NASA Kentucky EPSCoR
2015-2016 Request for Proposals

Announcement: RFP-16-002

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Proposals Due: 5:00 pm EDT, Thursday, October 15, 2015

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 2015-2016 Request for Proposals

NASA Kentucky EPSCoR Programs Overview

The NASA Kentucky EPSCoR (Experimental Program to Stimulate Competitive Research) Programs strengthen research capability in the state in areas of importance to NASA and Kentucky by promoting development of research infrastructure, improving capabilities to gain support outside of EPSCoR and developing partnerships with NASA. NASA Kentucky EPSCoR Programs support faculty research development via Research Infrastructure Development Grants (RIDG) and Workshop/Conference/Seminar (WCS) awards.

NASA Kentucky invites proposal submissions for two EPSCoR programs addressing the national interests of NASA and specific needs of Kentucky:

Deadline: Proposal files submitted online at nasa.engr.uky.edu by **5:00 pm EDT, Thursday, October 15, 2015**.

Period of Performance: NASA Kentucky will support awards up to one year with start dates ranging from January 1 to March 1, 2016.

Numbers of Awards: Numbers of awards in each category are determined by sizes of the individual awards and available program funding levels.

Eligibility for EPSCoR Awards [RIDG, WCS]: 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 is *not* required.

Reporting Requirements: *Reporting on current and prior awards must be up-to-date to be eligible for funding under this announcement.* Principal Investigators (PIs) are required to report research productivity and students supported using the KY EPSCoR Reporting System (KERS): 1) during the award period, 2) within 30 days of the end of the award (final technical report and complete KERS reporting), and 3) annual updates for 5 years post-award (Kentucky EPSCoR requirement). Quarterly updates to project reporting are recommended. Reporting must be current to meet program report cycles due annually in spring for NASA and summer for state funding.

General Proposal Guidelines: RIDG & WCS

Proposals that omit required materials or that exceed the page limits may be rejected without review. Proposals from PIs who are delinquent in meeting reporting requirements on current or prior NASA Kentucky awards may be rejected without review.

- *Equipment* may not be purchased or used as cost-share in any NASA Kentucky award under this RFP.
- *Travel* funds are restricted to domestic travel only.
- *Cost-share* must be from non-federal sources.

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

Table 1. Summary of NASA Kentucky EPSCoR Programs

Funding Source	Award Program	Program Abbreviation	Program Description	US Citizen Required	Max Award	Indirect Costs Allowed	Required Cost-Share $CS:$Award	Level of NASA Collaboration
EPSCoR	Research Infrastructure Development Grants	RIDG	Faculty-directed research to enhance existing collaborations with NASA partners	NO	$50,000[3]	Yes	0.5:1	Letter of support from NASA[1]
EPSCoR	Workshop/Conference /Seminar	WCS	Researchers meeting to explore aerospace topics and joint funding opportunities	NO	$3,000	Yes	None	Letter of support from partner[2]

[1] *Letter of support required* that commits NASA partnership or collaboration to the project. Letters of support *do not* include letters of affirmation (i.e., letters that only endorse the value or merit of a proposal). Letters of support may be from NASA or affiliated organizations including NASA Institutes/Laboratories such as JPL, Space Telescope Science Institute, National Space Biomedical Institute, and CASIS, among others. (See NASA KY FAQ for more information about NASA letters of support.)

[2] *Letter of support* describing support to the project proposal from committed partners (not required to be NASA partners).

[3] Award amount increased for 2015-2016.

Submission Instructions

Proposal forms are available at nasa.engr.uky.edu/requests-for-proposals/forms. All proposals must be submitted via the NASA KY website as PDF files. Please title the proposal documents according to the specified file naming convention, in which **PI** is last name of proposer and **PGM** is program abbreviation (see Table 1).

- ☐ *SIGNED COVER PAGE:* Scan the signed original and save as PDF (filename format: PI_PGM_Cover_2016.pdf)
- ☐ *SIGNED BUDGET FORM:* Include justification detailing requested support and cost-share, scan the signed original and save as PDF (filename format: PI_PGM_Budget_2016.pdf)
- ☐ *PROJECT DESCRIPTION:* (filename format: PI_PGM_Project_2016.pdf)
  - 12 point font, 1 inch margins, single spaced
  - 5 page limit - See specific program guidelines for required content
  - Additional pages - See specific program guidelines for lists of documents

Upload at nasa.engr.uky.edu by 5:00 pm EDT, Thursday, October 15, 2015. Submissions after 5 pm may be rejected without review.

Review Process

Proposals will be rated, ranked and funded up to the budgeted amount available for each program. As a panel, reviewers will recommend proposals for funding to the NASA KY Director. Past reporting and accomplishments will be considered in evaluation of proposals. To avoid conflicts of interest, alternate reviewers may be recruited by the NASA KY Director.

EPSCoR Proposal Review Process

The NASA Kentucky EPSCoR Subcommittee, external content specialists, and NASA KY program staff will review proposals and rate them based on the following criteria:

- MERIT: Intrinsic merit of the proposed research (40%)
- RELEVANCE: Relevance of proposed research to NASA and Kentucky priorities (20%)
- FOLLOW-ON: Specific plans for pursuing follow-on funding including further development of NASA and industry collaborations (20%)
- MANAGEMENT: Management and evaluation (10%)
- BUDGET: Reasonableness of budget narrative (10%)

NASA Alignment and Collaboration

Proposals should align with the national NASA EPSCoR Program Objectives and the agency's missions and research as well as the interests of the state of Kentucky. See Table 1 as well as program descriptions and the following for more information on NASA and programmatic alignment.

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 solving NASA's problems.

NASA KY EPSCoR investment is focused on NASA priorities including the ISS National Laboratory, and on Aeronautics, Science, Human Spaceflight and Space Technology missions, 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 NASA EPSCoR jurisdictions to gain support from sources outside the NASA EPSCoR program;
- Develop partnerships among NASA research assets, academic institutions, and industry;
- Contribute to the overall research infrastructure, science and technology capabilities, higher education, and/or economic development of the jurisdiction; and
- Work in close coordination with the NASA Space Grant program to improve the environment for science, mathematics, engineering, and technology education in the jurisdiction.

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)

Research Infrastructure Development Grants - $50,000

Description: EPSCoR programs seek to strengthen research capability in the state by promoting development of research infrastructure, improving capabilities to gain support outside of EPSCoR and developing partnerships with NASA. Proposals submitted for **Research Infrastructure Development Grants (RIDG**) must be aligned with one or more of NASA's Mission Directorates (MD) and further enhance an existing collaboration between Kentucky researchers and NASA collaborators. RIDG funding builds NASA partnerships to take a successful seed investigation to the next level in preparation for submission to the three-year Research Area (RA) or other nationally competitive solicitations. RIDG support is sufficient for a combination of summer salary, student stipend, tuition, supplies and travel. Faculty and institutions may creatively design a budget within the guidelines to meet the needs of the researcher, institution and planned NASA partnership. Each funded NASA KY EPSCoR proposal is expected to establish research activities that will make significant contributions to the strategic research and technology development priorities of the NASA MD and contribute to the overall research infrastructure, science and technology capabilities, higher education, and economic development of the jurisdiction (KY).

Eligibility: Proposals will be accepted from institutions of higher education in Kentucky. Eligibility is *not* limited to NASA KY Space Grant Consortium Affiliate Institutions. US citizenship is *not* required.

Requirements: The proposed activity must be aligned with NASA themes addressed by one or more of the Mission Directorates. Funded research activities should result in submission of a joint publication. Strengthened partnerships will result from the collaboration and provide an established foundation for submission to EPSCoR Research Area or non-EPSCoR funding opportunities. Funded projects will be expected to develop plans for follow-on funding and should result in submission of one or more proposals. (See also Table 1)

Proposal Content: See General Proposal Guidelines for formatting and file naming instructions.
Project Description: PI_RIDG_Project_2016.pdf

- No more than 5 pages including tables and figures describing: abstract (200-300 words), project summary including specific goals for the funded period and anticipated outcomes, alignment with NASA MD, and results from related prior NASA KY support. Proposals must describe a schedule for regular contact with their NASA collaborator and plans for a visit to the NASA site.
- Additional pages - included in PI_RIDG_Project_2016.pdf after 5 page project description
  - Bibliography/References as needed
  - Principal Investigator's 2 page CV, Co-PIs 1 page CV
  - Current, Pending and Prior Support - List of all current and pending support and any prior NASA Kentucky Space Grant and EPSCoR awards from the past five years for PI and Co-PIs.
  - Support letter or email from a NASA researcher indicating commitment to the proposed research project, relevance to NASA priorities and willingness to participate in proposed research. (See NASA KY FAQ for more information about NASA letters of support)

Budget Guidelines: Maximum award level is $50,000 for one year. Allowable costs include faculty salary, student stipend or salary, fringe benefits, tuition, materials and supplies, and domestic travel. Required cost-share of at least 0.5:1 ($CS:$Award) must be provided by the proposing institution. Indirect costs are allowed and unrecovered indirect costs may be used as cost-share.

Longitudinal Tracking of Students: All students receiving compensation must be reported in KERS. Any student receiving $5,000 or more in NASA funding or working 160 hours or more on NASA-supported projects or a combination of both will be longitudinally tracked by NASA for five years. Longitudinally tracked students will need to keep their information current through follow-up correspondence for the 5-year period.

Workshop/Conference/Seminar - $3,000

Description: EPSCoR programs seek to strengthen research capability in the state by promoting development of research infrastructure, improving capabilities to gain support outside of EPSCoR and developing partnerships with NASA. Proposals submitted for **Workshop/Conference/Seminar (WCS)** awards must be aligned with one or more of NASA's Mission Directorates (MD) and increase collaboration among Kentucky researchers and NASA collaborators. Workshop funding up to $3,000 builds Kentucky and NASA partnerships to develop interdisciplinary teams interested in pursuing the three-year EPSCoR Research Area (RA) or other nationally competitive solicitations. Conference funding up to $3,000 provides partial support for a local, regional, national or international meeting hosted in Kentucky focused on NASA-related research. Seminar funding up to $1,000 supports a series of seminars or webinars on an aerospace topic.

Each funded NASA KY EPSCoR proposal is expected to establish research activities that will make significant contributions to the strategic research and technology development priorities of the NASA MD and contribute to the overall research infrastructure, science and technology capabilities, higher education, and economic development of the jurisdiction (KY).

Eligibility: 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 is *not* required.

Requirements: WCS activities must be promoted statewide, impact at least six participants from at least two different organizations, and survey participants both pre- and post-participation. NASA Kentucky must be acknowledged as a sponsor of the events. Connections with Kentucky companies will be viewed favorably. (See also Table 1)

Proposal Content: See General Proposal Guidelines for formatting and file naming instructions.
Project Description: PI_WCS_Project_2016.pdf

- No more than 5 pages including tables and figures describing: abstract (200-300 words), project summary, alignment with NASA MD, specific goals for the funded period and anticipated outcomes. Proposals must describe a schedule and identify potential participants.
- Additional pages - included in PI_WCS_Project_2016.pdf after the 5 page project description
  - Bibliography/References as needed
  - Principal Investigator's 2 page CV
  - Letter of support from institution partner, scientific site and/or NASA collaborator

Budget Guidelines: Anticipated award levels are $500 up to a maximum award amount of $3,000. Allowable costs include transportation and lodging for participants and guest speakers, speakers' fees (not honoraria), meals only during working meetings with an agenda and list of participants, and meeting room rental. No cost-share is required, however partnerships are strongly encouraged and will be viewed favorably. Indirect costs are allowed and unrecovered indirect costs may be used as cost-share.

Longitudinal Tracking of Students: All students receiving compensation must be reported in KERS. Any student receiving $5,000 or more in NASA funding or working 160 hours or more on NASA-supported projects or a combination of both will be longitudinally tracked by NASA for five years. Longitudinally tracked students will need to keep their information current through follow-up correspondence for the 5-year period.