

National Science Foundation EPSCoR programs provide key infrastructure support in order to effect lasting improvements in a jurisdiction's R&D capacity and competitiveness in NSF science and engineering fields.



## NSF EPSCoR in Maine:

Since Maine became an EPSCoR state in 1980, over **\$97M** in NSF EPSCoR grant awards have been received for projects which have significantly impacted Maine's economic development, quality of life, and STEM education. Maine EPSCoR at the University of Maine administers the state's NSF EPSCoR programs. As the state's flagship research and Ph.D. granting institution in science and engineering, UMaine plays a key leadership role in these statewide programs.

Maine NSF EPSCoR infrastructure programs are focused on helping the state's academic institutions to:

- advance scientific knowledge and understanding in areas of key importance to Maine
- integrate research and education to train the next generations in science, technology, engineering, and mathematics (STEM)
- provide innovative K-20 STEM education programs for students, and professional development training opportunities for K-12 teachers and college faculty
- enable research collaborations through improved connectivity, big data capabilities, high performance cloud computing, and visualization
- foster innovative research that can lead to technology transfer and commercialization, and engage in knowledge transfer that can lead to policy and decision-making for a more sustainable future

## NSF EPSCoR Track I Research Infrastructure Improvement Awards:

### FY2014-2019 Sustainable Ecological Aquaculture Network (SEANET) (\$20M NSF)



#### Research:

Balancing wild fisheries, sustainable aquaculture, and other coastal activities can help sustain Maine and grow a prosperous future. Builds a research network to mobilize existing expertise.

#### Workforce Development:

- 10 institutions
- 4 new faculty
- 5 research teams
- 72 investigators
- 20 graduate students
- 100 undergraduate internships

#### Impact:

- Support inshore buoy and sensor system
- Development demonstration farms and support business-led research activity.
- Invests in the future of research on coastal Maine

### FY2009-2014 Maine's Sustainability Science Initiative (\$20M NSF)



#### Research:

Sustainability science research on the intersection of ecological, social, and economic dimensions of landscape change drivers.

#### Workforce Development:

- Over 100 faculty supported at 11 institutions
- 752 graduate, undergraduate, high school research internships
- 14,339 participants in STEM outreach activities

#### Impact:

- Created the Center for Sustainability Solutions
- Over 200 community stakeholder partners
- Knowledge to action focus impacted policy & legislative decisions

## FY2006-2009 Forest Bioproducts Research Institute (\$6.9M NSF)



### Research:

Create and commercialize wood bioproducts for existing and new industries while retaining forest health.

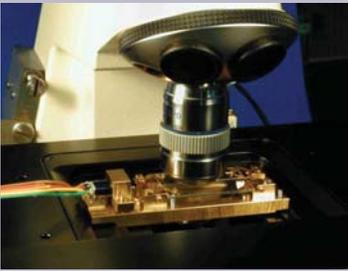
### Workforce Development:

- Over 50 faculty and researchers supported
- 100 graduate, undergraduate, high school research internships
- 5,000 participants in STEM outreach activities

### Impact:

- Created new research institute & technology center
- University/industry tech transfer partnership resulted in major private investment
- Over \$3.5M in new capital equipment for state
- 11 patents

## FY2003-2006 Institute for Molecular Biophysics (\$6M NSF)



### Research:

Development of cutting-edge imaging technologies for biological research.

### Workforce Development:

- 10 researchers and other faculty supported
- 39 graduate and undergraduate internships
- Collaborated with more than 30 other partners

### Impact:

- Ultra-high resolution microscopes
- Novel microscope probes
- In vivo imaging capabilities for molecular processes

## FY1996-1999 Advanced Engineering Wood Composites & Maine Aquaculture (\$5.3M NSF)



### Research:

Bio-based composite engineering research, and aquaculture research.

### Workforce Development:

- 8 faculty supported
- 100+ students a year involved in research

### Impact:

- Seeded the creation of a new wood composites research center
- 12 patents
- Constructed new marine culture laboratory
- Supported aquaculture business incubator

## NSF EPSCoR Other Support:

- **Track 2 - FY2014-2016 (\$3M NSF)** - The New England SusTainability Consortium (**NEST**) project mobilizes the collective capacity of Maine and New Hampshire EPSCoR researchers to focus on the closure of shellfish beds and posting of beach advisories due to high levels of pathogenic bacteria.
- **Track 2 - FY2011-2013 (\$3M NSF)** The Northeast Cyberinfrastructure Consortium (**NECC**) collaborated on building regional cyberinfrastructure (Delaware, Maine, New Hampshire, Rhode Island and Vermont).
- **Track 3 - FY2014-2016 (\$750K NSF)** Broadening participation grant for high school students in research.
- **C2 - FY2011-2013 (\$1M NSF)** Addressed gaps at the seven campuses of the University of Maine System to deliver true end-to-end connectivity between Maine's researchers and the state's network.
- **Co-funding** - Since 1998, Maine EPSCoR has received more than \$22M in co-funded grant awards.

## Summary of Impacts of Maine EPSCoR Programs:

EPSCoR programs have served as a catalyst to initiate and build specific transdisciplinary, center-like programs based at the University of Maine and incorporating partnerships throughout the state and region. Past NSF EPSCoR programs have gone on to become signature R&D centers for the University and the state.