



To: Distribution List

From: Faculty Research Development Office (FRDO)
Office of the Vice President for Research

Subject: Rapid Limited Competition: January 2024 round - NSF: EPSCoR Research Incubators for STEM Excellence Research Infrastructure Improvement Program (E-RISE RII) NSF 23-588

Date: 8/17/2023

Dear UNM Researchers,

The EPSCoR Research Incubators for STEM Excellence Research Infrastructure Improvement (E-RISE RII) Program is a new program that responds directly to input from recent national studies and legislation, including the 2022 2M Study EPSCoR, Envisioning the Future of NSF EPSCoR report, and the CHIPS and Science Act of 2022 (Public Law 117-167). E-RISE RII, which focuses on the development and sustainability of EPSCoR-eligible jurisdictions' research capacity and competitiveness in a scientific topical area, is intended to supplant the NSF EPSCoR RII Track-1 Program, which will be archived in fiscal year 2024.

The E-RISE RII program supports the incubation of research teams and products in a scientific topical area that links to research priorities identified in the submitting jurisdiction's approved Science and Technology (S&T) Plan. E-RISE RII invites innovative proposals that will lead to development and implementation of sustainable broad networks of individuals, institutions, and organizations that will transform the science, technology, engineering and mathematics (STEM) research capacity and competitiveness in a jurisdiction within the chosen field of research. E-RISE RII projects must be designed to incubate (i) areas of research capacity building within a chosen research topic; (ii) development of a skilled workforce that is relevant to the project and its outcomes; (iii) promotion of diversity, equity, access, and a culture of inclusion of different types of academic institutions (see below) and non-academic sectors (e.g., industry and government); (iv) integration of the research with societal impacts in a time-bound manner; and (v) sustainability of a clear pathway towards preserving the resulting research incubator's team and products beyond E-RISE RII funding.

The anticipated funding amount is up to \$31,500,000 annually, to support up to 18 newly funded awards for the first four years. The number of awards is approximate and subject to the availability of funds and quality of the proposals submitted. Funding requests may be for a maximum total budget of \$7,000,000 over the first four (4) years and a maximum of \$4,500,000 over the subsequent three-year renewal period, as applicable. More details can be found in the program solicitation: <https://www.nsf.gov/pubs/2023/nsf23588/nsf23588.htm>.

The first deadline for submitting full proposals to the agency is **January 16, 2024**, which substantially accelerates the normal 2-year preparation timeline. We only anticipate well-formed state-wide groups will be able to respond to this call, but less-well-formed groups are welcome to submit in preparation for more frequent opportunities than in the past (closer to annual than every 5 years, but impacted by successful proposals). For example, there will be a second round in the summer of 2024 that will have a different limited competition designed based on outcomes of the first round and any program modifications from NSF.

This is a limited competition. **Only one submission per institution or organization is allowed where the institution or organization serves as the lead either on a single proposal with subawards or as the lead on a set of separately submitted collaborative proposals.**

There is no limit on the number of submissions per jurisdiction, but all will need to be coordinated by the NM EPSCoR office. We are anticipating that more than one proposal will be advanced from NM in a coordinated manner. Each of these would be led by a different institution, but will also substantially involve all three research institutions and the state as a whole. Since these are smaller than the prior Track 1 EPSCoR program, we believe that more than one could be funded in the first year. We will be conducting a two-step internal competition to ensure we have a review committee in place by the pre-proposal deadline. **You must complete both steps if you are interested in participating.**

STEP ONE: Please submit your 200-word **statement of interest** by **10 am MST on August 28, 2023** via UNM's [InfoReady Review portal](#). This is a *required* step and no late submissions will be considered.

Statements of interest must include: topic title, lead institution, partner institutions (minimum of UNM, NMT, and NMSU), lead PI, and explain why this is needed for the state of NM and how it fits with the State's science & technology plan (see the attached NM ST Plan following this letter).

STEP TWO: Submit a rapid response 2-page pre-proposal that briefly describes the following:

- 1) Collaborating institutions
- 2) Vision and goals of the collaboration
- 3) A statement of the research objectives and methods to be employed
- 4) How it will address the strategic approaches of the NM Science and Technology Plan
 - Investing in Key Infrastructure
 - Developing the Science and Technology Workforce
 - Fostering Innovative Partnerships
 - Accelerating Commercialization of Intellectual Property
 - Building Fundamental and Applied Research Capacity in Existing and Emerging Areas that Align with New Mexico's Economic Development Priorities. New Mexico has identified high priority areas of: Sustainable and Green Energy; Intelligent Manufacturing; Biosciences; Cybersecurity; Aerospace; Sustainable & Value-Added Agriculture; Global Trade; Film & Television

Please submit your 2-page pre-proposal (plus abbreviated budget and 2-page CV for all personnel; 11-point font, PDF format) by **10 am MST on September 1, 2023** via UNM's [InfoReady Review portal](#). You will receive an email when the InfoReady competition has been converted from the SOI application

to the pre-proposal application, but you can work on your documents outside the system before that. No late submissions will be considered.

These rapid response proposals will help UNM coordinate with the NM EPSCoR office and other institutions to develop the January 2024 application strategy. The selected team will be supported to create a strong application during the fall term.

Should you have any questions please feel free to contact us at limited@unm.edu.

If you are affiliated with HSC, please contact HSC Limited Competition at HSC-LimitedComps@salud.unm.edu for more information.

New Mexico Science & Technology Plan

Created and Endorsed by the State Committee for the New Mexico Established Program to Stimulate Competitive Research (EPSCoR); effective 19 July 2021

Vision

New Mexico envisions the state as a global leader in science and technology research and development that support a robust statewide economy.

Mission

New Mexico will accomplish its vision through strategic investments in infrastructure; developing a diverse, well-educated and qualified technical and research workforce; fostering innovative partnerships across the relevant business, industry, educational, governmental, and non-governmental sectors; and focusing research and development efforts on areas that align with the State's economic development priorities.

Strategic Approaches

Five principal approaches will be followed to realize our science and technology objectives.

- 1) *Invest in Key Infrastructure.*** New Mexico will enhance research capacity through strategic investments in critical physical infrastructure such as state-of-the-art laboratories, advanced instrumentation, expansion of research programs and centers, high-performance computing and data/information infrastructure, and broadband internet.
- 2) *Develop the Science and Technology Workforce.*** New Mexico will promote the development of a well-trained, competitive workforce by supporting innovative STEM education programs and experience-based training for secondary and post-secondary students; involving the public in STEM via engaging museum and informal science activities, and expanding the participation across all demographic groups and institutions, especially those that are underrepresented in STEM, within the State.
- 3) *Foster Innovative Partnerships.*** New Mexico will foster and strengthen partnerships that can amplify research and development by expanding collaborations among colleges and universities, National Laboratories, businesses, and other governmental and non-governmental entities.
- 4) *Accelerate Commercialization of Intellectual Property.*** New Mexico will engage with Councils of Government, State and Federal governmental entities and business and industry leaders to accelerate the generation and commercialization of intellectual property created by academic and Laboratory scientists.
- 5) *Build Fundamental and Applied Research Capacity in Existing and Emerging Areas that Align with New Mexico's Economic Development Priorities.*** New Mexico has identified high priority research and development needs that exist in eight key industries within the State.

- **Sustainable and Green Energy.** Develop new methods to harness and utilize sustainable energy from renewable sources such as algal biofuels, microgrids, solar and wind energy, geothermal sources, hydro power, hydrogen, and fuel cells.
- **Intelligent Manufacturing.** Innovate advanced intelligent technologies to enable rapid manufacturing of high-quality products, support dynamic production of personalized product demands, and optimize production and supply chain networks. Such innovation will combine knowledge from many fields including additive manufacturing, artificial intelligence and computer science, engineering, optics, nanotechnologies, physics, quantum materials and quantum information science, robotics, and manufacturing hardware and software development.
- **Biosciences.** Enhance knowledge of arid ecosystems, forecast dryland resilience to environmental change, and develop mitigation strategies using tools such as advanced sensor networks, artificial intelligence, and machine learning to monitor the dynamics of socio-ecological systems over space, time, and multiple scales of biological organization. Study fundamental health challenges at the organismal, cellular, and molecular levels, through the disciplines of biochemistry, bioimaging, molecular biology, biomedical engineering, and genetics to identify, understand, and treat diseases emerging in response to pathogens, and environmental and genetic causes.
- **Cybersecurity.** Create new approaches for protecting computers, networks, electronic communication systems, databases, and the facilities, instruments and systems that rely on these technologies from unauthorized access, attacks, and other threats, as well as develop a workforce to support Federal, State and Private Sector activity within the State.
- **Aerospace.** Foster and build on extant collaborative hubs for space engineering, manufacturing, testing, and launching of spacecraft. Enhance infrastructure and knowledge of supporting technologies such as advanced optics, high technology materials, communication systems, space vehicles, and autonomy.
- **Sustainable & Value-Added Agriculture.** Study the coupled agricultural-environmental-human system to identify and develop resilient, diverse, and more productive combinations of crops, livestock, and arid rangeland systems that increase productivity, enable sustainable food-value chains and water security, improve resilience of food infrastructure, and reduce hunger and malnutrition, thereby improving quality of life for all communities in the state and beyond. Vision realization through sustainable farming and ranching, precision and conservation agriculture, climate smart strategies, and improved genetics requires advanced approaches including genetic studies, advanced sensing and automation, artificial intelligence and data-driven decision support systems for stakeholders and policy makers.
- **Global Trade.** Develop an improved understanding of the complex global trading system and its impacts on the state. Although the dollar value of imports and exports has traditionally driven the efficacy of trade policy measures, this is only one factor of trade in an increasingly connected world. Developing a robust, multi-disciplinary approach to better understand global trade more holistically (e.g., considering supply chains, migration, immigration, pollution, disparate environmental rules, equity, and social justice)—provides improved information to help guide state policy and improve the economy.
- **Film & Television.** Develop the animation, visual effects, imaging technologies, and artificial intelligence and trained workforce to support the art, craft, and business of storytelling through digital filmmaking, digital arts, and other technology-supported and technology-driven forms of storytelling and creative expression.