Maine EPSCoR

NSF EPSCoR RII Track-1

Topic Selection Overview

November 30, 2021

Agenda

- 1:00 - 1:15: Welcome & Introduction – *Dr. Joan Ferrini-Mundy, President of University of Maine & Vice Chancellor for Research and Innovation for the University of Maine System*
- 1:15 - 1:35: NSF RII Track-1 Overview – *Dr. Shane Moeykens, ME EPSCoR Director*
- 1:35 - 2:00: Track-1 Selection Process Q&A – *Dr. Shane Moeykens, ME EPSCoR Director & Dr. Kody Varahramyan, Vice President for Research and Dean of the Graduate School at the University of Maine*

Welcome & Introduction

Considerations for selecting the science and technology research themes:

1. Research capacity, excellence, and competitiveness
2. NSF-supported STEM research and education
3. Aligned with science and technology priorities and needs
4. Recognized national or global interest
5. Diverse, well-prepared STEM-enabled workforce
6. Partnerships

Welcome & Introduction

Considerations for selecting the science and technology research themes:

1. Potential for increased and sustainable research capacity, excellence, and competitiveness in the jurisdictions' colleges and universities by building infrastructure
2. Areas of STEM research and education that are supported by the NSF
3. Aligned with the jurisdiction's science and technology priorities and needs
4. Areas of recognized national or global interest
5. Enables development of a diverse, well-prepared STEM-enabled workforce to sustain research competitiveness and catalyze economic development and growth
6. Availability of partnerships with nationally recognized centers of R&D activity, such as federal and industrial R&D labs, NSF-sponsored research centers, and academic institutions with nationally recognized research capabilities, and with awardees in NSF programs that support broadening participation in STEM

Maine's Track-1 History

1980-1987	1990-1993	1993-1996	1996-2000	2000-2003	2003-2006	2006-2009	2009-2014	2014-2019	2019-2024
$4.3M	**$5.5M**	**$8.8M**	**$9.4M**	**$6M**	**$6M**	**$12.7M**	**$20M**	**$20M**	**$20M**
Earth and Marine Science	Global Environ-mental Change	Wood Science and Marine Molecular Biology	Adv. Eng. Wood Composites and Aquaculture	Biosensors, Intel./ Spatial	Institute for Molecular Biophysics	Forest Bio-products	Sustainability Solutions Initiative	Sustainable Ecological Aquaculture Network	Environmental DNA as a Nexus of Coastal Ecosystem
Ar-dating and Heat Flow Lab	Stable Isotope Lab	DNA-sequencing facility Timber Bridge/ FRP Hybrids Project	**Advanced Structures and Composites Center** *(Formerly AEWC)* **Aquaculture Research Institute**	Intelligent Spatial Design Technology Institute (ISTI) housed at **LASST**	Institute for Molecular Biophysics	**Forest Bioproducts Research Institute**	**Sen George J. Mitchell Center for Sustain-ability Solutions**	**Aquaculture Research Institute**	**Maine Center for Genetics in the Environment** increased capacity for eDNA innovation

State EPSCoR Committee

- Activities in Maine are overseen by the Maine Innovation Economic Advisory Board (MIEAB) – the “State EPSCoR Committee”
- MIEAB is comprised of individuals from Maine's education, research, and business communities, and state government
- New MIEAB appointments are pending from Governor Mills’ office

Don Perkins
MIEAB Chair

President/CEO
Gulf of Maine Research Institute (GMRI)

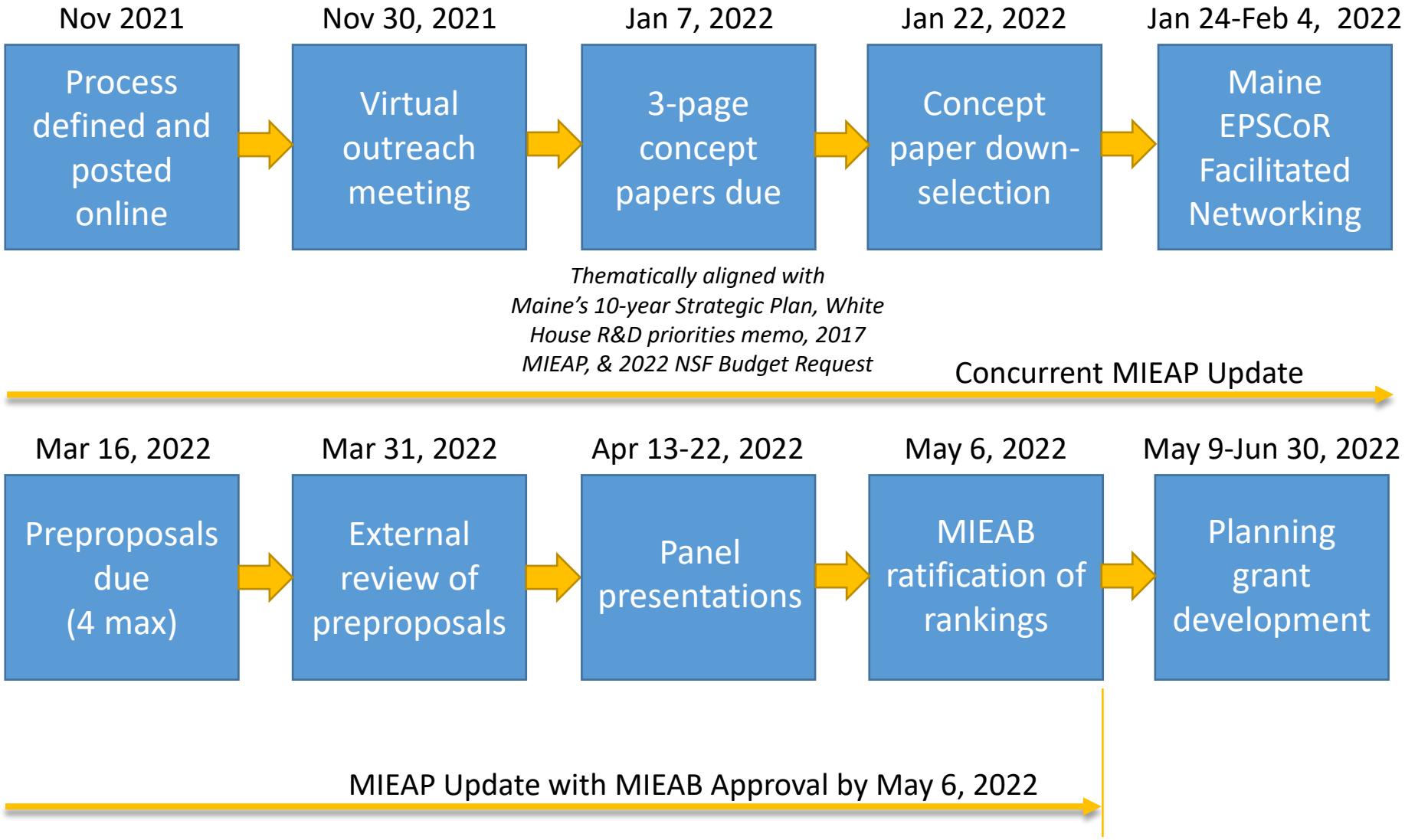
Brian Whitney
MIEAB Member

President
Maine Technology Institute (MTI)

Samantha Warren
“Ex Officio Member”

Director of Government & Community Relations
UMS

2022 Topic Selection



Maine EPSCoR Track-1 Development Process

https://umaine.edu/epscor/track-1-rii-development-process/

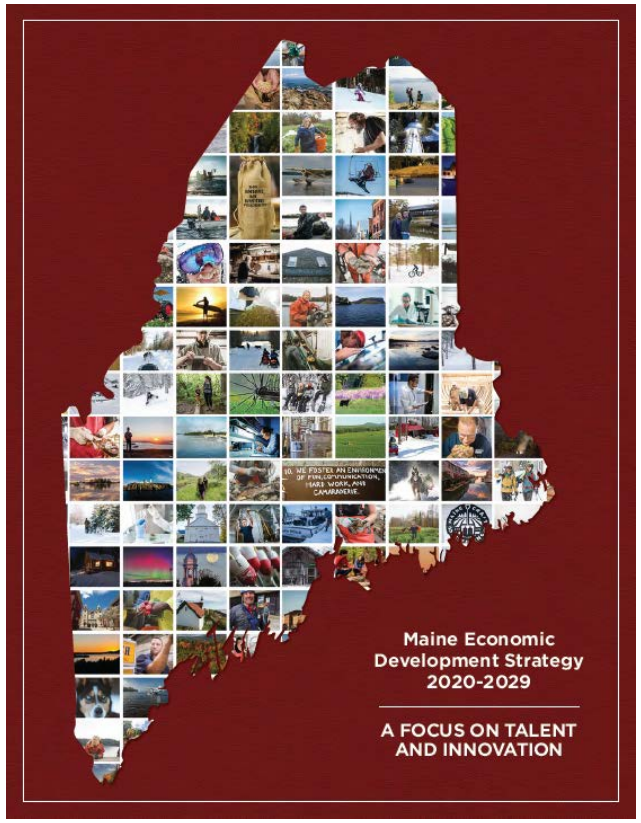
Timeline

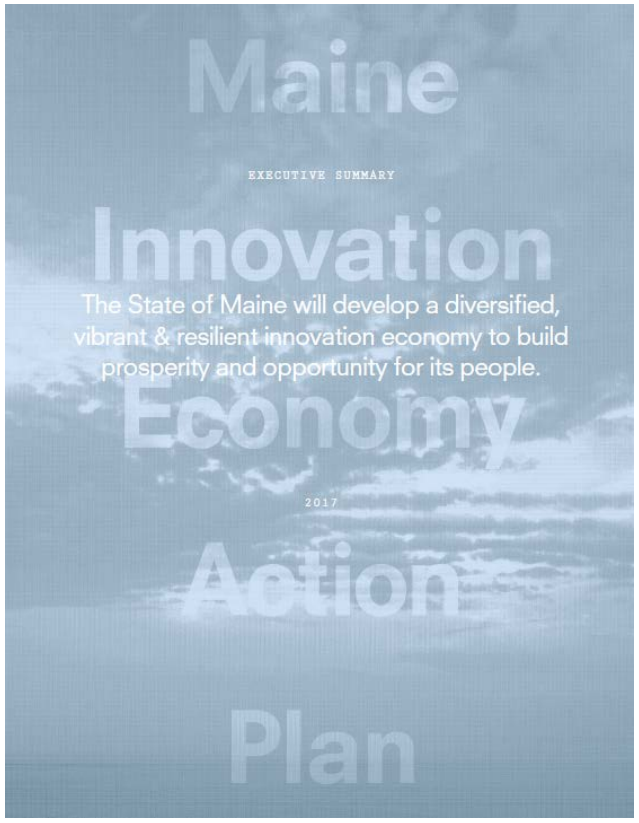
- Informational Presentation 1:00-2:00, November 30, 2021
- **Phase I – Concept Papers (due at 5:00 pm, January 7, 2022)**
- Phase II – Concept Paper Evaluation (completed by January 21, 2022)
- Phase III – Maine EPSCoR Facilitated Networking & Transdisciplinary Team Formation (January 24 – February 4, 2022)
- Phase IV – Pre-proposals (commence on February 7 and due at 5:00 pm, March 16, 2022)
- Phase V – External Review (completed by March 31, 2022)
- Phase VI – Review Panel Presentations (April 13 – April 22, 2022)
- Phase VII – MIEAB Ratification of Topic Selection (completed by May 6, 2022)
- Phase VIII – Planning Grant Development (May 9 – June 30, 2022)
- Phase IX – Proposal Development (July 2022 – August 2023)
- Phase X – Proposal Submission (August 2023)
- Phase XI – Award notification (Summer 2024)
- Phase XII – Project begins (Fall 2024)

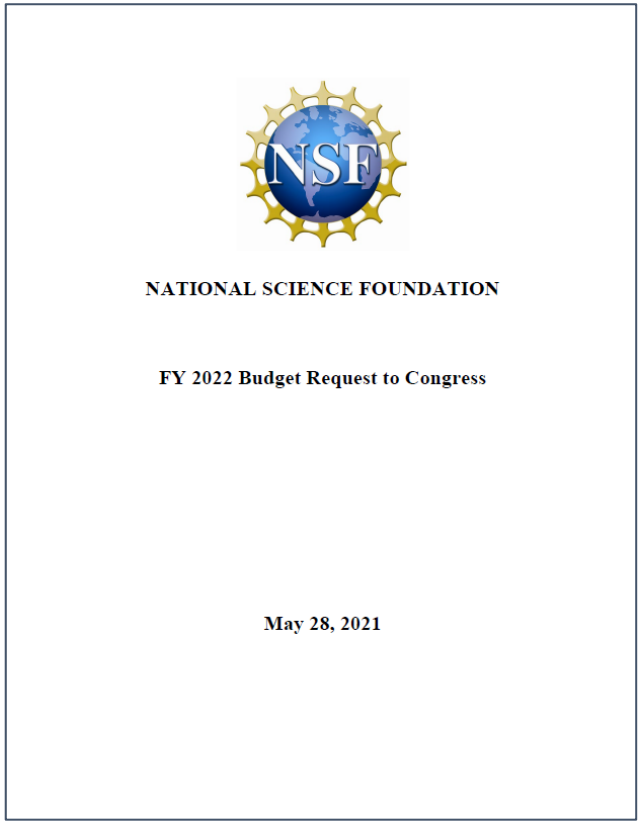
Concept Paper Outline

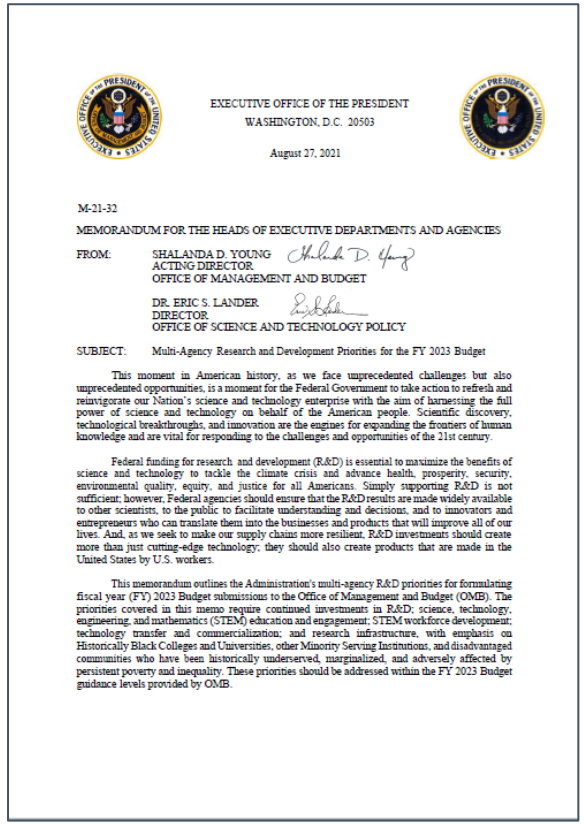
1. Indicate the general focus area of the research that you are proposing.
2. Indicate the contact person for this concept.
3. Indicate potential key personnel who could be part of the effort to address this research concept. (only include individuals who have granted permission to be listed)
4. Intellectual Merit – provide a brief description in each of the sections, relating to the research focus that you have identified as a current problem/need in Maine.
5. Broader Impacts – provide a brief description in each of the sections describing the likely impacts and outcomes that can be achieved.

Priority









Pending revision, but revision will be done consistently with 10-year Economic Development Strategy

Maine 10-year Economic Strategy

Opportunities

- Bio-based alternatives (Manufacturing / Forest products)
  - advanced building materials
  - bioplastics
  - biofuels
- Climate change (Technical services / Making manufacturing)
  - on and offshore wind power
  - tidal power
  - battery development
  - solar development
- Growing demand for safe, climate responsible food source (Technical services/making manufacturing/food systems and marine resources)
  - finfish vet services
  - shellfish vaccines
  - testing for exports
  - sustainable aquaculture
  - innovations

Not a direct fit with NSF Budget Request but could indirectly link through Climate Science, Biotechnology, or AI

NSF FY2022 Budget Request Priorities

- Enhancements to fundamental research (all areas, key word “fundamental”)
- Strengthening US leadership in emerging technologies (industries of the future)
  - Advanced manufacturing, AI, Advanced wireless, Biotechnology, Quantum information science
- Advances in equity in science and engineering – underrepresented participation
  - Includes K-12 STEM advancement
- Advances in climate science and sustainable research
  - Climate science and clean energy, including socio-economic factors
    - Understanding climate impacts on US’s ecosystems (coastal, forestry)
    - Implications for Arctic

Emphasis on Infrastructure Improvement

Research vs. capacity building - 2

- Solicitation:
  - "In preparation for submitting a proposal, the jurisdictional EPSCoR steering committee is expected to have conducted a comprehensive analysis of the **jurisdiction's R&D strengths, the opportunities that exist to further develop R&D capacity, and the challenges** that must be overcome to take advantage of those opportunities."
- Activity:
  - **Analyzing how much of the future work would be research (with the needed infrastructure in place) and how much would be research infrastructure improvement (effort toward establishing the equipment and human resources needed for research excellence in the chosen topical area).**

Unknown Variables

- 80% decline rate from 2020 Track-1 submissions
- Future of EPSCoR Committee Report to emerge in 2-3 months
- New incoming NSF EPSCoR Director
- Lack 100% clear understanding re: NSF EPSCoR's renewed emphasis on capacity building

The good news!

- Maine's strategic priorities have never been better documented

Information Requests

- Maine EPSCoR Office: maine.epscor@maine.edu, 207.581.3312
- Shane Moeykens: shane.moeykens@maine.edu, 207.944.3109
- Invitation to conduct follow-up meetings with your team, unit, or institution

Thank You!

Questions?