Innovation Network, UMaine will collaborate with Brown University, Harvard University, the Massachusetts Institute of Technology (MIT), Northeastern University, Tufts University, the University of Massachusetts Amherst and the University of New Hampshire to form the regional I-Corps Hub. Led by MIT, the hub is eligible to receive up to \$15 million over five years to advance sustainable entrepreneurship, workforce development and economic growth throughout New England.



## Establishing Maine as a center for genetics research

With the RII Track-1 Maine-eDNA completed, their work continues. The program installed a premiere environmental DNA (eDNA) lab at the University of Maine, formed the Maine Center for Genetics in the Environment and has established eDNA as a powerful tool for understanding Maine's aquatic ecosystems. These new insights are helping resource managers, communities and other stakeholders make informed decisions about the environments they work with. Maine-eDNA's work will carry forward through the work of MCGE and everyone involved with Maine-eDNA throughout its length.

# Statewide EPSCoR Funding (Current)

Program/Grant Name	Type / Institution	FY	Cong. District	Award to date
<b>NSF EPSCoR E-RISE RII: Enhancing Maine Forest Economy, Sustainability, and Technology Ecosystem To Accelerate Innovation</b> (collaborative submission) (Lead award PI: Aaron Weiskittel, 2416915)	E-RISE / University of Maine	2024	1/2	\$3,513,444
<b>NSF EPSCoR E-RISE RII: Maine Algal Research Infrastructure and Accelerator</b> (PI: Michael Lomas, 2436200)	E-RISE / Bigelow Laboratory for Ocean Sciences	2024	1	\$4,221,501
<b>NSF EPSCoR E-CORE RII: Strengthening Maine's Research Ecosystem and Pathways Through Strategic Capacity Building</b> (collaborative submission) (Lead award PI: Shane Moeykens, 2412130)	E-CORE / University of Maine	2024	1/2	\$3,978,067
<b>NSF EPSCoR RII Track-2 FEC: Explainable and Adaptable Artificial Intelligence for Advanced Manufacturing</b> (PI: Yifeng Zhu, 2218063)	Track-2 / University of Maine	2022	2	\$4,500,000
<b>NSF EPSCoR RII Track-2 FEC: Harnessing Spatiotemporal Data Science to Predict Responses of Biodiversity and Rural Communities under Climate Change</b> (PI: Brian McGill, 2019470)	Track-2 / University of Maine	2020	2	\$3,995,366
<b>NSF EPSCoR RII Track-2 FEC: STORM: Data-Driven Approaches for Secure Electric Grids in Communities Disproportionately Impacted by Climate Change</b> (PI: Reinaldo Tonkoski, 2316399)	Track-2 / University of Maine	2023	2	\$1,802,109
<b>NSF EPSCoR RII Track-4: NSF: From the Ground Up to the Air Above Coastal Dunes: How Groundwater and Evaporation Affect the Mechanism of Wind Erosion</b> (PI: Luis Zambrano-Cruzatty, 2327346)	Track-4 / University of Maine	2024	2	\$220,284
<b>NSF FDSS Track 2: Building Solar-Terrestrial Physics Capacity at Bates College</b> (PI: Aleksandar Diamond-Stanic, 2347922)	FDSS Track-2 / Bates College	2024	1	\$296,665
<b>NSF EPSCoR Research Fellows: PeptoCross: Crosslinked Peptoids for Biomimetic Materials</b> (PI: Alessia Battigelli, 2429793)	Research Fellow / University of Maine	2025	2	\$235,977
<b>NSF EPSCoR Research Fellows: Advancing National Ecological Observatory Network-Enabled Science and Workforce Development at the University of Maine with Artificial Intelligence</b> (PI: Sydne Record, 2429418)	Research Fellow / University of Maine	2025	2	\$230,552
<b>NSF EPSCoR Research Fellows: Enhanced Functional Deformation Transfer in Elastomer-Shape Memory Alloy Composite Actuators for Soft Robotics</b> (PI: Asheesh Lanba, 2429662)	Research Fellow / University of Southern Maine	2025	1	\$222,890
<b>NSF EPSCoR RII Track-4: Superparamagnetic Iron Oxide Nanoparticles as Recoverable Microwave Susceptors for Pre-hydrolysis of Waste Activated Sludge prior to Anaerobic Digestion</b> (PI: Onur Apul, 2132018)	Track-4 / University of Maine	2022	2	\$130,664
<b>DOE EPSCoR: Next Generation High-Temperature Harsh-Environment Sensors and Materials for Wireless Operation in Advanced Manufacturing and Energy Applications</b> (PI: Mauricio Pereira da Cunha, DE-SC0021981)	DOE EPSCoR / University of Maine	2023	2	\$3,340,000
<b>NASA EPSCoR: Metastable Oxygen Nanobubbles to Advanced Life Support Systems in Space Exploration</b> (PI: Terry Shehata, 80NSSC22M0168)	NASA EPSCoR / University of Maine	2022	2	\$281,419
<b>Total Funds \$26,968,938</b>				