

Nevada NASA EPSCoR 2009

FUNDING OPPORTUNITY



Nevada NASA EPSCoR
Nevada System of Higher Education (NSHE)
System Sponsored Projects Office
755 E. Flamingo Road
Las Vegas, NV 89119-7363

CLOSING DATE
October 28, 2008

CALL FOR PRE PROPOSALS FOR NASA EPSCoR 2009

To NSHE Researchers,

CALL FOR PRE PROPOSALS FOR NEVADA'S NEXT STATEWIDE NASA EPSCoR 2009 SUBMISSION.

Nevada is eligible to apply for a new three-year award from The National Aeronautics and Space Administration's (NASA) Experimental Program for the Stimulation of Competitive Research (EPSCoR). Although Nevada has recently been successful in obtaining research grants for Astrophysics Research and research on Planetary Surface Processes, Nevada remains eligible to submit new proposals to the anticipated FY 2009 NASA EPSCoR Cooperative Agreement Notice. The new NASA EPSCoR awards are expected to provide funding of approximately \$750,000 to be expended over three years with a required 1:1 state match.

This announcement is intended to describe the general objectives and background of the NASA EPSCoR program, the process to be followed by the Nevada EPSCoR Office and NASA EPSCoR Director in preparing their next proposals, provide general guidance about developing science and engineering focal areas for the proposal(s), and solicit pre-proposals for focal areas.

General Objectives and Background:

The general objectives of the NASA EPSCoR program are to:

- Contribute to and promote the development of research infrastructure in NASA EPSCoR States in areas of strategic importance to the NASA mission; (Space Science, Human Exploration and Development of Space, Aeronautics, and Space Technology, http://www.nasa.gov/pdf/142302main_2006_NASA_Strategic_Plan.pdf)
- Improve the capabilities of the NASA EPSCoR States to gain support directly from NASA
- Contribute to the overall research infrastructure, science, and technology capabilities, higher education, and economical development of the State; and
- Work in close coordination with the NASA Space Grant program to improve the environment for science, mathematics, engineering, and technology education in the State.

Nevada System of Higher Education Areas of Interest Broadly Include:

Education, Human Health, Urban and Rural Sustainability, Climate Change, Water Resources and Policy, Technology, Renewable Energy

Of particular interest to Nevada NASA EPSCoR are

Planetary Geology
Astrophysics
Astrobiology
Aeronautical and Systems Engineering

NASA Research Areas of Interest

NASA EPSCoR research priorities are defined by the Mission Directorates—Aeronautics Research, Exploration Systems, Science, and Space Operations. Each Mission Directorate covers a major area of the Agency’s research and technology development efforts. General information about NASA research priorities and current NASA research solicitations can be found on NSPIRES at <http://nspires.nasaprs.com> (select “Solicitations” and then “Open Solicitations”) and Grants.gov at <http://www.grants.gov/search/agency.doc> (click on “National Aeronautics and Space Administration”).

Research priorities for each of the Mission Directorates are:

Aeronautics Research Mission Directorate (ARMD)

Researchers responding to the ARMD should propose research that is aligned with one or more of the ARMD programs. Researchers are directed to the following:

ARMD Programs

<http://www.aeronautics.nasa.gov/programs.htm>

Research Opportunities in Aeronautics (ROA)

Select “Solicitations” and then “Open Solicitations” on NSPIRES

Exploration Systems Mission Directorate (ESMD)

General priorities of ESMD can be found at <http://www.nasa.gov/directorates/esmd>.

The major divisions of ESMD are the Constellation Systems and Advanced Capabilities Divisions. From the ESMD home page, click on the links for Constellation and Advanced Capabilities to learn more about those divisions’ research needs.

Within the Advanced Capabilities Division, research priorities relevant to the Human Research Program are available at the following URLs:

2007 Ground-Based Studies in Space Radiation NASA Research Announcement

<http://nspires.nasaprs.com> (select “Solicitations” and then “Past Solicitations and Selections”)

OR

<http://www.grants.gov/search/search.do?oppId=11838&flag2006=true&mode=VIEW>

2007 Research and Technology Development to Support Crew Health and Performance in Space Exploration Missions NASA Research Announcement

<http://nspires.nasaprs.com> (select “Solicitations” and then “Open Solicitations”)

OR

<http://www.grants.gov/search/search.do?oppId=14851&flag2006=true&mode=VIEW>

Science Mission Directorate (SMD)

Information on SMD research priorities is available at the following URLs:

NASA Science Plan 2007

<http://science.hq.nasa.gov/strategy/>

Research Opportunities in Space and Earth Science (ROSES)

Select “Solicitations” and then “Open Solicitations” on NSPIRES

Space Operations Mission Directorate (SOMD)

The primary research and technology development areas in SOMD support launch vehicles, space communications, and the International Space Station. Examples of research and technology development areas with great potential include:

- Space Communications and Navigation
 - Coding, Modulation, and Compression (GSFC)
 - Precision Spacecraft and Lunar/Planetary Surface Navigation and Tracking (GSFC)
 - Communication for Space-Based Range (GSFC)
 - Antenna Technology (GRC)
 - Reconfigurable/Reprogrammable Communication Systems (GRC)
 - Miniaturized Digital EVA Radio (JSC)
 - Transformational Communications Technology (GRC)
 - Long Range Optical Telecommunications (JPL)
 - Long Range Space RF Telecommunications (JPL)
 - Surface Networks and Orbit Access Links (GRC)
 - Software for Space Communications Infrastructure Operations (JPL)
 - TDRS transponders for launch vehicle applications that support space communication and launch services

- Space Transportation
 - Optical Tracking and Image Analysis (KSC)
 - Space Transportation Propulsion System and Test Facility Requirements and Instrumentation (SSC)
 - Automated Collection and Transfer of Launch Range Surveillance/Intrusion Data (KSC)
 - Technology tools to assess secondary payload capability with launch vehicles (KSC)

- Processing and Operations
 - Crew Health and Safety Including Medical Operations (JSC)
 - In-helmet Speech Audio Systems and Technologies (GRC)
 - Vehicle Integration and Ground Processing (KSC)
 - Mission Operations (ARC)

Nevada NASA EPSCoR Background and Interests:

The goals of NASA EPSCoR program closely parallel those of the National Science Foundation's EPSCoR and NASA's Space Grant Program. Nevada's NASA EPSCoR programs will continue to enhance technology development and scientific research in areas that support the state's strategic research and technology development priorities and those that support NASA Mission Directorate's interests (as listed above). Nevada's EPSCoR program has strategically sought to promote the development of core expertise and research infrastructure **in areas of Astrophysics, Planetary Geology and Geophysics, Aerospace Engineering and Astrobiology**. In doing so, Nevada has demonstrated successes in fostering research and securing EPSCoR resources in areas of Astrobiology, Astrophysics, and Planetary Geology during the past five years (interested parties can view Nevada's previously funded "Nevada NASA EPSCoR" proposals at <http://www.nevada.edu/epscor/projects.html>)- Although the above

listed areas of research development have been targeted by the Nevada's EPSCoR program, the program also is seeking to promote invigorating and new research and technology development concepts that will aid in the exploration enterprises (that include both human and unmanned exploration systems) that strongly align with NASA's and Nevada's interests and priorities.

Pre-Proposal Development

The process for developing Nevada's next NASA EPSCoR 2009 proposal(s) will continue with the submission of white papers (four page maximum) from across the Nevada System of Higher Education that provides the following:

1. A narrative of the research topic, proposed activities and methods;
2. A description of how the proposed activity aligns with state institutional and NASA missions. An explicit identification of NASA programs that will support the work currently and into the future as well as a list of specific NASA collaborators is required.
3. A list of collaborators and their roles in the project.
4. A description of how the proposed research or technology development activity will benefit the collaborating institutions.

In addition, a cover letter and abstract form (Appendix A) shall be provided that includes a brief description of the research topic (200 words maximum), the planned partnerships among state institutions and NASA Centers, and a statement on how the planned activities will be aligned with NASA's vision and mission. Included in this form is the lead PI's, contact information and e-mail address which will be used for future correspondence.

Outside of the pre-proposal page limits, provide the following:

1. References (literature cited in the four page narrative)
2. Letter(s) of collaboration from the NSHE collaborators briefly stating the scope of work that the investigators will perform- assuming the proposal is fully developed and then granted.
3. Two-page CVs for the lead PI and Co-PIs.
4. A preliminary budget summary and budget justification (see Appendix A for budget and specific costs formats).

Note Research projects will receive an average of \$750,000 in federal funds with State special projects match to be expended over three years. A preliminary budget justification is required for the three-year period using the Specific Costs pages in Appendix A. Large dollar equipment exceeding \$5,000 needs to be identified.

5. List 3-5 external researchers to participate as a merit review member. Please include name, institution and department, mailing address, phone and email.

Collaborations

States are strongly encouraged to submit a proposal that demonstrate partnerships and cooperative arrangements among academia, government agencies, and businesses and industries that are distributed throughout the State. The proposal must involve a group of researchers preferably spanning departments and multiple institutions, lead by a senior PI. At least two of the three NSHE research institutions (*Desert Research Institute; University of Nevada, Las*

Vegas; or University of Nevada, Reno) must be included in the collaboration to qualify as a statewide EPSCoR proposal. The most competitive programs will be those that develop meaningful partnerships from across the state and make specific links to NASA's centers.

Pre proposals and Budgets:

The required format for the pre proposals must be single spaced, and printed no smaller than 12-point font with 1" margins. The budget must be submitted using the Budget Summary form (Appendix A).

The above information is due in electronic form to Nevada's NASA EPSCoR Research Administrator, Michele Dewey, at michele.dewey@nshe.nevada.edu by **October 28, 2008** by 4:30 p.m. The electronic file must be in Word format (proposal) and Excel (budget). Specify NASA EPSCoR 09 Pre Proposal in the subject line.

Project Selection

Submitted pre-proposals will undergo a merit review process to determine the final research development area(s). Successful white paper proposals will be chosen in preparing statewide proposals, under the leadership of the Nevada NASA EPSCoR Director.

A panel will review and recommend project(s) for submission to NASA EPSCoR and make the final selection. Project selections will be based on review of pre-proposals using the following criteria:

1. Intrinsic Merit (35%):

- Proposed Research: Technical quality of the proposed research, merit of stated goals, soundness of the plans to produce demonstrable near-term achievements and to serve as a catalyst to enhance the state's long-term aerospace research capability.
- Existing Research: Merit of proposed research in context of ongoing research and technology development activities within NSHE.

2. Alignment and Partnerships (35%)

- Relevance to the NASA mission as defined in NASA's Strategic Plan and Vision for Space Exploration. The degree to which the proposed research matches NASA Mission Directorate's Research Interests and serves to improve the ability of the state's institutions to become more competitive and involved in NASA's programs.
- Alignment of proposed research activities with NSHE's institutional and departmental capabilities and future aims.
- Plans to effectively reach and engage underrepresented and underserved students and researchers.
- NASA Interactions: The use of NASA content, people, or facilities in the execution of the research activities. Current and/or previous interactions, collaborations, and meetings with NASA researchers, engineers, and scientists in the area of the proposed research.

- The extent and merit of existing and future collaborations between the NSHE researchers and personnel at the Mission Directorates and/or Centers and how these will be fostered.
 - Potential of the plan and proposed activities to contribute to economic development in Nevada (e.g. through innovative approaches, technology transfer and innovative industry partnering).
- 3. Internal Management and Program Evaluation (15%),**
- Research Project management plans for coordination with Nevada EPSCoR Director and Associate Director and oversight of research development activities.
 - Project's Self- Evaluation plans.
- 4. Budget and Justification (15%)**
- The clarity and appropriateness of the budget.

It is encouraged that all authors discuss their pre-proposals with the Nevada's NASA EPSCoR Director (Christian Fritsen, chris.fritsen@dri.edu) and members of the Nevada's Research Affairs Council (RAC).

Post Selection Process:

Once proposal writing teams have been selected they will fully develop their plans in conjunction with the Nevada NASA EPSCoR Director and the NSHE EPSCoR office into proposals that will be submitted in response to the FY 2009 NASA EPSCoR Cooperative Agreement Notice through NASA's NSPIRES system. The due date for this submission is still to be determined.

If a proposal is selected, NASA Headquarters awards the Cooperative Agreements to the State's NASA EPSCoR Director (who also serves as the State's Space Grant Director). Thus, the NASA Space Grant/NASA EPSCoR Director must manage the State's NASA EPSCoR awards by providing leadership and direction for the research teams in an oversight role. Individuals participating in a State's NASA EPSCoR program are strongly encouraged to be affiliated with and participate in the Nevada Space Grant Consortium's programs and activities (see <http://www.nevadaspacegrant.com/>).

Grant Application Forms ****Please use the budget form and specific cost sheet within this solicitation. Do not use budget form on NASA page.**

http://code210.gsfc.nasa.gov/grants/grants.htm#Grant_Forms

Contact Information

Christian Fritsen, PhD

Nevada NASA EPSCoR Program Director
Desert Research Institute
2215 Raggio Pkwy.
Reno, NV 89512
E-mail: chris.fritsen@dri.edu
Phone: 775.673.7487

George Rhee, PhD

Nevada NASA EPSCoR Associate Director
University of Nevada Las Vegas
4505 S. Maryland Parkway, Box 4002
Las Vegas, NV 89154-4002
Email: grhee@physics.unlv.edu
Phone: (702) 895-4453

Michele Dewey

NSHE NASA EPSCoR Research Administrator
Nevada System of Higher Education
755 E. Flamingo Road
Las Vegas, NV 89119
E-mail: michele.dewey@nshe.nevada.edu
Phone: 702.862.5589

Additional Links:

NASA Headquarters: <http://www.hq.nasa.gov>
Ames Research Center: <http://www.arc.nasa.gov/>
Dryden Flight Research Center: <http://www.dfrc.nasa.gov/>
Glenn Research Center: <http://www.grc.nasa.gov/>
Goddard Space Flight Center: <http://www.gsfc.nasa.gov/>
Jet Propulsion Laboratory: <http://www.jpl.nasa.gov/>
Johnson Space Center: <http://www.jsc.nasa.gov>
Kennedy Space Center: <http://www.ksc.nasa.gov/>
Langley Research Center: <http://www.larc.nasa.gov/>
Marshall Space Flight Center: <http://www.msfc.nasa.gov/>
Stennis Space Center: <http://www.ssc.nasa.gov/>

Appendix A

2009 NASA EPSCoR Cover Letter and Abstract Form

Program Title:

Principal Investigator/Institution:

Co-Principal Investigator/Institution:

Mailing Address:

Telephone Number:

E-mail of PI:

Proposed Collaborations (Check all that apply)

- | | |
|--|---|
| <input type="checkbox"/> Ames Research Center | <input type="checkbox"/> Kennedy Space Center |
| <input type="checkbox"/> Dryden Flight Research Center | <input type="checkbox"/> Langley Research Center |
| <input type="checkbox"/> Goddard Space Flight Center | <input type="checkbox"/> Lewis Research Center |
| <input type="checkbox"/> Jet Propulsion Laboratory | <input type="checkbox"/> Marshall Space Flight Center |
| <input type="checkbox"/> Johnson Space Center | <input type="checkbox"/> Stennis Space Center |
| <input type="checkbox"/> Others: (please specify) | |

Mission Directorate Addressed (Check all that apply):

- ARMD
- SMD
- ESMD
- SOMD

Abstract:

TITLE of PROGRAM:

Institution:

FROM:

TO:

PI Name:

DIRECT LABOR (SALARIES, WAGES, AND FRINGE BENEFITS)	NASA Federal	Special Projects Match	Institutional Match
SALARIES			
TOTAL SALARIES	\$ -	\$ -	\$ -
FRINGE BENEFITS			
TOTAL FRINGE BENEFITS	\$ -	\$ -	\$ -
1. TOTAL SALARY AND FRINGE BENEFITS	\$ -	\$ -	\$ -
OTHER DIRECT COSTS:			
A. SUBCONTRACTS			
B. CONSULTANTS			
C. EQUIPMENT			
D. SUPPLIES (List)			
E. TRAVEL			
Domestic			
F. OTHER (List)			
2. TOTAL OTHER DIRECT COSTS	\$ -	\$ -	\$ -
3. TOTAL DIRECT COSTS (1+2)	\$ -	\$ -	\$ -
INDIRECT COSTS			
4. TOTAL INDIRECT COST			
UNR (insert rate)			
UNLV (insert rate)			
DRI (insert rate)			
5. TOTAL ESTIMATED COST	\$ -	\$ -	\$ -
APPROVED BUDGET (NSHE Use Only)	\$ -	\$ -	\$ -

PI/PD Signature

Printed Name

DATE

Institutional Representative Signature

Printed Name

DATE

**Please complete budget on formulated Excel worksheet attached to the solicitation PDF.

SPECIFIC COSTS –**Project Title:** _____**Project Lead:** _____

1. Direct Labor (salaries, wages, and fringe benefits): Attachments should list number and titles of personnel, amounts of time to be devoted to the grant, and rates of pay.

Senior Personnel	Position	Effort	Rate of Pay
Mrs. X	(NSHE) Administration	25%	\$4,167x3mos. = \$30,000 FY09: \$5,000 federal \$5,000 SPM FY10: \$5,000 federal \$5,000 SPM FY11: \$5,000 federal \$5,000 SPM

Other Personnel**Enter other personnel to be paid out of project funding.****Total Personnel: \$30,000 = \$15,000 federal + \$15,000 SPM****Fringe Benefits****NSHE - The current fringe rate is 26% for professional employees**

Mrs. X FY09: \$10,000 x 26% = \$2,600
 FY10: \$10,000 x 26% = \$2,600
 FY11: \$10,000 x 26% = \$2,600

Total Fringe:**1. Total Direct Labor: \$**

2. Other Direct Costs:

a.	<u>Subcontracts:</u> N/A	\$0.00
b.	<u>Consultants:</u> N/A	\$0.00
c.	<u>Equipment:</u> N/A	\$0.00
d.	<u>Supplies:</u>	
e.	<u>Travel:</u>	Total: \$

Destination\Number of Individuals	Cost Estimate
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1. NASA EPSCoR Annual Conference (PD/AD/RA) to include airfare, hotel accommodations and motor pool: From Reno/LV TBD: FY09-10: \$400 ea. 1 trip x 7 pax = \$2,800

f.	<u>Other:</u>	Total: \$
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2. Total Other Direct Costs: \$

3. Indirect Costs:

Indirect is computed for (Institution) at a XX% rate (*.XX) = \$

3. Total Indirect Costs: \$**SUBTOTAL – Estimated Costs: \$****Total Proposed Cost Sharing: \$****Total Estimated Costs: \$**