NASA Kentucky EPSCoR Research Area (RA) 2018 Request for Pre-Proposals

Announcement: RFP-18-002

Release Date: April 20, 2018

Telecon for Proposers: 3:30 pm ET, Tuesday, May 15, 2018
Pre-proposals Due: 4:30 pm ET, Tuesday, June 12, 2018
Pre-proposal files submitted online at nasa.engr.uky.edu

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Proposal forms, FAQ, and additional information available:
nasa.engr.uky.edu/epscor and
nasa.engr.uky.edu/requests-for-proposals

NASA KY EPSCoR RA 2018 Request for Pre-Proposals

NASA EPSCoR Research Area Award Overview

The National Aeronautics and Space Administration (NASA) Office of Education, in cooperation with NASA's four Mission Directorates (MD) (Aeronautics Research, Human Exploration and Operations, Science, and Space Technology) and ten Centers, solicits proposals for the NASA Established Program to Stimulate Competitive Research (EPSCoR). Each funded NASA EPSCoR proposal is expected to establish research activities that will make significant contributions to the strategic research and technology development priorities of one or more of the MD or Centers and contribute to the overall research infrastructure, science and technology capabilities, higher education, and/or economic development of the Kentucky EPSCoR jurisdiction.

The 2018 NASA Cooperative Agreement Notice (CAN) is expected to be available at nspires.nasaprs.com in summer 2018. Prior to its release, proposers may refer to the previous RA CAN (NNH17ZHA002C 2017) for descriptions of the national program objectives and proposal guidelines.

NASA Kentucky invites pre-proposal submissions for the in-state selection of one proposal to submit to the national EPSCoR RA solicitation addressing the mission interests of NASA and state needs of Kentucky

Deadlines: Submit pre-proposal files online at nasa.engr.uky.edu by **4:30 pm ET, Tuesday, June 12, 2018**.

Number of Pre-Proposals Selected: One pre-proposal will be selected for development into a full proposal and submitted by NASA Kentucky as Kentucky's entry in the national competition. The pre-proposal submission and selection process will be conducted according to guidelines and timeline described below.

Anticipated Size of Awards: Researchers (designated as the Science PI) may request up to $675,000 in Federal funds over three years with full indirect costs (F&A) and $225,000 in state funds over three years without F&A. Federal funds must be cost-shared at a level of at least 50% with in-kind and/or non-Federal funds. The KY Statewide EPSCoR Committee typically allocates cost-share funds for the EPSCoR Research Area projects (pending availability of funds), should a project be selected by NASA for federal funding. Additional cost-share is viewed favorably in the national competition. A sample budget calculation is available in the FAQ at nasa.engr.uky.edu/epscor.

Eligibility: Pre-proposals will be accepted from institutions of higher education in Kentucky. Eligibility is *not* limited to NASA Kentucky Space Grant Consortium Affiliate Institutions. US Citizenship *not* required.

Period of Performance: NASA EPSCoR will support RA awards up to three years with an estimated start date in January 2019.

Timeline:

Teleconference for interested proposers (optional)	3:30 pm ET, Tuesday, May 15, 2018
Pre-Proposal Submission Deadline	4:30 pm ET, Tuesday, June 12, 2018
Pre-Proposal Selection Announcement	Anticipated July 2018
Full Proposal Submission to NASA via NSPIRES	Anticipated September 2018

Additional information and FAQ: nasa.engr.uky.edu/epscor

Optional Teleconference for Interested Proposers: Interested researchers may participate in a conference call at 3:30 pm ET, Tuesday, May 15, 2018 to learn more about the submission and selection process, features of past successful proposals, and budget structure.

Call-in number: (877) 394-0659 Passcode: 7272187598

General Guidelines: Pre-proposals that omit required materials or exceed page limits are considered non-compliant and may be rejected without review. Failure to complete proposed work on prior NASA Kentucky projects will be taken into consideration in selecting proposals. By submitting to this RFP, the proposer acknowledges that NASA Kentucky reserves the right to request backup financial information at any time during the course of an awarded project.

- *Special Purpose Equipment* may be purchased or used as cost-share.
- *General Purpose Equipment* may not be purchased or used as cost-share.
- *Travel* funds may be used for foreign and domestic travel as specified in NASA CAN.
- *Cost-share* must be 50% from non-Federal sources.

Submission Instructions

Pre-proposal forms are available at nasa.engr.uky.edu/requests-for-proposals/forms. All pre-proposals must be submitted as PDF files via the NASA KY website. Please title the pre-proposal documents according to the specified file naming convention, in which **PI** is the last name of the Science-PI.

- ☐ *SIGNED COVER PAGE:* Scan the signed original and save as PDF (filename format: PI_ERA_Cover_2018.pdf)
- ☐ *PRE-PROPOSAL PROJECT DESCRIPTION:* (filename format: PI_ERA_Project_2018.pdf)
  - 12 point font, 1 inch margins, single spaced
  - 10 page limit - See guidelines for required content
  - Additional pages - See guidelines for list of documents

Submit proposals online at nasa.engr.uky.edu by **4:30 pm ET, Tuesday, June 12, 2018**

Pre-Proposal Review Process

The NASA KY EPSCoR Subcommittee and content specialists from outside the jurisdiction will review pre-proposals and rate them based on the following criteria:

- INTRINSIC MERIT (40%)
  - Proposed research
  - Prior research
- NASA ALIGNMENT AND PARTNERSHIPS (40%)
  - Relevance of proposed research to NASA and Kentucky priorities
  - Sustainability - specific plans for building partnerships and continued funding
  - Strength of NASA and industry collaborations
  - Diversity (institutional and personnel)
- MANAGEMENT: Management and evaluation; successful and timely completion of prior proposed NASA Kentucky projects and reporting (10%)
- BUDGET: Reasonableness of budget narrative (10%)

The review process will consider funding history and prior reporting compliance of the research team to assess their readiness to propose to the national competition. During review, the Director will contact NASA collaborators identified in the pre-proposal to evaluate strength of partnership and involvement in pre-proposal development. Note: In the national competition, strength of partnership is a major factor. As a panel, reviewers will recommend to the NASA KY EPSCoR Director one pre-proposal for development into a full proposal. The selected research group will work with the Director to prepare the full proposal for submission via NSPIRES. Feedback on pre-proposals not selected will be provided.

Research Alignment and Collaboration

Proposals should align with national NASA EPSCoR Program objectives and the Agency's missions and research as well as the interests of the state of Kentucky. See the following for more information on NASA and programmatic alignment. Also see NASA Areas of Interest, available on the NASA KY website.

Kentucky Statewide NASA EPSCoR Program Objectives

The statewide Kentucky EPSCoR Program mission is to enhance research and intellectual capacity of the state's universities and colleges by building and coordinating strategic investments in human capital necessary for Kentucky to excel in Federal R&D funding competitiveness. Derived from this statewide mission, NASA Kentucky EPSCoR has goals to enhance capacity through strategic investments focused on NASA-priority research areas and competitiveness for non-EPSCoR funding.

A key factor in achieving these goals is initiation of relationships between Kentucky's and NASA's researchers that develop into partnerships. Every aspect of the program emphasizes the process of relationship building, including the involvement of early-career faculty in helping to solve NASA technical problems.

NASA KY EPSCoR investment is focused on NASA priorities including Aeronautics, Science, Human Spaceflight and Space Technology missions, ISS National Laboratory, and lunar exploration, to develop researchers in Kentucky who are nationally and internationally recognized for contributions to their fields.

Equally important to building research capacity are the resulting contributions to economic development evidenced by securing non-EPSCoR follow-on research funding and supporting aerospace industrial development and associated job creation. Growth in economic development as a result of the NASA EPSCoR investment is therefore also a jurisdictional emphasis underlying all aspects of the program.

National NASA EPSCoR Program Objectives

- Contribute to and promote the development of research infrastructure in NASA EPSCoR jurisdictions in areas of strategic importance to the NASA mission.
- Improve the capabilities of the jurisdictions to gain support from sources outside the NASA EPSCoR program.
- Develop partnerships among NASA research assets, academic institutions, commercial space programs, and industry.
- Contribute to the overall research infrastructure, science and technology capabilities of higher education, and/or economic development of the jurisdiction.

NASA Research and Technology Development Priorities

The NASA Office of Education identifies research and technology goals based on alignment with NASA's national priorities and Mission Directorate implementation plans. The Aeronautics Research Mission Directorate (ARMD), Human Exploration and Operations Mission Directorate (HEOMD), Science Mission Directorate (SMD), and the Space Technology Mission Directorate (STMD) identify their priorities on the NASA website http://www.nasa.gov/about/directorates/index.html. For information on all of NASA's missions, please visit http://www.nasa.gov/missions/index.html.

NASA Mission Directorate (MD) Descriptions

Human Exploration and Operations Mission Directorate (HEOMD) provides the Agency with leadership and management of NASA space operations related to human exploration in and beyond low-Earth orbit. HEO also oversees low-level requirements development, policy, and programmatic oversight. The International Space Station represents NASA exploration activities in low-Earth orbit. Exploration activities beyond low-Earth orbit include the management of Commercial Space Transportation, Exploration Systems Development, Human Space Flight Capabilities, Advanced Exploration Systems, and Space Life Sciences Research & Applications. The directorate is similarly responsible for Agency leadership and management of NASA space operations related to Launch Services, Space Transportation, and Space Communications in support of both human and robotic exploration programs. (www.nasa.gov/directorates/heo/home/index.html)

Aeronautics Research Mission Directorate (ARMD) conducts vital research to make air travel more efficient, safe, sustainable, and to uncover leading-edge solutions for the Next Generation Air Transportation System (NextGen) in the United States. ARMD's fundamental research in traditional aeronautical disciplines and emerging disciplines helps address substantial noise, emissions, efficiency, performance and safety challenges that must be met in order to design vehicles that can operate in the NextGen. NASA aeronautics has made decades of contributions to aviation. Nearly every aircraft today has a NASA-supported technology on board that helps the vehicle fly more safely and efficiently. Aeronautics research continues to play a vital supporting role to air travel and commerce by enabling game-changing technologies and innovation that allows the U.S. aviation industry to continue to grow and maintain global competitiveness. (www.aeronautics.nasa.gov)

Science Mission Directorate (SMD) leads the Agency in four areas of research: Earth Science, Heliophysics, Planetary Science, and Astrophysics. SMD works closely with the broader scientific community, considers national initiatives, and uses the results of National Research Council studies to define a set of "Big Questions" in each of these four research areas. These questions, in turn, fuel mission priorities and the SMD research agenda. The SMD also sponsors research that both enables, and is enabled by, NASA's exploration activities. SMD has a portfolio of Education and Public Outreach projects that are connected to its research efforts. (nasascience.nasa.gov)

Space Technology Mission Directorate (STMD) is responsible for developing the crosscutting, pioneering, new technologies and capabilities needed by the agency to achieve its current and future missions. STMD rapidly develops, demonstrates, and infuses revolutionary, high-payoff technologies through transparent, collaborative partnerships, expanding the boundaries of the aerospace enterprise. STMD employs a merit-based competition model with a portfolio approach, spanning a range of discipline areas and technology readiness levels. By investing in bold, broadly applicable, disruptive technology that industry cannot tackle today, STMD seeks to mature the technology required for NASA's future missions in science and exploration while proving the capabilities and lowering the cost for other government agencies and commercial space activities. Research and technology development take place within NASA Centers, in academia and industry, and leverage partnerships with other government agencies and international partners. (www.nasa.gov/directorates/spacetech/home/index.html)

Pre-Proposal Content Guidelines

A pre-proposal consists of a cover page and 10-page Project Description plus the specified Additional Pages. Successful proposals clearly describe how the research supports NASA priorities aligned with one or more NASA Mission Directorates or Centers, how the proposed effort enhances research capabilities within Kentucky of strategic importance to NASA, and how Kentucky researchers will continue to interact with NASA researchers.

Based on reviewer comments from the national selection process, top-ranked proposals include sound science plans aligned with NASA priorities. Discriminating considerations are strength of partnerships, contributions to state infrastructure, and diversity of the research team. Diversity refers to institutions as well as personnel.

Project Description (10 page limit): PI_ERA_ Project_2018.pdf
The project description includes a detailed description of the proposed research plan and addresses each of the sections described below. Page limit includes all illustrations, tables, and figures.

- ☐ **Abstract** (200-300 words)
- ☐ **Proposed Research**
- ☐ **Partnerships and Interactions:** Describe any partnerships or cooperative arrangements among academia, government agencies, business and industry, private research foundations, jurisdiction agencies, and local agencies as well as partnerships with minority-serving institutions and the inclusion of faculty and students from underrepresented / underserved groups.
- ☐ **Sustainability:** Describe how the research capability will be sustained beyond the funding period. There should be a clear plan for sustaining the research beyond NASA EPSCoR funding and for seeking non-EPSCoR funding. Identify potential CANs, NRAs, RFPs, etc., specifically as examples.
- ☐ **Evaluation:** Describe the evaluation plan for measuring project success. The evaluation plan should be appropriate for the scope of the proposed activity and include a discussion of data collection and analysis procedures.
- ☐ **Prior NASA EPSCoR and NASA Kentucky Research Support:** Demonstrate the effectiveness of prior research support. If the Science PI or any Co-PI identified on the project has received NASA EPSCoR or NASA Kentucky research funding in the past five years, information on the award(s) and results is required.

Additional Pages
The following should be included in PI_ERA_ Project_2018.pdf after the 10-page Project Description:

- ☐ **References:** No page limit
- ☐ **Budget Narrative:** No more than 1 page describing how the award and cost-share funds will be used to support students, faculty, travel, materials and supplies, and research equipment. Describe in-kind contributions and plans to address the required 50% cost-share. Detailed numerical budgets are *not* required for the pre-proposal review.
- ☐ **Team Management Summary:** No more than 2 pages summarizing qualifications, roles, responsibilities and effort committed by team members.
- ☐ **Curriculum vitae:** 2 page CV for Science PI, 1 page CV for Co-PIs
- ☐ **Statements of Commitment:** Support letter or email from at least one NASA researcher indicating a defined commitment to the proposed research project, relevance to NASA priorities and willingness to participate in proposal development. (See NASA KY FAQ for more information about NASA letters of support)