

UNH Pre-Proposal Internal Competition Guidelines
National Science Foundation (NSF)
EPSCoR Research Infrastructure Improvement Program Track-1 (RII Track-1)

UNH Pre-Proposal Deadline:

Monday, December 6, 2021, 5:00 p.m.

UNH Notification to Applicants:

Friday, January 7, 2022

NSF Deadline for Full Proposals:

Expected mid-August 2022

Overview ---- The current RFP has not been released. Please see the most recent solicitation - [21-586](#) – for details, as we do not expect the program to change substantially.

The Established Program to Stimulate Competitive Research (EPSCoR) is designed to fulfill the mandate of the National Science Foundation (NSF) to promote scientific progress nationwide. Through this program, NSF facilitates the establishment of partnerships among academic institutions and organizations in governmental, non-profit, and commercial or industrial sectors that are designed to effect sustainable improvements in a state's research infrastructure, Research and Development (R&D) capacity, and hence, its R&D competitiveness.

Research Infrastructure Improvement Track-1 (RII Track-1) awards provide up to **\$20 million total over five years** to support research-driven improvements to a state's physical and cyber infrastructure and human capital development in topical areas selected by the state's EPSCoR steering committee as having the best potential to improve future R&D competitiveness.

Successful RII Track-1 proposals must establish a vision for how the planned effort will substantively enhance the R&D competitiveness of the state's colleges and universities. Ultimately, the expectation is that the RII Track-1 project will improve New Hampshire's R&D competitiveness in the targeted area(s) at the national or regional level. This improved competitiveness is expected to lead to increased success in securing additional non-EPSCoR research support, more effective STEM education and workforce development opportunities that engage diverse audiences across the state, and stronger partnerships at the individual and institutional levels both within New Hampshire and beyond.

With the current NSF EPSCoR RII Track-1 project, [NH BioMade](#) (PI Dr. Brad Kinsey), scheduled to end in August 2023, New Hampshire is eligible to submit a proposal seeking funding for a new RII Track-1 project to run from 2023 - 2028. The below process will inform selection of the one project team that will represent New Hampshire in the upcoming competition.

Eligibility and Requirements

- The PI must hold a faculty appointment at UNH, as UNH is designated as the lead institution for NSF EPSCoR Track-1 projects in the state of New Hampshire.
- The core proposing team must represent a network of higher education institutions in New Hampshire. At least one Co-PI must be from Dartmouth College. Involvement of faculty/researchers from primarily undergraduate and/or community college partners in the state is strongly encouraged. A list of potential partner institutions can be found [here](#). **The RII Track-1 is not designed for individual, single institution, or small group faculty research proposals.**
- The area(s) of focus proposed must be in alignment with [New Hampshire's Science and Technology Plan](#), which details nine topic areas specifically related to NSF priorities: Biotherapeutics; MedTech; Quantitative Biology and Bioinformatics; Environmental Remote Sensing; Systems Networks; Data Analytics, Artificial Intelligence, and Machine Learning; Advanced Materials; Computer and Electronic Components; and Renewable Energy. Projects may include one or more of these topics.
- Proposed research should be hypothesis- and/or problem-driven. Research in areas of recognized national or global interest is encouraged. Appropriate research topics are those that benefit from a comprehensive and integrative approach, typically relating to a scientific area of significant regional or state importance. As noted above, the proposed research and capacity-building activities must align with the STEM research priorities identified in New Hampshire's S&T Plan. All proposed research and capacity-building activities are expected to meet NSF's high standards for intellectual merit and broader impacts.

Because New Hampshire is limited to 1 proposal to NSF, UNH is conducting an internal pre-proposal competition.

UNH PRE-PROPOSAL INTERNAL COMPETITION REQUIREMENTS

Interested UNH applicants must submit a pre-proposal no later than **5:00 P.M. on Monday, December 6, 2021**.

Pre-proposals will be submitted through the Research Office's web-based Competition Portal accessible at <https://unh.infoready4.com/#competitionDetail/1854782>

- The portal works best using the latest supported version of Chrome, Firefox, or Safari as your browser when working from a laptop or desktop PC or Mac. Compatibility with other browsers and with tablets and other mobile devices is not guaranteed.
- When you log in, be sure you enter your UNH username in this format: `username@ad.unh.edu`
- If you encounter problems logging in directly, sign on to the [UNH VPN](#) first, then access the InfoReady portal.

For questions regarding using the Internal Competition Portal, please contact [Lynnette Hentges](#).

The pre-proposal (uploaded as a single PDF document with minimum of 11-point font and 1" margins) **MUST** include all of the following in order to be considered:

- 1) A **1-page cover sheet** that lists, in bullet form:
 - a) Title
 - b) PI name, with UNH title and department affiliation
 - c) Name, title, department, and organization for core contributors (i.e., anticipated Co-PIs and key personnel)
- 2) A **10-page Project Description**, consisting of:
 - a) **Status and Overview** (1 page) - RII Track-1 proposals are unique in their statewide scope and complexity; in their integration of individual researchers, institutions, and organizations; in their development of both research capacity and research excellence; and in their role in developing the diverse, well-prepared, STEM-enabled workforce necessary to sustain research competitiveness and catalyze economic development and growth in the state. Provide a convincing vision for your proposed project and describe how the project outcomes will both improve statewide academic research competitiveness and catalyze economic development in New Hampshire. In doing so, please briefly describe alignment of the project with one or more of the nine STEM research priorities in [New Hampshire's Science & Technology Plan](#).
 - b) **Research and Capacity-Building Program** (5 pages) - Describe the scientific hypotheses, goals, and research and training methods (laboratory, field, theoretical, computational, or other) such that experts in the field of proposed research or closely related fields may accurately judge the intellectual merit and broader impacts of the proposed research. Also, clearly identify elements of capacity building, including a summary of the personnel and equipment already available in the state and what personnel and equipment would need to be acquired in order to do the proposed work within the five-year time frame of the project.
 - c) **Education and Workforce Development Plan** (2 pages) - Describe planned STEM workforce development and education activities that are integrated with the research program. Plans should include opportunities for faculty development (particularly for early-career faculty) and for student training. The proposal should describe mentoring and professional development of students, junior or postdoctoral researchers, and early-career faculty.
 - d) **Broadening Participation Plan** (1 page) - Describe plans for broadening the participation not only of underrepresented minority groups but also of other groups within the state whose eventual participation in the STEM enterprise would benefit New Hampshire. Example activities include those that: support the STEM education and careers of women, underrepresented minorities, persons with disabilities, and veterans; develop student employment and leadership options; identify innovative strategies for faculty recruitment and retention; and expand organizational participation. Providing opportunities to engage in STEM for students who are in the first generation of the family to attend college, or those from economically disadvantaged or rural populations may also be appropriate.
 - e) **Project Management** (1/2 page) - Describe the ability and experiences of the PI and team in managing large interdisciplinary programs/projects and relevant prior NSF support. Describe any past relationships that will be leveraged and how and how often the partners will interact, share information, and make decisions throughout the project.
 - f) **Sustainability** (1/2 page) - Describe a plan for sustaining the infrastructure and research education activities beyond the duration of RII Track-1 support.
- 3) An [NSF-style biosketch](#) for the PI, Co-PIs, and all core contributors named in the pre-proposal.

UNH PRE-PROPOSAL APPLICATION REVIEW PROCESS

UNH will contract with an external consulting firm with substantial experience developing and reviewing proposals for the NSF EPSCoR program. Using the NSF EPSCoR RII Track-1 review criteria (detailed below), the firm will secure external reviews from a network of qualified disciplinary experts and advise the UNH Senior Vice Provost for Research, Economic Engagement, and Outreach on project selection. Please direct questions to Mark.Milutinovich@unh.edu.

NSF EPSCoR RI Track-1 Merit Review Criteria

Reviewers will be asked to consider what the proposers want to do, why they want to do it, how they plan to do it, how they will know if they succeed, and what benefits could accrue if the project is successful. These issues apply both to the technical aspects of the proposal and the way in which the project may make broader contributions. To that end, reviewers will be asked to evaluate all proposals against two criteria:

- **Intellectual Merit:** The Intellectual Merit criterion encompasses the potential to advance knowledge; and
- **Broader Impacts:** The Broader Impacts criterion encompasses the potential to benefit society and contribute to the achievement of specific, desired societal outcomes.

Additional Solicitation Specific Review Criteria

(Note: For the purpose of this competition, the term “jurisdiction” refers to the state of New Hampshire.)

Research Capacity – What is the potential of the project to advance the relevant fields of science and engineering while simultaneously enhancing research competitiveness and developing research capacity and infrastructure (including physical, cyber, and human resources) in the jurisdiction? What is the potential of the project to increase the capacity of the participating organizations and capability of project participants to propose and implement research activities in the future? How will the diversity of institutional types within the jurisdiction benefit from the proposed enhancement of research capacity?

Jurisdictional Impacts – How well aligned are the project's research and capacity-building activities with the STEM research priorities described in the jurisdiction's S&T Plan? What is the potential to achieve meaningful and sustained impacts within and throughout the jurisdiction with respect to education capacity (including workforce preparation), economic development (including innovation, technology transfer, and potential commercialization), and quality of life?

Workforce Development – What is the potential to enhance research and education capacity through the recruitment, mentoring, and professional development of students, junior researchers, and faculty (including early career)? What novel and effective ways are proposed to broaden the participation of women and minorities underrepresented in STEM (also: persons with disabilities, students who are in the first generation of the family to attend college, or those from economically disadvantaged or rural populations), especially in the proposed area(s) of research? How well will the project enhance participation and research capacity at non-research intensive and minority-serving institutions, including primarily undergraduate institutions (PUIs), 2-year institutions, Historically Black Colleges and Universities (HBCUs), Hispanic Serving Institutions (HSIs), and Tribal Colleges and Universities (TCUs)?

Integration of Project Elements – How well are the project elements (especially education, workforce development, and broadening participation) aligned and integrated with the research and capacity-building activities?