

NASA EPSCoR

Request for Pre-proposals

TIMETABLE:

Issue Date: **November 23, 2009**

Notice of Intent (required) due: **January 6, 2010**

Last day for questions and answers about this solicitation: **January 11, 2010**

Pre-proposals due: **January 19, 2010**



LOUISIANA EXPERIMENTAL PROGRAM TO STIMULATE COMPETITIVE RESEARCH (EPSCoR)

Louisiana Board of Regents
1201 North Third Street, Suite 6-200
Baton Rouge, Louisiana 70802
(225) 342-4253

I. PROGRAM DESCRIPTION

I.A. OVERVIEW

This Request for Pre-Proposals (RFP) is being issued in response to the release of the FY2010 NASA EPSCoR Cooperative Agreement Notice (CAN). The FY2010 CAN is available at: http://nspires.nasaprs.com/external/viewrepositorydocument/cmdocumentid=212946/EPSCoR_2010_Res%20CAN_11-19-09.pdf.

Each of twenty-three EPSCoR jurisdictions is eligible to submit two proposals for consideration; Louisiana's will be submitted by the Board of Regents (BOR). This solicitation seeks pre-proposals which will be reviewed by an external panel. The panel will recommend the 2 most meritorious pre-proposals (with alternates), which will then be further developed and included as components of the State's proposal submissions.

Under the FY2009 competition, NASA EPSCoR awarded twenty-seven (27) research projects (one to Louisiana) with funding of up to \$750,000 for a three-year period of performance. A list of the projects awarded in the past three competitions is included as Appendix A.

I.B. OBJECTIVES

NASA EPSCoR proposals are expected to establish research programs that will make significant contributions to the strategic research and technology priorities of one or more of the four NASA Mission Directorates, working with one or more of the ten NASA field centers, and contribute to the overall research infrastructure, science and technology capabilities, higher education, and economic development of the State.

I.C. ELIGIBILITY

Individuals holding a tenured, tenure-track, or research faculty position at any of Louisiana's public institutions of higher education, as well as accredited independent institutions of higher education that are members of the Louisiana Association of Independent Colleges and Universities, are eligible to submit pre-proposals under this solicitation. Individuals who are not employed by these institutions may serve as Consultants; however, they may not be listed as investigators and must not be cited on the cover sheet of the pre-proposal. A faculty member may submit only one pre-proposal in response to this solicitation as Principal Investigator (PI), but may be a co-investigator on additional pre-proposals. Principal Investigators of proposals funded in the last NASA EPSCoR competition in FY2009 are not eligible to serve as leads of a proposal in this competition. (Note: A single individual—the Principal Investigator—must be responsible for conducting the investigation. Co-PIs are not allowed. Other investigators are referred to as Co-Investigators.)

I.D. FINANCIAL CONSIDERATIONS

Each proposal may request NASA funding of up to \$750,000 for a three-year project. The BOR will provide cost sharing at a 1:1 ratio to support the research project. Of the \$750,000 in NASA funds, \$30,000 per year (\$90,000 total) will be reserved for management of the project; therefore, for each proposed project, the PI may request a maximum of \$660,000 in NASA funds and \$750,000 in BOR Support Funds. Furthermore, while the annual budget request can reflect a distribution of NASA funds that varies from year to year, the BOR funds request must be held constant for all three years of the proposed project; the maximum **annual** request is \$250,000 for BOR Support Funds.

Institutional cost sharing is also expected. Applicants are encouraged to consider methods of cost sharing which would add value to the proposal and to the State's existing research capabilities.

I.E. ASSESSMENT OF PRE-PROPOSALS AND PREPARATION OF FULL PROPOSALS

All NASA-EPSCoR pre-proposals will be reviewed by a panel of experts from outside Louisiana. The PIs of the pre-proposals selected for development into full proposals will be notified on or about February 1, 2010 and will be provided feedback from the panel. Final full proposals (with budgets approved by the PI's office of sponsored programs) will be due at the BOR on February 17, 2010. The PIs of successful pre-proposals are expected to be available to work closely with the NASA EPSCoR Project Director (Dr. John Wefel, LSU Department of Physics and Astronomy) and BOR staff from February 1, 2010 as the recommended proposals are prepared for submission to NASA. **If changes to this timetable become necessary, the BOR will notify all proposers.**

I.F. TIMETABLE (DATES MAY CHANGE, SUBJECT TO REQUIREMENTS OF FY2010 CAN)

January 6, 2010	Notice of Intent due at BOR
January 11, 2010	Last day to answer questions about this solicitation
January 19, 2010	Pre-proposals due
February 1, 2010	Successful proposers notified to develop full proposals
February 17, 2010	Full proposals due at BOR (for the selected projects)
February 19, 2010	Proposals due at NASA (submitted by BOR)

I.G. QUESTIONS ABOUT THIS SOLICITATION

Specific questions concerning this solicitation and the requirements set forth herein should be directed **in writing** to Mr. Jim Gershey, Executive Director of Special Programs, by email to jim.gershey@la.gov. Questions will be accepted and answered through January 11, 2010. A running compilation of all questions asked about this RFP and all answers provided in response to those questions will be periodically posted on the BoR website at <http://laregents.org/www2/index.htm>.

II. PRE-PROPOSAL SUBMISSION AND FORMAT REQUIREMENTS

II.A NOTICE OF INTENT (Required)

Before a pre-proposal will be accepted, a notice of intent (NOI) in portable document format (pdf) must be submitted by the PI to Mr. Jim Gershey at jim.gershey@la.gov, with a copy to the PI's office of sponsored programs, no later than the close of business (4:30 p.m.) on January 6, 2010. Use the form attached to this document. An email acknowledging receipt of the NOI will be sent to the PI and office of sponsored programs. Failure to receive an email acknowledgement by noon on January 7, 2010 indicates that the NOI has not been received by the BOR. Do NOT send this NOI to NASA.

II.B. TYPE SIZE AND FORMATTING

The project description must be formatted to a standard 8-1/2" x 11" page and have 1-inch top, bottom and side margins. Type height should be no smaller than 12 point; type density should be no more than 12 characters per inch; line spacing should be no more than five lines within a vertical space of one inch.

II.C. PRE-PROPOSAL ELEMENTS

The pre-proposal must contain the following elements, in the order presented here:

1. **Cover Page:** use the cover page form attached to this document.
2. **Project Description** –not to exceed fifteen (15) pages, consecutively numbered, including text as well as visual materials, which contains the project description elements described in Section VII of the FY2010 CAN, entitled “Proposal Preparation” (page 17).

Proposers should also refer to Section VIII of the FY2010 CAN, entitled “Proposal Evaluation Criteria and Selection Process” when preparing the proposal.
3. **References** – are not included in the page limitation for the project description.
4. **Budget and Budget Narrative** – Use Louisiana NASA EPSCoR Pre-proposal Budget Form attached to this document (this form is also provided in MS Excel as a separate attachment). Prepare a separate budget page for each year plus a cumulative budget page. A budget justification must be included. Indirect Cost request is limited to 25% of salaries, wages, and fringe benefits. Unrecovered indirect costs may be used as institutional cost sharing. Identify all proposed subawards and provide as complete financial detail as possible, including a budget from each subaward institution.
5. **Biographical Sketches** – Use BOR Form 1001Bio, which is attached to this document. Biographical Sketches of the Principal Investigator (PI) and Co-I(s) are required and must not exceed two (2) pages each. NSF, NASA, or other formats may be substituted, as long as they provide the information requested on the BOR form.
6. **Current and Pending Support** – Use BOR Form 1001CP attached to this document. Current and Pending Support for PI and Co-Investigators must be provided. The NSF or NASA current and pending support form may be substituted.
7. **Letters of Support** – may be appended to the pre-proposal. No other appendices are allowed.

II.D. SUBMISSION OF PRE-PROPOSAL

The pre-proposal must be submitted to the Board of Regents by the submitting institution’s authorized representative no later than the close of business (4:30 p.m.) on January 19, 2010. **Pre-proposals directly submitted to the Board of Regents by individual PIs will not be accepted.** All online submissions must be uploaded as a single PDF document through the LOGAN system.

Instructions for PIs:

1. Go to URL: <https://laregents.org/cgi-bin/logan/home>.
2. Login using your LOGAN credentials.
 - a. If you are new user and do not have a LOGAN login, please click on “New user registration” to register.
 - b. If you have logged into LOGAN before and have forgotten your credentials please send an email to karthik@la.gov.

3. After logging in, click on “NASA EPSCoR Pre-proposals” and use the provided online form to select and upload the PDF document. **Note:** the entire pre-proposal must be contained in a **single PDF document**. The LOGAN system will NOT accept multiple PDF document uploads for a single submission.
4. If upload is successful, send the pre-proposal to your sponsored programs office by clicking the “Send Proposal to OSP/OSR”. A proposal number will be assigned after the pre-proposal is successfully sent to the PI’s Office of Sponsored Programs/Research.
5. An email confirmation will be sent to the PI with the proposal number.
6. The OSP/OSR will review the pre-proposal, and, if approved, send the pre-proposal to the Board of Regents.

Instructions for the OSP/OSR:

1. Go to URL: <https://laregents.org/cgi-bin/logan/home>.
2. Login using your Institutional credentials.
3. Select “NASA EPSCoR Pre-proposals”.
4. Follow simple onscreen instructions to submit the pre-proposal to the Board of Regents, EPSCoR office.
5. An email will be sent to both the PI and the OSP/OSR to confirm successful submission of the pre-proposal.

If **both** the PI and the OSP/OSR do not receive confirmation emails within 12 hours, the pre-proposal was not received. Please contact Karthik Poobalasubramanian by phone at (225) 342-4253 or by email at karthik@la.gov.

NOTICE OF INTENT: FY2010 NASA EPSCoR Pre-proposal

NAME OF PRINCIPAL INVESTIGATOR (PI):	NAME OF LEAD ORGANIZATION:
PI DEPARTMENT	PI PHONE NUMBER and EMAIL ADDRESS
TITLE OF PROPOSED PROJECT:	
LIST PARTICIPATING INSTITUTIONS/CAMPUSES:	
LIST PROJECT DISCIPLINES:	
THE PROPOSED WORK WILL SUPPORT THE RESEARCH PRIORITIES OF THE FOLLOWING NASA DIRECTORATES AND/OR NASA FIELD CENTERS:	
PROJECT SYNOPSIS (maximum 250 words):	
NAMES of OTHER INVESTIGATORS	INSTITUTION/DEPARTMENT
CO-I	
CO-I	
CO-I	
CO-I	

COVER SHEET: FY2010 NASA EPSCoR Pre-proposal

FOR CONSIDERATION BY BOR ORGANIZATION UNITS(S)			
Sponsored Programs			
PROGRAM ANNOUNCEMENT NASA EPSCoR			
NAME OF LEAD ORGANIZATION:	ADDRESS OF LEAD ORGANIZATION, INCLUDING ZIP CODE:		
PI DEPARTMENT	PI POSTAL ADDRESS		
TITLE OF PROPOSED PROJECT:			
REQUESTED AMOUNT, YR 1: \$	REQUESTED AMOUNT, YR 2: \$	REQUESTED AMOUNT, YR 3: \$	TOTAL REQUESTED: \$
LIST PARTICIPATING INSTITUTIONS/CAMPUSES:			
LIST PROJECT DISCIPLINES:			
NAMES (TYPED)	Highest Degree/ year attained	Telephone Number	Email Address
PRINCIPAL INVESTIGATOR (PI)			
CO-Investigator			
CO-Investigator			
CO-Investigator			
CO-Investigator			

Louisiana NASA EPSCoR Pre-proposal Budget Form

PROJECT TITLE:		PROJECT YEAR: (circle one)			
		1	2	3	combined
PRINCIPAL INVESTIGATOR:		ORGANIZATION:			
1	SALARY COSTS	NASA Funds Requested	Non-Federal Match		
			BOR	Institutional	
	1				
	2				
	3				
	4				
	5 Graduate Student Support				
	6 Undergraduate Student Support				
	TOTAL PERSONNEL				
2	FRINGE BENEFITS (if charged as direct costs) Specify Rate:				
3	TOTAL WAGES, SALARIES, BENEFITS (1 + 2)				
4	SUPPLIES & MATERIALS				
5	EQUIPMENT (List item & dollar amount for items exceeding \$1,000)				
	Total Permanent Equipment				
6	TRAVEL COSTS				
	Domestic (Incl. Canada & U. S. possessions.)				
	Foreign				
7	PUBLICATION & REPORT COSTS				
8	SUBAWARD COSTS				
9	CONSULTANT COSTS				
10	COMMUNICATION COSTS				
11	OTHER DIRECT COSTS				
12	TOTAL DIRECT COSTS				
13	INDIRECT COSTS (Specify rates.) 1. Federal: 25% of line 3 2. BOR: 25% of line 3 3. Institutional: (specify rate)				
	Total Indirect Costs				
14	TOTAL PROJECT COSTS (12 + 13)				

BIOGRAPHICAL SKETCH (Form 1001Bio)

Provide the following information for the senior personnel on the project. Begin with the Principal Investigator.
DO NOT EXCEED 2 PAGES PER PERSON.

- A. Vitae, listing professional and academic essentials and mailing address.
- B. List up to 5 publications most closely related to the proposed project and up to 5 other significant publications, including those being printing. Patents, copyrights, or software systems developed may be substituted for publications. Do not include additional lists of publications, invited lectures, etc. Only the list of up to 10 will be used in merit review.
- C. List of persons, other than those cited in the publication list, who have collaborated on a project or a book, article, report or paper within the last 48 months, including collaborators on this proposal. If there are no other collaborators, please indicate that fact.
- D. Names of graduate and post-graduate advisors and advisees.

The information in C. and D. is used to help identify potential conflicts or bias in the selection of reviewers.

CURRENT AND PENDING SUPPORT (Form 1001CP)

(From ALL sources, including BOR Support Fund)

The following information MUST be provided for each investigator and other senior personnel. Use additional sheets as necessary.

NAME OF INVESTIGATOR:

<p>Status of Support: <input type="checkbox"/> Current <input type="checkbox"/> Pending <input type="checkbox"/> Submission Planned in Near Future</p> <p>Project/Proposal Title:</p> <p>Source of Support:</p> <p>Award Amount (or Annual Rate): \$ _____ Period Covered: _____</p> <p>Location of Activity:</p> <p>Person-Months or % of Effort Committed to the Project: <input type="checkbox"/> Cal Yr <input type="checkbox"/> Acad <input type="checkbox"/> Summ</p>
<p>Status of Support: <input type="checkbox"/> Current <input type="checkbox"/> Pending <input type="checkbox"/> Submission Planned in Near Future</p> <p>Project/Proposal Title:</p> <p>Source of Support:</p> <p>Award Amount (or Annual Rate): \$ _____ Period Covered: _____</p> <p>Location of Activity:</p> <p>Person-Months or % of Effort Committed to the Project: <input type="checkbox"/> Cal Yr <input type="checkbox"/> Acad <input type="checkbox"/> Summ</p>
<p>Status of Support: <input type="checkbox"/> Current <input type="checkbox"/> Pending <input type="checkbox"/> Submission Planned in Near Future</p> <p>Project/Proposal Title:</p> <p>Source of Support:</p> <p>Award Amount (or Annual Rate): \$ _____ Period Covered: _____</p> <p>Location of Activity:</p> <p>Person-Months or % of Effort Committed to the Project: <input type="checkbox"/> Cal Yr <input type="checkbox"/> Acad <input type="checkbox"/> Summ</p>
<p>Status of Support: <input type="checkbox"/> Current <input type="checkbox"/> Pending <input type="checkbox"/> Submission Planned in Near Future</p> <p>Project/Proposal Title:</p> <p>Source of Support:</p> <p>Award Amount (or Annual Rate): \$ _____ Period Covered: _____</p> <p>Location of Activity:</p> <p>Person-Months or % of Effort Committed to the Project: <input type="checkbox"/> Cal Yr <input type="checkbox"/> Acad <input type="checkbox"/> Summ</p>

Appendix A

Previously Funded NASA EPSCoR Proposals

NASA EPSCoR Awards: 2007 2008 2009

State	Lead Institution (Award Recipient)	Principal Investigator	Institution Conducting Research	Science Principal Investigator	Title
2007					
Alabama	University of Alabama, Huntsville	N/A	University of Alabama, Huntsville	N/A	Device Realization for Sensor and Health Monitoring of Space Transportation Systems
Alaska	University of Alaska, Fairbanks	N/A	University of Alaska, Fairbanks	N/A	Application of a new generation of ground- and satellite-based whistler-mode wave experiments as diagnostic tools for probing the structure of magnetospheric plasmas
Arkansas	University of Arkansas, Little Rock	N/A	University of Arkansas, Little Rock	N/A	Noninvasive Prospecting for Lunar Ores and Minerals
Idaho	University of Idaho	N/A	Boise State University	N/A	Reliability Investigations of Radiation Resistant Multi-State Phase-Change Memory
Kentucky	Western Kentucky University	N/A	University of Kentucky	N/A	Efficacy of Countermeasures to Cardiovascular Deconditioning in Men and Women during Simulated Moon Explorations
Louisiana	Louisiana Board of Regents	John Wefel	Louisiana State University, Baton Rouge	Guoqiang Li	NASA EPSCoR Research Project: Smart Adhesively Bonded High-Performance Joint for Composite Structures
Louisiana	Louisiana Board of Regents	John Wefel	Louisiana State University, Baton Rouge	Michael Cherry	NASA EPSCoR Research Project: Multiwavelength/Multimessenger Observations in Conjunction with the GLAST Satellite Mission

State	Lead Institution (Award Recipient)	Principal Investigator	Institution Conducting Research	Science Principal Investigator	Title
Maine	Maine Space Grant Consortium	N/A	University of Southern Maine	N/A	Toxicology of Metal and Lunar Particles in Biological Systems
Montana	Montana State University	N/A	University of Montana	N/A	Biomolecular Substrates for Extraterrestrial Life: Revealing the Secrets of Extremophilic Archaea and their Viruses
Nebraska	University of Nebraska, Omaha	N/A	University of Nebraska, Lincoln	N/A	Satellite Contaminant Materials Research Program
Nevada	Desert Research Institute	N/A	University of Nevada, Reno	N/A	Exploring Planetary Surfaces: Earth, Moon and Mars
New Hampshire	University of New Hampshire	N/A	University of New Hampshire	N/A	Enhancing Research and Education Capacity for Integration of Earth Observations, Infectious Diseases Ecology, and Public Health in New Hampshire
New Mexico	New Mexico State University	N/A	New Mexico State University	N/A	Structural Health-Monitoring and Self-Healing of Aerospace Structures
Oklahoma	University of Oklahoma	N/A	University of Oklahoma	N/A	Center for Lightning Advanced Studies and Safety (CLASS)

State	Lead Institution (Award Recipient)	Principal Investigator	Institution Conducting Research	Science Principal Investigator	Title
Oklahoma	University of Oklahoma	N/A	Oklahoma State University	N/A	OK NASA EPSCoR: Tissue Equivalent Detectors for Space Crew Dosimetry and Characterization of the Space Radiation Environment
Puerto Rico	University of Puerto Rico	N/A	University of Puerto Rico	N/A	Space Exploration Enabling Power Systems: Partnership to Develop the Fundamental Nanoscience at UPR and Perform the Corresponding Proof-of-Concept at NASA GRC
South Carolina	The College of Charleston	N/A	University of South Carolina	N/A	Development of Advanced Unitized Regenerative Fuel Cell
South Carolina	The College of Charleston	N/A	Clemson University	N/A	Development of a Lunar Capable Rover Tweel for a Modular Manned Rover System: Analytical and Experimental Research
South Dakota	South Dakota School of Mines and Technology	N/A	South Dakota School of Mines and Technology	N/A	Continuous Nano-Scaled Carbon Fibers with Superior Mechanical Strength and Their Innovative Composites for Aeronautics and Space Applications
South Dakota	South Dakota School of Mines and Technology	N/A	South Dakota State University	N/A	Land cover dynamics, regional hydrometeorology, and the vulnerability of rain-fed agriculture to climate change under scenarios of extensive cultivation of biofuel feedstocks
Vermont	University of Vermont	N/A	University of Vermont	N/A	Investigation of Critical Aerothermodynamic Phenomena for Hypersonic Vehicles

State	Lead Institution (Award Recipient)	Principal Investigator	Institution Conducting Research	Science Principal Investigator	Title
West Virginia	West Virginia Space Grant Consortium	N/A	Marshall University	N/A	Molecular and Cellular Mechanisms Underlying Skeletal Muscle and Cardiovascular Adaptation to Simulated Microgravity
West Virginia	West Virginia Space Grant Consortium	N/A	West Virginia University	N/A	Design, Simulation, Validation, and Flight Testing of Adaptive Fault-Tolerant Flight Control Systems

2008

Arkansas	University of Arkansas at Little Rock	Dr. Mitchell Hudson	University of Arkansas - Fayetteville	Dr. Daniel Kennefick	A Census of Supermassive Black Holes in the Universe
Delaware	University of Delaware	Dr. Dermott Mullan	University of Delaware	Dr. William Matthaesus	Development of a Delaware Center for Study of Space Radiation Effects: an EPSCoR Research and Education Initiative
Delaware	University of Delaware	Dr. Dermott Mullan	University of Delaware	Dr. Xiao-Hai Yan	Building and Enhancing a Competitive and Sustainable Remote Sensing Infrastructure for Critical Zone Studies and Cutting Edge Research
Idaho	University of Idaho	Dr. Jean Teasdale	University of Idaho	Dr. Ronald Crawford	Spacecraft Component Sterilization Using Supercritical Carbon Dioxide
Kansas	Wichita State University	Dr. Leonard Miller	Wichita State University	Dr. Hyuck Kwon	NASA's Lunar and Martian Surface Communications Systems with Efficient Miniature Antennas

State	Lead Institution (Award Recipient)	Principal Investigator	Institution Conducting Research	Science Principal Investigator	Title
Kentucky	Western Kentucky University	Dr. Karen Hackney	University of Kentucky	Dr. Leonida Bachas	Versatile Biosensing Platform for Monitoring Bone Markers for Space Medicine
Maine	Maine Space Grant Consortium	Dr. Terry Shehata	University of Maine	Dr. Ali Abedi	Real-time Wireless Shape Monitoring of Space Structures
Montana	Montana State University	Dr. William Hiscock	Montana State University	Dr. Kevin Repasky	Development of a Novel High Spectral Resolution Lidar for Studies of the Effects of Aerosols on the Earth's Climate System
Nebraska	University of Nebraska at Omaha	Dr. Scott Tarry	University of Nebraska at Lincoln	Dr. Matthew Dwyer	Differential Symbolic Execution: Supporting Evolution of High-Assurance Software
New Mexico	New Mexico State University	Dr. Patricia Hynes	New Mexico State University	Dr. Nancy Chanover	Infrared Instrument Development for In-Situ Organic Detection
Tennessee	Vanderbilt University	Dr. Alvin Strauss	University of Memphis	Dr. Gary Emmert	Development and Automated Drinking Water Disinfection System
Vermont	University of Vermont	Dr. William Lakin	University of Vermont	Dr. Jeffrey Marshall	Active Surface Technologies for Dust Mitigation in Martian and Lunar Environments

State	Lead Institution (Award Recipient)	Principal Investigator	Institution Conducting Research	Science Principal Investigator	Title
Wyoming	University of Wyoming	Dr. Glenn Tootle	University of Wyoming	Dr. Glenn Tootle	Climate Variability and Glacial Recession in the Wind River Range and Grand Teton Range, Wyoming
2009					
Alabama	University of Alabama - Huntsville	Dr. John Gregory	University of Alabama	Dr. Gregory Thompson	High Temperature Shape Memory Alloys for Improved Efficiency in Aeronautic Turbomachinery
Alabama	University of Alabama - Huntsville	Dr. John Gregory	University of Alabama in Huntsville	Dr. Gary Zank	The Dynamical Inner Heliosphere and the Space Radiation Environment
Arkansas	University of Arkansas - Little Rock	Dr. Mitchell Hudson	University of Arkansas at Little Rock	Dr. Gary Anderson	Mobile Surveying for Atmospheric and Near-Surface Gases of Biological Origin
Hawaii	University of Hawaii Systems	Dr. Luke Flynn	University of Hawaii at Manoa	Dr. Robert Wright	Development of a Low-mass, Power-efficient, Low-cost Sensor Package for Hyperspectral Imaging of the Earth's Surface, Oceans, and Atmosphere
Idaho	University of Idaho	Dr. David Atkinson	University of Idaho	Dr. Donald Plumlee	Electrical Propulsion in Low Temperature Co-Fired Ceramic Materials
Iowa	University of Northern Iowa	Dr. William Byrd	Iowa State University	Dr. Michael Kessler	Multifunctional Polymer Matrix Composites

State	Lead Institution (Award Recipient)	Principal Investigator	Institution Conducting Research	Science Principal Investigator	Title
Kansas	Wichita State University	Dr. Leonard Scott Miller	Wichita State University	Dr. James Steck	Aeroelastic Modeling Effects and Flight Test Demonstration of Resilient Adaptive Flight Controls on a General Aviation Testbed: Dynamic Inverse and Adaptive Critic Methods
Kansas	Wichita State University	Dr. Leonard Scott Miller	Wichita State University	Dr. Bob Miniae	Study of Part Deformation and Tool Thermal Mass in Curing of Large Composite Structures
Louisiana	Louisiana Board of Regents Foundation	Dr. John Wefel	Louisiana State University	Dr. Shengmin Guo	Novel Nano-Structured Thermal Barrier Coatings
Mississippi	University of Mississippi	Dr. Peter Sukanek	University of Mississippi	Dr. Peter Sukanek	Reconfigurable Antennas and Reflectarrays for NASA Space Science Missions
Montana	Montana State University	Dr. Angela Des Jardins	Montana State University	Dr. Stephen Sofie	Regenerative SOFC Development for Aerospace Technology Platforms
Nebraska	University of Nebraska - Omaha	Dr. Scott Tarry	University of Nebraska at Lincoln	Dr. Erick Jones	RFID and RTLS Enhancement for Inventory Management and Logistics of Space Transportation Systems
Nebraska	University of Nebraska - Omaha	Dr. Scott Tarry	University of Nebraska at Lincoln	Dr. Shane Farritor	Miniature In Vivo Surgical Robotics for Long-Term Space Flight

State	Lead Institution (Award Recipient)	Principal Investigator	Institution Conducting Research	Science Principal Investigator	Title
New Mexico	New Mexico State University	Dr. Patricia Hynes	New Mexico State University	Dr. Bernard McNamara	New Mexico Solar and Stellar Seismology
New Mexico	New Mexico State University	Dr. Patricia Hynes	New Mexico Tech	Dr. Michelle Creech-Eakman	New Mexico Exoplanet Spectroscopic Survey Instrument (NESSI)
North Dakota	University of North Dakota	Dr. Paul Hardersen	University of North Dakota	Dr. Pablo De Leon	Integrated Strategies for the Human Exploration of the Moon and Mars
Oklahoma	University of Oklahoma	Dr. Victoria Snowden	Oklahoma State University	Dr. Raman Singh	Next Generation Composite Materials for Aerospace and Exploration Systems
Puerto Rico	University of Puerto Rico	Dr. Gerardo Morell	UPRM Research and Development Center	Dr. Miguel Velez-Reyes	Hyperspectral Imaging for Biodiversity Assessment of Coastal and Terrestrial Ecosystems
Puerto Rico	University of Puerto Rico	Dr. Gerardo Morell	University of Puerto Rico	Dr. Raphael Raptis	A Combined Experimental and Theoretical Approach for the Development of Selective Nanoporous Gas Sorbents for the Effective Restoration of Breathing Air in Crewed Space Craft
South Carolina	College of Charleston	Dr. Mitchell Colgan	University of South Carolina	Dr. James Ritter	Development of Rapid Cycle Pressure Swing Adsorption Oxygen Concentrators for Extraterrestrial Applications

State	Lead Institution (Award Recipient)	Principal Investigator	Institution Conducting Research	Science Principal Investigator	Title
South Dakota	South Dakota School of Mines and Technology	Dr. Edward Duke	South Dakota School of Mines and Technology	Dr. Steve Smith	Development of an Advanced Photovoltaic Materials Research Cluster in South Dakota
South Dakota	South Dakota School of Mines and Technology	Dr. Edward Duke	South Dakota School of Mines and Technology	Dr. Haiping Hong	Improved Thermal Management Systems Using Advanced Materials and Fluids
Tennessee	Vanderbilt University	Dr. Alvin Strauss	Vanderbilt University	Dr. M. Douglas LeVan	Development of Rapid Cycle Pressure Swing Adsorption Oxygen Concentrators for Extraterrestrial Applications
Utah	The University of Utah	Dr. Dwayne Westenskow	Utah State University	Dr. Stephen Whitmore	Research on Axially-symmetric Aerospoke Nozzles for In-Space and Planetary Ascent/Descent Thruster Applications
Vermont	University of Vermont	Dr. William Lakin	University of Vermont	Dr. Darren Hitt	Micropropulsion and Control Technologies for On-Orbit NanoSat Positioning
Vermont	University of Vermont	Dr. William Lakin	University of Vermont	Dr. Jane Hill	The Impact of Microgravity-Grown Pseudomonas Aeruginosa and Haemophilus Influenzae on Human Lung Cells: Integration of Virulence, Lung Cell Immune Responses, and the Volatile Metabolome
West Virginia	West Virginia University	Dr. Majid Jaraiedi	West Virginia University	Dr. Wade Huebsch	Aerodynamic Flow Control with Stimulus-Responsive Smart Skins for Tunable Dynamic Roughness