

NASA EPSCoR

Request for Pre-proposals

TIMETABLE:

Issue Date: **January 4, 2011**

Last day for questions and answers about this solicitation: **January 18, 2011**

Notice of Intent to BOR (required) due: **January 21, 2011**

Pre-proposals due: **February 11, 2011**



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 FY2011 NASA EPSCoR Cooperative Agreement Notice (CAN). The FY2011 CAN is available at: <http://nspires.nasaprs.com/external/solicitations/summary.do?method=init&solld={8E5145AE-B624-1BB5-7FA6-E306B6609E66}&path=open> .

Each of twenty-eight 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 FY2010 competition, NASA EPSCoR awarded twenty-four (24) 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 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 competitions in FY2009 and FY2010 are not eligible to serve as leads of a proposal in this competition. (Note: A single individual—the Science Principal Investigator—must be responsible for conducting the investigation. Co-PIs are not allowed. Other investigators are referred to as Co-Investigators/Institutional PIs, if from a collaborating LA institution of higher education.)

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 March 1, 2011 and will be provided feedback from the panel. 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 March 1, 2011 as the recommended proposals are prepared for submission to NASA. Final full proposals (with budgets approved by the PI's office of sponsored programs) will be due at the BOR on March 9, 2011. **If changes to this timetable become necessary, the BOR will notify all proposers.**

I.F. TIMETABLE

January 18, 2011	Last day to answer questions about this solicitation
January 21 2011	Notice of Intent due at BOR (Do NOT send NOI to NASA.)
February 11, 2011	Pre-proposals due
March 1, 2011	Successful proposers notified to develop full proposals
March 9, 2011	Full proposals due at BOR (for the selected projects)
March 11, 2011	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 18, 2011. 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>.

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 21, 2011. 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 24, 2011 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 seventeen (17) pages, consecutively numbered, including text as well as visual materials, which contains the project description elements described in Section VII of the FY2011 CAN, entitled “Proposal Preparation” (page 19).

Proposers should also refer to Section VIII of the FY2011 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. 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. A budget justification must be included. Provide details on personnel, supplies, equipment and travel (destination, days, airfare, per diem, etc.)
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/Commitment/Collaboration** – 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 February 11, 2011. **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: FY2011 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: FY2011 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

(Note: Appendix A is contained only in the pdf version of this RFP.)

NASA EPSCoR Awards: 2007 2008 2009 2010

State	Lead Institution (Award Recipient)	Principal Investigator	Institution Conducting Research	Science Principal Investigator	Title
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
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

State	Lead Institution (Award Recipient)	Principal Investigator	Institution Conducting Research	Science Principal Investigator	Title
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
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

State	Lead Institution (Award Recipient)	Principal Investigator	Institution Conducting Research	Science Principal Investigator	Title
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
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 Miniaie	Study of Part Deformation and Tool Thermal Mass in Curing of Large Composite Structures

State	Lead Institution (Award Recipient)	Principal Investigator	Institution Conducting Research	Science Principal Investigator	Title
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
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)

State	Lead Institution (Award Recipient)	Principal Investigator	Institution Conducting Research	Science Principal Investigator	Title
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
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

State	Lead Institution (Award Recipient)	Principal Investigator	Institution Conducting Research	Science Principal Investigator	Title
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 Aerospike 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
2010					
Alabama	University of Alabama Huntsville	John Gregory Ph.D.	University of South Alabama	Kuang-Ting Hsiao Ph.D.	Development of Prepreg and Out-Of-Autoclave Process for Z-Aligned Carbon Nanofiber Toughened Lightweight Composites
Alaska	University of Alaska Fairbanks	Denise Thorsen Ph.D.	University Of Alaska Fairbanks	Anupma Prakash Ph.D.	Estimating Spatio-Temporal Variability in Evapotranspiration in Interior Alaska Using Field Measurements Modeling and Remote Sensing

State	Lead Institution (Award Recipient)	Principal Investigator	Institution Conducting Research	Science Principal Investigator	Title
Alaska	University of Alaska Fairbanks	Denise Thorsen Ph.D.	University of Alaska Anchorage	Frank Moore Ph.D.	Optimizing Next-Generation Image Compression Transforms via Evolutionary Computation
Hawaii	University of Hawaii Honolulu	Luke Flynn Ph.D.	University of Hawaii Honolulu	Trevor Sorensen Ph.D.	Development of an Open-Architecture Mission Operations System to Support Multiple Small Spacecraft Missions
Idaho	University of Idaho Moscow	Aaron Thomas Ph.D.	Boise State University	Hans-Peter Marshall Ph.D.	Remote Sensing of the Cryosphere: Calibration and Validation
Idaho	University of Idaho Moscow	Aaron Thomas Ph.D.	Boise State University	Julia Oxford Ph.D.	Molecular Mechanisms of Cellular Mechanoreception in Bone
Iowa	University of Northern Iowa	Ramanathan Sugumaran Ph.D.	University of Iowa Iowa City	Athanasios Papanicolaou Ph.D.	Agricultural Soil Erosion and Carbon Cycle Observations in Iowa: Gaps Threaten Climate Mitigating Policies
Kentucky	University of Kentucky Lexington	Suzanne Smith Ph.D.	University Of Kentucky Lexington	James Lumpp Ph.D.	CubeLab Standard for Improved Access to The International Space Station for Science Payloads
Louisiana	Louisiana Board of Regents	John Wefel Ph.D.	Louisiana State University and A&M College	Brent Christner Ph.D.	MARSLIFE: Modes of Adaptation Resistance and Survival for Life Inhabiting a Freeze-dried-radiation-bathed Environment

State	Lead Institution (Award Recipient)	Principal Investigator	Institution Conducting Research	Science Principal Investigator	Title
Maine	Maine Space Grant Consortium	Terry Shehata Ph.D.	Bigelow Laboratory For Ocean Sciences	David Emerson Ph.D.	Learning how to breathe: what can we learn about antiquity biological iron oxidation and respiration on oxygen from modern Fe-oxidizing bacteria
Mississippi	University of Mississippi	Peter Sukanek Ph.D.	Mississippi State University	Dibbon Walters Ph.D.	Development of advanced turbulent flow prediction models for NextGen air transport
Montana	Montana State University Bozeman	Angela Des Jardins Ph.D.	Montana State University Bozeman	Brock LaMeres Ph.D.	Development and Testing of a Radiation Tolerant Flight Computer with Real-Time Fault Detection Recovery and Repair
Nevada	University of Nevada Reno	Christian Fritsen Ph.D.	Desert Research Institute	Hans Moosmuller Ph.D.	Building Research and Educational Capacity for Satellite Remote Sensing of Aerosols and their Radiative and Climate Change Impacts
New Hampshire	University of New Hampshire Durham	David Bartlett Ph.D.	University of New Hampshire Plymouth	James Koerner Ph.D.	Site Assessments in Cold and Alpine Environments for Wind Power Generation
Puerto Rico	University of Puerto Rico San Juan	Gerardo Morell Ph.D.	University of Puerto Rico Mayagüez	Maharaj Tomar Ph.D.	Nanostructured III-N solar cells for space applications
Rhode Island	Brown University	Peter Schultz Ph.D.	University Of Rhode Island	Brett Lucht Ph.D.	Development of Advanced Anodes and Electrolytes for NASA Battery Systems

State	Lead Institution (Award Recipient)	Principal Investigator	Institution Conducting Research	Science Principal Investigator	Title
South Carolina	University of Charleston	Mitchell Colgan Ph.D.	University Of South Carolina Columbia	Tony Reynolds Ph.D.	Fundamental and Applied Studies in Friction Based Consolidation and Extrusion of Finely Divided Metals
South Carolina	University of Charleston	Mitchell Colgan Ph.D.	University Of South Carolina Columbia	Fanglin (Frank) Chen Ph.D.	Development of High Power Density Regenerative Bi-electrode Supported Solid Oxide Cells to Support NASAs Planetary Exploration Missions
South Dakota	South Dakota School of Mines & Technology	Edward Duke Ph.D.	University Of South Dakota	Chaoyang Jiang Ph.D.	Enhanced Raman Detection of Minerals Microbes and Biomarkers through the Development of Advanced Plasmonic Nanomaterials
Tennessee	Vanderbilt University	Dr. Alvin Strauss Ph.D.	The University of Memphis	Jeffrey G. Marchetta Ph.D.	Heating Rate Sensor and Analytic Tools for Prediction of Surface Heat Flux and Temperature of TPS via In-Depth Sensor Data
Tennessee	Vanderbilt University	Alvin Strauss Ph.D.	University of Tennessee Knoxville	J.I. Frankel Ph.D.	Development Characterization and Validation of an Aerogel/RTV Based Cryogenic Propellant Tank
West Virginia	West Virginia University	Majid Jaraiedi Ph.D.	West Virginia University	Amy Keesee Ph.D.	Remote Thermal Ion Measurements and Integrated Magnetospheric Modeling
West Virginia	West Virginia University	Majid Jaraiedi Ph.D.	West Virginia University	John Kuhlman Ph.D.	Spray Heat Transfer Mechanisms

State	Lead Institution (Award Recipient)	Principal Investigator	Institution Conducting Research	Science Principal Investigator	Title
Wyoming	University of Wyoming	Paul Johnson Ph.D.	University Of Wyoming	Wenyong Wang Ph.D.	Nanostructured Photovoltaics for Space Energy Applications
