



2016-2017 Delaware NASA EPSCoR RID Seed Grant Program

Open to Delaware Researchers

Proposal Deadline October 2, 2016

INTRODUCTION

The NASA EPSCoR program has funded a Research Infrastructure Development (RID) grant to the state of Delaware for academic year 2016-2017. A principal goal of the program is to develop competitive research and technology for the solution of scientific and technical problems in areas of strategic importance to NASA's mission: *to pioneer the future in space exploration, scientific discovery, and aeronautics research*. The areas that are considered important by NASA are defined by the Mission Directorates (see Appendix A). A second goal of the Delaware program is to contribute to the overall research structure, science and technology capabilities, higher education, and economic development of Delaware.

NASA EPSCoR will provide seed funding for the development of academic research enterprises directed towards long-term, nationally competitive capabilities in areas of science and technology related to NASA's broad interests, including space, aeronautics, astrophysics and engineering. These capabilities are also meant to contribute to Delaware's economic viability.

The Delaware NASA EPSCoR Seed Grant Program is aimed at promoting research and development in NASA-related areas among Delaware scientists and engineers. The goal is to stimulate scholarly initiatives by supporting junior faculty, researchers, and postdocs who have not yet received significant government funding. Consideration will also be given to more senior faculty who are embarking on a new research direction, but who have not yet received funding for that new research. The seed grant program is intended to support proposal development, pilot research, and other activities that advance a NASA-related research project to the point at which it can attract competitive extramural funding. The relation between the proposed research and NASA's mission can best be demonstrated by identifying a committed collaborator from a NASA center, or a collaborator who is already successful in obtaining NASA research funding.

Seed grant awards will be in amounts up to a total of \$21,800. UD applicants should submit a budget for direct costs only. External applicants should submit a budget not to exceed \$21,800 including overhead *at their own institutions*. Funding requests can include the following categories of direct costs: graduate student stipend (use the graduate student stipend rate for your college); research supplies (excluding large equipment); summer support for junior faculty/researchers, maximum of one month; and a summer undergraduate intern. The duration of each award is one calendar year. We anticipate that three awards will be made in connection with this announcement.

SEED-GRANT PROPOSALS

Seed grant proposals should include the following elements. Note page specifications for the narrative and other sections; text in these sections should be single-spaced, minimum 11-pt Times New Roman font.

1. **Cover page.** Include the title of the project as well as the department, mail and email address, and phone number for each investigator.
2. **Abstract.** Include a 150-word abstract, suitable for use in public reports, that briefly describes the research to be done, why the research is important to NASA, and why the research is of interest to the state of Delaware.
3. **Narrative.** Articulate the research question, theoretical grounding, existing literature, research plan, names of collaborators on the proposed research, and the significance of the larger project that the seed grant will help you develop. Maximum length: two pages excluding references.
4. **Plan for Seeking External Funding.** Describe your plans for seeking external funding, including: what government agencies or foundations you might approach and why; what contacts if any (e.g., prior application, conversations with program officer) you have had with those agencies; what contacts if any you have had with staff at NASA Centers, or with Principal Investigators (PIs) on already-funded NASA grants, or with NASA-related contractors; when you expect to apply for funds; the expected scale of the larger project; and how the seed grant activities will allow you to seek external funding for the larger project. Maximum length: half page.
5. **Relevance of Proposed Activities to NASA EPSCoR RID mission and relation to Existing Research (if applicable).** The proposer(s) should especially address how the proposed research fits into NASA's Strategic Plan, as well as into the EPSCoR theme of "contributing to the overall research infrastructure, science and technology capabilities, higher education, and/or economic development of Delaware". Also describe what types of linkages will take place with other institutions, NASA-related contractors, NASA Centers, NASA PIs, and/or state agencies. Maximum length: half page.
6. **Budget and budget justification.** These should include any one or combinations of the categories mentioned above.
7. **Short two-page curriculum vitae for all investigators.** List academic credentials, appointments, and relevant publications. Maximum of two pages.

ELIGIBILITY

Faculty and research personnel working in areas of interest to the NASA Mission in the state of Delaware are eligible to apply.

LEVEL OF FUNDING

Seed grants will be funded in the amount of \$21,800 to each of three successful proposers. Include fringe benefits (where applicable) in the total budget; only applicants outside of UD need to include indirect costs.

ELIGIBLE EXPENSES

Funding for senior faculty summer salary is discouraged. NASA EPSCoR funds may not be used for equipment purchases or foreign travel. All other expenses directly related to seed grant activities may be included in the budget.

REPORTING REQUIREMENTS

Seed grant recipients will be asked to provide the NASA EPSCoR Director with a brief semi-annual report describing activities funded by the seed grant. A final report on the work performed, and on progress toward obtaining external support, will be due one year following the award date.

DEADLINES

Proposal deadline for seed grants for 2016-2017 is **October 2, 2016**.

REVIEW PROCESS

Seed grant applications will be reviewed by a panel composed of members selected from the Delaware Space Grant Consortium (DESGC) program advisors and other faculty colleagues.

CRITERIA FOR EVALUATION

The most important evaluation criteria for seed grant proposals are intellectual merit, potential for generating interdisciplinary innovation, development of new collaborations, consistency with NASA's mission, and potential for future fundability. Specifically, the proposer must demonstrate how the proposal is aligned with one or more of the Strategic Goals which are listed in [NASA's 2014 Strategic Plan](#). Proposals that request funding for a stand-alone project only, or do not describe plans for seeking external funding, or fail to demonstrate specific links with NASA's Strategic Goals, or poorly justify their budget, will be considered non-responsive to this Call for Proposals. Proposals submitted by junior faculty and/or junior researchers will be given priority.

SUBMISSION PROCEDURES

Submit all proposal materials as a single PDF file to the NASA EPSCoR Deputy Director, James MacDonald, at jimmacd@udel.edu with a copy to ccathell@udel.edu. Only electronic submissions will be accepted. Questions regarding the seed grant program should also be directed to jimmacd@udel.edu.

Appendix A: NASA Mission Directorates

NASA's Mission *to pioneer the future in space exploration, scientific discovery, and aeronautics research*, draws support from three Mission Directorates and the Office of the Chief Technologist, each with a specific responsibility.

- **Aeronautics Research Mission Directorate (ARMD)** conducts vital research to make air travel more efficient, safe, green, 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. (<http://www.aeronautics.nasa.gov>)
- **Human Exploration & Operations Mission Directorate (HEOMD)** Agency role is to develop a sustained human presence on the moon; to promote exploration, commerce, and U.S. preeminence in space; and to serve as a stepping-stone for the future exploration of Mars and other destinations. HEOMD establishes the NASA exploration research and technology development agenda. Specifically, HEOMD develops capabilities and supporting research and technology that will enable sustained and affordable human and robotic exploration. It also works to ensure the health and performance of crews during long-duration space exploration. In the near-term, HEOMD does this by developing robotic precursor missions, human transportation elements, and life-support systems. HEOMD provides the Agency with leadership and management of NASA space operations related to human exploration in and beyond low-Earth orbit. HEOMD enables current space exploration in low earth orbit through its Space Shuttle and International Space Station Programs. HEOMD is also 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. (<http://www.nasa.gov/directorates/heo/home/index.html>)
- **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. (<http://nasascience.nasa.gov>)
- **Office of the Chief Technologist (OCT)** serves as the NASA Administrator's principal advisor and advocate on matters concerning agency-wide technology policy and programs. OCT is responsible for direct management of NASA's Space Technology programs and for coordination and tracking of all technology investments across the agency. The office also serves as the NASA technology point of entry and contact with other government agencies, academia and the commercial aerospace community. The office is responsible for developing and executing innovative technology partnerships, technology transfer and commercial activities and the development of collaboration models for NASA. (<http://www.nasa.gov/offices/oct/home/index.html>)