



NASA EPSCoR 2015 RID Abstracts

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A proposal for expanding NASA relevant research infrastructure and capabilities in North Dakota

15-EPSCoR RID-0001

University of North Dakota, Grand Forks

Santhosh Seelan

North Dakota's participation in the NASA EPSCoR program was established with the following objectives: build core competitive research strength in North Dakota, conduct research focused on scientific and technical problems of relevance and importance to NASA, focus on collaborative relationships between and among universities in North Dakota, industry, and NASA Centers, work in close coordination with North Dakota Space Grant Consortium to improve the environment for Science, Technology, Engineering and Mathematics (STEM) education in North Dakota, and contribute to North Dakota's economic development.

ND NASA EPSCoR proposes the following programs to accomplish these goals. The first is to provide faculty seed and travel grants, approximately equal to past years and proportionate to future funding levels, to enhance current research strengths and foster an environment for greater future non-NASA EPSCoR funding. ND NASA EPSCoR will also provide graduate student support approximately equal to past years and proportionate to future funding levels, to encourage students to conduct NASA related research and to pursue NASA relevant science and engineering degrees and careers. The proposal includes close coordination with ND NASA Space Grant's Research Focus Area (RFA) seed grant program to increase the funding opportunities for faculty and students across the state. ND NASA EPSCoR will also continue to support, via the previously stated programs, the new Aerospace Sciences Ph.D. program at the University of North Dakota (first of its kind in the region) in development of emerging research expertise in NASA relevant areas.

This proposal and its goals are broadly consistent with the primary goal of the North Dakota EPSCoR program, which is to "increase the competitiveness of North Dakota for merit-based grants and contracts in support of science and technology research from federal funding agencies." This is done through the ND NASA EPSCoR seed grants, travel grants, and graduate student support. Many of the Research Focus Areas of ND NASA EPSCoR clearly align with NASA strategic goals 1 and 2. This includes areas in planetary space suit research, analog module development, advanced aeronautics, and climate change and agricultural research. NASA strategic goal 3, developing workforce to cater to needs of space industry is also addressed through these programs. Alignment with NASA's Education Program goals is achieved through collaboration with the North Dakota Space Grant Consortium in attracting and retaining students in STEM fields through these proposed programs.

Kansas NASA EPSCoR Research Infrastructure Development (RID) Program

15-EPSCoR RID-0002

Wichita State University

Leonard Miller

Proposal Summary not provided



Research Infrastructure Development (RID) in West Virginia: A Proposal to NASA Experimental Program to Stimulate Competitive Research

15-EPSCoR RID-0003

West Virginia University

Majid Jaridi

The NASA West Virginia Experimental Program to Stimulate Competitive Research (EPSCoR) requests \$375,000 for the fiscal years 2016-19 for implementation of the WV Research Infrastructure Development (WV RID) Project. The NASA WV EPSCoR has tailored its programs to the unique configuration of the state's needs and strengths and limitations of various colleges and universities in the state in a way that seems to make the best use of the opportunity represented by NASA's vision in establishing the NASA EPSCoR program.

WV RID consists of three programs which have been designed to supplement WV Space Grant Consortium menu of programs. These programs are:

1. NASA EPSCoR Research Seed Grants: designed to support faculty at all WV colleges and universities in their efforts to initiate research activities, conduct pilot experiments, or demonstrate new concepts that might lead to significant projects in the future. Each applicant may request up to \$10,000 of NASA WV EPSCoR funds to be supplemented with at least a one-to-one cost share from the applicant's home institution.
2. NASA EPSCoR College-University Collaboration program: Science faculties at West Virginia's predominately undergraduate institutions need support in establishing competitive research programs. To address this problem, the NASA WV EPSCoR Committee will make one, \$20,000 collaborative grants available each year (requiring a cost share of at least one-to-one).
- 3 NASA EPSCoR Travel Grant Program: The NASA WV EPSCoR Committee provides support to researchers at WV colleges and universities to travel to NASA Centers or NASA Headquarters to meet and initiate collaborative projects with NASA scientists.

Developing Aerospace Research in Louisiana

15-EPSCoR RID-0004

Louisiana Board of Regents

T. Gregory Guzik

The State of Louisiana is committed to development of its R & D capacity both for the Educational value (workforce) and for Economic Development. Louisiana participates in all of the agency EPSCoR programs for which it is eligible through the Louisiana Board of Regents (BOR), which provides state matching funds and, consequently, acts as the fiscal agent for the EPSCoR programs. (This arrangement, in place since the 1990's, has worked well to support Louisiana's successful participation in the NASA EPSCoR program.) The State's focus for the major EPSCoR programs (NSF, NIH) has been on Biological / Medical, Information Technology, Environmental / Health and Materials Science, while, for the smaller, more mission-related agencies' EPSCoR programs, the objective is to adapt to those mission agency requirements while remaining consistent with the overall Louisiana EPSCoR effort. NASA EPSCoR has been successful in developing research capacity in Space/Aerospace fields that also supports the overall state goals.

NASA EPSCoR's success is built upon a strategy of Engagement, Collaboration and Partnership. We are already involved with the major universities in the State, with the Michoud Facility and with Stennis Space Center both through previous EPSCoR activities and through partnership with the Louisiana Space Grant effort (LaSPACE). We plan to build upon these and move the state's R & D base forward in those areas of science, engineering and technology that are important for the long-term success of NASA's new 'roadmaps,' as well as establishing linkages to R & D projects at the NASA centers. Our plan for "Developing Aerospace Research in Louisiana", in short, involves: (1) Engage faculty, post-docs and students in performing research projects, (2) Develop Collaborations/Mentorships between NASA scientists and engineers and the Louisiana research community, and (3) Establish Partnerships between educational institutions (minority and majority) and with external facilities and other agencies

NASA Nebraska EPSCoR RID FY 2015-2017

15-EPSCoR RID-0005

University of Nebraska, Omaha

Scott Tarry

NASA Nebraska EPSCoR has established an outstanding record of success and has demonstrated its commitment to developing research capabilities that are long-term, self-sustaining, and nationally competitive. The proposed research infrastructure development (RID) program for FY2015 to FY2017 will continue to support and sustain unique research activities that address the priorities of both NASA and Nebraska. NASA Nebraska EPSCoR's philosophy of using strategic investments in seed projects to develop competitive proposals for the national NASA EPSCoR competitions has been incredibly successful in developing Nebraska's aerospace infrastructure. Industry partnerships have been, and will continue to be, vital to the program's success. The proposed RID program will build on these historically productive relationships and will actively involve industry in all facets of the program's implementation—from RID to technology transfer.

Maine 2015 - 2018 NASA EPSCoR RID Program

15-EPSCoR RID-0006

Maine Space Grant Consortium

Terry Shehata

The goal of the Maine NASA EPSCoR Program is to provide resources and support that enable Maine scientists and engineers to compete nationally in NASA-related research and development activities. Specific to this NASA EPSCoR Research Infrastructure Development (RID) proposal, our objectives for the next three years are to: (a) Support interdisciplinary, theme-specific VISIONEERING workshops to generate synthesis of ideas, bottom-up from both nascent and maturing research fields in Maine that align with NASA and Maine's needs; and (b) Provide short-term, one-time support that will "jump start" collaborative projects that stem from the theme-specific plans generated from the VISIONEERING workshops.

South Dakota NASA EPSCoR Research Infrastructure Development Program

15-EPSCoR RID-0007

South Dakota School of Mines & Technology

Edward Duke

The goal of the South Dakota NASA EPSCoR Research Infrastructure Development (RID) program is to promote competitive research and technology development in the state with an emphasis on areas of strategic importance to NASA. Attaining that goal requires close coordination among the state's research institutions, government, industry, NASA Headquarters, and NASA research and development centers. The unified organizational structure of the South Dakota NASA EPSCoR program and South Dakota Space Grant Consortium (SDSGC) is uniquely able to achieve this goal. Moreover, the NASA EPSCoR activities in the state have become increasingly integrated with efforts of other EPSCoR and EPSCoR-like programs resulting in better overall alignment with the broader mission of nurturing and diversifying the nation's scientific and engineering research enterprise.

The implementation strategy to achieve the five major objectives of the NASA EPSCoR Program focuses on the major STEM Ph.D.-granting institutions in the state, but also seeks to develop collaborations between those institutions and the seven additional higher education affiliates of the SDSGC, which include two tribal universities, as well as with non-affiliated institutions. Because RID resources are limited, the allocation of these investments in the state is guided by the following criteria: (1) alignment with NASA R&D priorities, (2) development of NASA research contacts, (3) support for state R&D priorities, (4) formation of multi-institution collaborations, (5) meaningful involvement of Minority-Serving Institutions (Tribal College) in research, and (6) potential for economic development and industry partnerships.

SD NASA EPSCoR offers travel grants and seed grants (Research Initiation Grants) to promote development of new contacts and cooperative research ties with the NASA Centers and/or Mission Directorates. Because South Dakota has limited university-based and industry-based aerospace R&D, a major focus of SD NASA EPSCoR is redirection of non-aerospace research assets to efforts that address research and technology development needs of NASA. In the solicitations for Research Initiation Grants and NASA EPSCoR major research grants, explicit emphasis is given to development of new or continuing partnerships among colleges and universities in the jurisdiction that will enhance the jurisdiction's abilities to respond to the research and technology development needs of NASA.

This NASA EPSCoR RID program proposal outlines South Dakota's plan to continue to support improvement of the research environment in South Dakota and to further promote technology developments that align with NASA's strategic goals. SD NASA EPSCoR is well positioned to identify and cultivate new research collaborations within the state and with NASA that will increase the state's capacity in STEM research and education and effectively address the critical research and development and economic development priorities of the state and NASA.

Montana NASA EPSCoR Research Infrastructure Development (RID) FY 2015-2017

15-EPSCoR RID-0008

Montana State University, Bozeman

Angela Des Jardins

Since the beginning of the NASA EPSCoR program in Montana in 1994, great strides have been made in developing and coordinating Montana research and education activities aimed at solving current technical and scientific problems facing NASA and the aerospace community. These accomplishments and their resulting infrastructure have allowed many Montana researchers, including students, to have opportunities to work with NASA that were not present prior to the implementation of NASA EPSCoR and the National Space Grant programs. Due to the success achieved thus far, the goals outlined below for the Montana NASA EPSCoR program for the next three years will remain consistent with those of the earlier program.

RID-Specific Goal:

To help boost the research programs of Montana college and university faculty research in areas that match scientific and technical problems of importance to NASA to a new level of national prominence, enabling them to compete successfully for regular NASA research funding.

General Montana NASA EPSCoR Goals:

To make NASA better aware of nationally competitive researchers and capabilities already existing in Montana.

To build research infrastructure at institutions of higher education throughout Montana that can benefit individual researchers and groups working on scientific and technical problems of importance to NASA by developing expertise and capabilities not currently available within the state.

To assist in Montana's economic development in aerospace-related fields by: - utilizing EPSCoR research to strengthen existing Montana high-tech companies. - seeking new connections between Montana faculty researchers and state industries. - building university research enterprises that will foster "spin-off" startup enterprises.

To maintain a focused effort to build nationally prominent, competitive research groups at Montana's major universities, while at the same time providing opportunities for research involvement to interested, committed faculty and students at smaller institutions.

To coordinate the Montana NASA EPSCoR and Montana Space Grant Consortium (MSGC) programs in a seamless, unified approach to enhance aerospace-related education, research, economic development, and public outreach throughout the state with a plan grounded in the state's capabilities, priorities, and goals.

RID OBJECTIVES

Research Initiation Grant Objectives

A1. Continue to evaluate Research Initiation Grant proposals on:

- 1) Scientific/Engineering impact,
- 2) NASA connection,
- 3) Technical feasibility,
- 4) Broader impacts (such as state research infrastructure and economic development),
- 5) Suitability of the proposed research team, and
- 6) Probability of the work resulting in further NASA funding.

A2. Continue to require letters of support from NASA personnel in Research Initiation Grant proposals.

A3. Maintain at least 70% of students working on Research Initiation Grant projects presenting at the MSGC Student Research Symposium held annually at Montana State University-Bozeman.

Travel Grant Objectives

B1. Continue to evaluate Travel Grant proposals on 1) Scientific/Engineering impact, 2) NASA connection, and 3) Broader impacts (such as state research infrastructure and economic development).

B2. Continue to recommend that faculty make a presentation during their visit to the NASA site.

B3. Continue to coordinate Travel Grant efforts with NSF EPSCoR, NIH INBRE, and other state and federal agencies.

Idaho NASA EPSCoR Proposal in Response to NASA EPSCoR Research Infrastructure Development (NNH15ZHA001C)

15-EPSCoR RID-0009

University of Idaho, Moscow

Joseph Law

Central objectives of the proposal

Idaho NASA EPSCoR is dedicated to increasing Idaho's competitive research capabilities in areas aligned with NASA's missions in aeronautics, science, human exploration and operations, and space technology. The Idaho NASA EPSCoR program has supported collaborative research efforts between Idaho researchers and partners in NASA and industry for over a decade. The goals of Idaho NASA EPSCoR are:

Goal 1: Promote the development of research expertise and infrastructure that will allow Idaho researchers to compete nationally in areas of strategic interest to NASA while helping to retain qualified young scientists and engineers in Idaho

Goal 2: Develop partnerships with NASA and industry that enable Idaho's researchers and students to contribute to NASA's missions through innovative research opportunities

Goal 3: Support research in areas that will enhance economic development in Idaho

Goal 4: Support research important to maintaining and protecting the ecology and environment of Idaho

Methods/techniques proposed to accomplish the proposal objectives

Through the proposed work, the Idaho NASA EPSCoR will execute a portfolio of competitive projects to enhance Idaho's research capabilities in areas of interest to NASA. The majority of funds will support competitive research initiation grants and collaboration grants. In addition to the competitive grants, Idaho NASA EPSCoR will initiate a new strategic planning activity to develop a 5 to 10 year plan for Idaho's aerospace-related research infrastructure. This new activity will analyze both the supply and demand for Idaho's research assets to determine long-term priorities.

All of the proposed activities align with Idaho NASA EPSCoR's strategic goals, priorities, and strategies.

Perceived significance of proposed work

Idaho NASA EPSCoR's programs are designed to increase development and use of aerospace and STEM workforce and infrastructure through competitive opportunities and partnerships with Idaho institutions of higher education, state and federal agencies, and other STEM-focused organizations.

Mississippi EPSCoR Research Infrastructure Development Program

15-EPSCoR RID-0010

Mississippi University of Science & Technology

Nathan Murray

The Mississippi Space Grant Consortium (MSSGC) proposes a competitive seed grant project to strengthen Mississippi's research competitiveness. Individual seed grants will (a) build on the current strengths of individual members of the Consortium, (b) focus these strengths on issues of particular relevance to NASA, and (c) increase the applicability of Mississippi's research to areas of interest within NASA. MSSGC uses the RID program to fill a unique role by infusing NASA investment into human research asset development. The goal is to provide initiation funds to set in motion the maturation of innovative research and technology ventures that are relevant to NASA and NASA related Mississippi industry. The competitive seed grant opportunities are focused on developing and/or maturing research activities that explore promising research avenues, establish or strengthen collaboration between researchers in the Jurisdiction, and enhance MS research relevance to NASA through communication/collaboration with NASA scientists.

A Plan for NASA/EPSCoR Research Infrastructure Development in Delaware

15-EPSCoR RID-0011

University of Delaware

Dermott Mullan

The objectives of the NASA/EPSCoR/RID program in DE are as follows: (i) to establish links between NASA/EPSCoR and the existing EPSCoR infrastructure in the state; (ii) to offer seed grants to previously unfunded researchers in Delaware by means of a fair and open competition among the institutions in the state where research in the STEM areas is being conducted; (iii) to aim for as much diversity among the awardees as possible, especially by ensuring that researchers at Delaware's HBCU (Historically Black College/University: Delaware State University) are represented proportionately in the competition; (iv) to have NASA/EPSCoR awardees present results of their work at the annual state-wide EPSCoR meeting. Of these, we regarded (ii) as our primary objective. The RID program aims to target junior researchers who, at an early stage in their career, are still on the learning curve in proposal submissions. Particular interest is to be paid to supporting researchers who have not yet been successful in responding to RFPs (Request for Proposals), which are nationwide in scope. However, as well as these early-career researchers, we also wish to target faculty members and/or researchers who have decided to change direction in their research, or are involved in arranging for new collaborators, and are now striving to compete in RFPs from agencies or programs which are distinct from those that have previously awarded funding to the researcher.

New Hampshire NASA EPSCoR Research Infrastructure Development (RID) Program 2015-2018

15-EPSCoR RID-0012

University of New Hampshire, Durham

Antoinette Galvin

The strategic goal of the NASA Experimental Program to Stimulate Competitive Research, Research Infrastructure Development (EPSCoR RID) project in New Hampshire is to support promising academic research enterprises within the State that are directed toward generating or enhancing long-term, self-sustaining, nationally-competitive capabilities in areas of strategic importance to the NASA mission and of mutual benefit to the research infrastructure in New Hampshire. There are two research universities in New Hampshire that have master's and doctoral degree programs in NASA-related disciplines, encompassing both theoretical and experimental research areas. The two universities have an overlapping interest in the development of CubeSat instrumentation, but there are also research infrastructure capability enhancement projects that are of interest uniquely to each institution. In particular, the University of New Hampshire proposes a new project element in this RID to expand its research priorities to include other NASA-related disciplines, while Dartmouth College proposes to create a new project element with emphasis on mission planning for CubeSat Swarms.

Alaska's NASA EPSCoR Program 2015-2018

15-EPSCoR RID-0013

University of Alaska, Fairbanks

Denise Thorsen

The Alaska Science and Technology Plan [2014-ST-plan_Feb.-BOR-1.pdf] was finalized in January 2014 [see <http://www.alaska.edu/research/research/scor>]. This document notes that:

“Alaska’s economy is based on knowledge. Research – the expansion of knowledge – can improve the state’s resilience and competitiveness and contribute to human progress. While Alaska’s vast size, extreme climate, and scattered population present challenges for science and technology development, the state also offers many advantages: a rich resource base, a unique Arctic location, an educated population and increasingly well-regarded university system...”

This plan goes on to outline seven specific science and technology research arenas to which “Alaska’s unique characteristics lend themselves...”. Each of the EPSCoR programs (NASA, NSF, DOE, etc.) currently active in the state look to this document to find the commonality between Alaska’s research interests and those of the federal agency. This proposal outlines those commonalities between Alaska’s S&T plan and NASA’s 2014 Strategic Plan.

Specifically, this NASA EPSCoR RID proposal seeks to build Alaska’s research infrastructure and technology capabilities in areas of interest to Alaska by providing seed funding and incentives that will lead toward long-term, self-sustaining, nationally-competitive capabilities in support of NASA related research and technology priorities.

Goal: Increase Alaska’s ability to respond to research and technology development needs of NASA and the State and to partner with Alaska’s aerospace industry to expand the space-related capabilities within the State.

Objective 1: Develop research infrastructure by awarding a minimum of three Research Development Seed Grants per year in areas of strategic importance to NASA and Alaska which lead to a minimum of three follow-on proposals submitted per year.

Objective 2: Incentivize Research Development Seed Grants to foster partnerships among Alaska’s academic institutions and/or industry. 25% of Research Development Seed Grants will include multi-institution and/or academic-industry collaboration.

Objective 3: Facilitate new partnerships with NASA researchers by providing Partnership Development Travel Grants and/or arranging Annual Faculty Group visit to a NASA Center that will lead to a minimum of one new collaborative proposal per year.

New Mexico NASA EPSCoR Research Infrastructure Development

15-EPSCoR RID-0014

New Mexico State University

Patricia Hynes

The purposes of the New Mexico NASA EPSCoR Research Infrastructure Development (RID) Program are to build the core competitive research strength in New Mexico, and to grow research and technology development core capabilities. We will enable faculty to compete for funds from NASA and non-NASA sources outside of the EPSCoR program in order to find solutions for scientific and technical problems of importance to NASA Centers and Mission Directorates. New Mexico NASA EPSCoR RID will continue focusing on collaborative activities and relationships to develop long-term, self-sustaining, nationally-competitive capabilities in space and aerospace-related research. These capabilities will, in turn, contribute to New Mexico's economic viability and expand the Nation's base for science and technology innovation agendas. For the purpose of brevity, we will refer to the program in the proposal as NM EPSCoR RID Program. The formal name of the program will be New Mexico NASA EPSCoR Research Infrastructure Development Program.

The Hawaii NASA EPSCoR Research Infrastructure Development Program

15-EPSCoR RID-0015

University of Hawaii, Honolulu

Luke Flynn

The objectives of NASA EPSCoR Research Infrastructure Development proposal are three-fold: (1) We will encourage NASA research projects and infrastructure development on the island of Guam by focusing on three potential projects that may be of interest to islanders there: (a) Work towards installation of a satellite ground station on Guam, (b) Expand and upgrade the existing planetarium on Guam to include NASA-focused research results and content, and/or (c) Interact with the computer science department at University of Guam to determine if there is interest to develop small satellite flight software. (2) Hawaii Space Flight Laboratory (HSFL) is a part of the Hawaii Space Grant Consortium. The first HSFL launch will be in October 2015 from Kauai. HSFL is already working on three other small satellite projects and will expand to UAV research. The University of Hawaii is interested in a multi-disciplinary Aerospace Science and Technology Department that is a result of HSGC and NASA EPSCoR successes in the State. (3) We will continue to encourage new NASA infrastructure development in Hawaii and Guam by providing seed grants and travel grants to investigators willing to work with NASA Centers or Mission Directorates.

NASA Kentucky EPSCoR Program Research Infrastructure Development (RID) Proposal 2016-2018

15-EPSCoR RID-0016

University of Kentucky, Lexington

Suzanne Smith

The Kentucky Statewide EPSCoR Program's mission is to enhance the 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. This mission aligns with Kentucky's economic development strategy, which stresses the transition to advanced manufacturing, leveraging growth areas like aerospace, and the development of an innovation economy driven by the strengths of its educational system: cutting-edge R&D and a highly educated workforce.

Supporting this statewide mission, NASA Kentucky EPSCoR's goals are to enhance capacity through strategic investments in NASA-priority research areas and to increase researcher competitiveness for non-EPSCoR NASA funding. A key factor in achieving the latter goal is initiation of relationships between Kentucky's and NASA's researchers that can develop into partnerships. Every aspect of the proposed RID portfolio emphasizes this process of relationship-building.

To reach these goals, five specific objectives of the NASA Kentucky EPSCoR program align with those of the NASA EPSCoR program: 1) to develop human research infrastructure in areas strategically important to NASA, 2) to gain support from non-EPSCoR sources, 3) to develop NASA Partnerships, 4) to develop science, technology and economic capacity, and 5) to coordinate with and complement (not augment) the NASA Kentucky Space Grant programs.

The centerpiece of the NASA KY EPSCoR RID Program is the Research Infrastructure Development Grant (RIDG) competitively awarded to faculty for one year. RIDG proposals to NASA KY stress collaborative relationship building with NASA. Faculty principle investigators (PIs) must include a letter of collaboration from a NASA collaborator based on prior interactions, describe a schedule for regular contact with the NASA collaborator and plans for a visit to the NASA site and, if funded, are expected to result in submission of a jointly authored paper to a conference or journal.

To assist them in establishing initial connections with NASA and developing interdisciplinary research teams, faculty are encouraged to submit proposals for Workshop/Conference/Seminar awards (WCS). Workshop funding 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 provides partial support for a local, regional, national or international meeting hosted in Kentucky focused on NASA related research. Seminar funding supports a series of seminars or webinars on an aerospace topic. Faculty Travel (FT) awards are also awarded to assist faculty in developing new relationships with NASA. Individual travel awards are awarded to researchers after review of the application, which must include a NASA invitation to visit and discuss potential collaboration. Analysis of the EPSCoR RAs awarded to KY shows that, to be competitive nationally, it is necessary for a proposed project to have multiple NASA connections. Helping new-to-NASA PIs make an all-important initial contact will enable successful submissions for RIDG awards; allowing RIDG PIs to

develop relationships and expand their network will prepare them for RA submissions and national non-EPSCoR competitive solicitations in subsequent years.

In addition to managing the proposal submission competitions, NASA KY management also tracks and communicates the impact of NASA Kentucky EPSCoR Programs.

Arkansas NASA EPSCoR Research Infrastructure Development Project

15-EPSCoR RID-0017

University of Arkansas, Little Rock

Mitchell Hudson

Arkansas NASA EPSCoR plans to:

Continue to fund the NASA EPSCoR program office to ensure continued momentum and good progress in NASA relevant aerospace research in Arkansas

Fund the Planning and Preparatory (P&P) Grant program to enable Arkansas researchers to obtain NASA EPSCoR Research Award funding

Fund the Planning and Preparatory (P&P) Travel Grant program to enable Arkansas researchers to obtain funding for teams of researchers to visit NASA Centers, Mission Directorates or the Office of Chief Technologist.

Conduct a statewide annual workshop to disseminate information and know-how to potential Research Award competitors

Conduct a statewide one day long NASA EPSCoR Conference, in conjunction with the annual Arkansas EPSCoR Conference if possible, to bring NASA and other agency sponsored individuals together

NASA Rhode Island EPSCoR RID FY15

15-EPSCoR RID-0018

Brown University

Peter Schultz

This EPSCoR-RID for Rhode Island proposes to support research seed grants through two separate efforts. The first is a specific research effort for an innovative application of remotely sensed seismometry for planetary applications, entitled “Remote Sensing of Sub-Surface Structure of Extraterrestrial Bodies using Laser Doppler Velocimetry Measurements of Rayleigh Waves” from the University Rhode Island. The second effort will be a competition held each year for research seed grants for the remaining available funds. All awards will be directly relevant to one or more NASA missions and objectives, consistent with priorities in one or more NASA Mission Directorate priorities.

NASA-EPSCoR Missouri Research Infrastructure Development (RID)

15-EPSCoR RID-0019

Missouri University of Science & Technology

David Riggins

During the FY2015-FY2017 grant performance period, the NASA-EPSCoR Missouri jurisdiction will continue to focus on enhancing the research and technology capabilities and capacities of the state's institutions with an emphasis on developing infrastructure of importance to NASA and the state of Missouri. Improvement in the research and technology infrastructure of the state is necessary for enhancing the state's contributions to the solutions of scientific and technical problems of importance to NASA. Therefore, funds disbursed under this program will be specifically used to develop, improve, and enhance the research infrastructure within the state, with the intent to quantitatively increase long-term research competency, research infrastructure-related training, and the degree of competitiveness for the state's institution to garner higher levels of federal funding.

Experimental Program to Stimulate Competitive Research (EPSCoR) Research Infrastructure Development (RID)

15-EPSCoR RID-0020

University of Oklahoma, Norman

Victoria Snowden

The Oklahoma NASA EPSCoR Research Infrastructure Development goal is “To help Oklahoma researchers develop relationships with NASA through improved research capabilities that are long-term, self-sustaining, and nationally competitive.”

The goals of both the Oklahoma EPSCoR and the Oklahoma NASA EPSCoR parallel the NASA EPSCoR Program:

- 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 between 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.

The magnitude and scope of Project Elements in Oklahoma’s Research Infrastructure Development (RID) proposal are intended to provide the greatest possible opportunity for Oklahoma researchers and students to identify and develop technology and research initiatives, to establish long-term relationships with NASA, and gain support from competitive sources outside of the NASA EPSCoR program. Specific RID activities will target four objectives:

1. Initiate contacts and forge direct partnerships with scientists and researchers at the three Mission Directorates, the Office of the Chief Technologist, and/or one or more of the ten NASA Centers;
2. Promote collaborative research programs with the NASA Centers, Mission Directorates and Industry;
3. Initiate research activities in areas of strategic importance to the Agency; and
4. Support undergraduate and graduate research experiences.

ALABAMA NASA EPSCoR RESEARCH INFRASTRUCTURE DEVELOPMENT FY15

15-EPSCoR RID-0021

University of Alabama, Huntsville

John Gregory

The purpose of the Alabama NASA EPSCoR RID program is to build core capabilities at Alabama's universities and other collaborative institutions. We shall build competitive research and technology development capabilities in areas of interest to both NASA and the State of Alabama. The interests of NASA are defined in the CAN (pages 6,7 and 8), in the 2014 NASA Strategic Plan, and by the 3 strategic goals of the Office of Education's ARCD. The interests of the State of Alabama in this regard are defined by the Alabama State EPSCoR Committee (SEC), which oversees all EPSCoR programs within the state. The PI of this proposal is Dr. John Gregory, the Alabama NASA EPSCoR Director, the Alabama Space Grant Consortium Director, and a professor at UAHuntsville. He reports regularly to the Alabama SEC on NASA EPSCoR matters and is known personally by most of the SEC members. Dr. Gregory most recently addressed the Alabama SEC in January 2015 and their approval to continue the RID Program in the same format as has been successfully used for the past 2 cycles was affirmed. The core of the 2015 Alabama RID program will be the development of individual researcher capability: Seed Grants. Most of the other elements will be embedded within this core element. We propose this because the Seed Grant program that has been run by our office for the past 8 years has been very successful.

SC NASA EPSCoR Research Infrastructure Development (RID) 2015-2018

15-EPSCoR RID-0022

College of Charleston

Cassandra Runyon

The South Carolina Space Grant Consortium (SCSGC) requests \$150,000 for its 2015 NASA EPSCoR Research Infrastructure Development (RID) program to further research and improve the quality of South Carolina and the US Virgin Island's future workforce. This RID program will provide support for research and proposal preparation for scientists, engineers and students working to fulfill NASA's mission requirements in support of NASA's Vision to reach for new heights and reveal the unknown. In South Carolina and the US Virgin Islands, the NASA EPSCoR program's goal is to foster academic research that enables researchers to meet NASA mission objectives and to develop a self-sustaining and nationally competitive research program that can compete for non-EPSCoR funds. A partnership between the SC NASA EPSCoR / SC Space Grant Consortium (SCSGC) Office and the SC EPSCoR/Idea program helps SC researchers to establish contacts with and access resources from NASA. The SC NASA EPSCoR opportunity provides seed grant support for competitively selected projects that will benefit both NASA and South Carolina. Proposals receive quality external and peer reviews as a part of the competitive process. Those proposals selected for funding include strong research components, have strong NASA ties and connect the significance of their research to SC's vision for competitiveness in science, technology, engineering and mathematics (STEM), and demonstrate potential for growth and sustainability.

Vermont NASA EPSCoR RID Phase V

15-EPSCoR RID-0023

University of Vermont, Burlington

Darren Hitt

This document details the proposed activities, along with corresponding priorities, targets and metrics, for the Phase V installment of the NASA EPSCoR Research Infrastructure Development (RID) project for Vermont. The Vermont NASA EPSCoR Program operates at the intersection of both NASA priorities and the State's vision for technology and economic development. According, all activities are part of a coordinated strategy to develop research infrastructure in areas of importance to NASA's mission while creating ties between Vermont's academic researchers, its technology-based companies, and NASA centers.

A multi-faceted approach will be taken to foster NASA-relevant research among faculty, graduate students and the industrial sector while also strengthening collaborative ties with NASA personnel. The main project elements proposed for Vermont's Research Infrastructure Development Project include: Research Minigrants for pilot projects; Small-Scale Grants for more mature projects; and NASA Center Travel Grants for exploring new, or strengthening existing, research collaborations. Additionally, the Industrial Partners Initiative (IPI), based on a SBIR Phase 'O' concept, will foster links between Vermont's knowledge/technology-based private sector companies, academia, and NASA.

Finally, significant efforts will be made in all activities to encourage the participation of underrepresented minorities and female students. While the non-diverse population of the State of Vermont will continue to pose challenges in this regard, we are confident that we will meet or exceed our target metrics.

Puerto Rico NASA EPSCoR Research Infrastructure Development

15-EPSCoR RID-0024

University of Puerto Rico, San Juan

Gerardo Morell

Established in 1994 by the Resource Center for Science and Engineering (RCSE) of the University of Puerto Rico (UPR) in conjunction with the National Aeronautics and Space Administration (NASA), the Puerto Rico NASA Experimental Program to Stimulate Competitive Research (PR NASA EPSCoR) implements strategic tasks and projects directed at enhancing Puerto Rico's research competitiveness and infrastructure, science and technology capabilities, and higher education, while building the core strength required to engage in technology development methods and activities for the solution of scientific and technical problems of importance to NASA in alignment with NASA's Mission.

The goal of the PR NASA EPSCoR Research Infrastructure Development (RID) program is to build in Puerto Rico the core strength needed to increase competitive research and technology development methods and activities for the solution of scientific and technical problems of importance to NASA in coordination and collaboration with NASA Centers and Mission Directorates and other research centers around the Nation that seek to advance U.S. scientific, security, and economic interests through a robust space exploration program.

PR NASA EPSCoR RID supports the initiation of new research projects in collaboration with NASA Centers and Mission Directorates that expand Puerto Rico's capabilities in NASA mission-related sciences and technology-development projects. To encourage and nurture activities that advance NASA's research priorities, the RID projects are competitively selected based on their connection, interaction, and relevance to NASA centers. The evaluation criteria include: intrinsic scientific and/or technical merit; alignment with NASA technology needs; relevance to, partnerships with, and interactions with the jurisdiction; credentials and track record of the investigators.

The emphasis is placed on developing a core expertise capable of successfully competing for funds from NASA and non-NASA sources outside of the EPSCoR program. With the guidance and support of the Technical Advisory Committee, the RID researchers receive technical assistance to transition their projects progressively toward gaining support from sources outside the NASA EPSCoR program by aggressively pursuing additional funding opportunities offered by NASA, industry, other federal agencies, and other sources.

Wyoming NASA EPSCoR RID Proposal 2015 - 2018

15-EPSCoR RID-0025

University of Wyoming

Paul Johnson

Wyoming remains the state with the smallest population (slightly over 500,000) and its economy is largely driven by extractive industries, agriculture, and tourism. The University of Wyoming (UW) is the only Ph.D. granting research institution in the state and therefore scientific activities that address key areas of state concern are concentrated at UW. In the University of Wyoming's Academic Plan for 2009-2014, one of the main areas for increased development is in critical areas of science and technology, one being materials science research. Additionally, there is a continued focus on materials science and engineering research through the Wyoming Governor's Energy, Engineering, and STEM Integration Task Force and the Wyoming Governor's University of Wyoming Science Programs and Facilities Task Force. Both of these task forces are involved in developing and identifying high-priority areas for research and economic focus for the state and the University. The University of Wyoming Academic Plan Draft for 2015-2020 is ongoing and members of the Materials Science group continue to give input into future plans for areas of research distinction in the state.

Over the course of the past several years, Wyoming NASA EPSCoR has been key in founding the Materials Science and Engineering program (MSE) at the University of Wyoming, which brings together students and faculty with research interests and expertise in materials science and engineering from many departments. The MSE program provides a rich, collaborative research environment for graduate students, research scientists, and faculty. The main objective of funding for Wyoming NASA EPSCoR is to continue to develop within the University of Wyoming a coherent program in materials science and engineering that is aligned with stated NASA objectives and coordinated with NASA Centers conducting materials science research. Although there are a number of ongoing materials science research programs at UW, collaborations are underutilized and there is a lack of coordination towards NASA goals and objectives. The University of Wyoming has made the development of a Materials Science and Engineering (MSE) program a priority in its academic plans and the NASA EPSCoR program has been critical to its development.

The core funding for Wyoming NASA EPSCoR will continue to support the development of the MSE program, in addition to supporting faculty seed grants, graduate fellowships, a Materials Science Speaker Series, a MSE Graduate Symposium, and travel opportunities to develop new contacts and cooperative research ties with NASA Centers and/or Mission Directorates and to develop new partnerships within the jurisdiction. These project elements will continue to enable a cohesive, collaborative group in materials science at the University of Wyoming aimed at furthering NASA goals and objectives in materials science research, meeting jurisdiction economic development needs, and strengthening University academic goals and areas of distinction. They will also enable the development of partnerships with organizations outside of the University, which will enhance the jurisdiction's abilities to respond to the research and technology development needs of NASA and the state.

Wyoming NASA EPSCoR goals and objectives include: 1) Increase research opportunities in materials science at the University of Wyoming, 2) Continue to enable a cohesive materials science research group at the University, 3) Provide student opportunities in materials science research to attract and retain students in materials science and strengthen workforce development in these areas, 4) Build collaborations with NASA Centers and increase partnerships within the jurisdiction, and 5) Encourage participation of underrepresented minorities and women in NASA EPSCoR programs.

Nevada NASA EPSCoR_ RID

15-EPSCoR RID-0026

University of Nevada, Reno

Lynn Fenstermaker

The State of Nevada is the most arid and one of the most sparsely populated states within the United States. As such, it contains ideal locations that meet the multiple research needs within each of NASA's mission directorates. The Nevada National Security Site (formerly the Nevada Test Site) was a training site for the Apollo Astronauts. The State of Nevada (NV) and the Nevada System of Higher Education (NSHE) have been engaged in strategic planning to advance science and technology based research and economic development within the state. The State of NV successfully competed for a Federal Aviation Administration (FAA) Unmanned Aircraft Systems (UAS) Test Site that is providing opportunities for NSHE research collaborations with NASA Centers (Ames and Armstrong) and high-tech businesses. Another effort sponsored by the Governor's Office of Economic Development recently initiated a "Knowledge Fund" grant process to help sponsor collaborations among NSHE research institutions and science/technology based industry in NV. The most recent Nevada NASA EPSCoR Research Infrastructure Development (RID) activities have led to the teaming of researchers in the areas of aerosol research, robotics and vision research, earth systems sciences research in the Great Basin, planetary surface processes, and designs for SAFE testing facilities for nuclear thermal rockets. As NSHE plans for the future, the System Sponsored Programs and EPSCoR Office continues to provide resources to NSHE faculty and administration to help identify additional strengths and new opportunities to build competitive research programs within NASA relevant STEM fields.

This proposal provides opportunities to enhance Nevada's research infrastructure that will result in sustainable research programs relevant to both NASA and the State's interests.