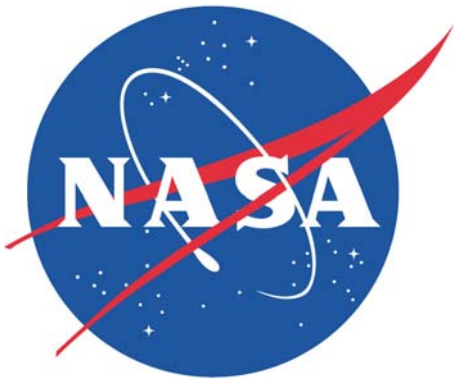
OMB Approval Number 2700-0085



National Aeronautics and Space Administration
Office of Education

FY 2008 NASA Cooperative Agreement Notice (CAN)

Experimental Program to Stimulate Competitive Research (EPSCoR)

Research Announcement

Announcement No. NNH08ZNE001C
Catalog of Federal Domestic Assistance (CFDA) Number: 00.000

Release Date:	**December 17, 2007**
Notice of Intent Due:	**January 29, 2008**
Proposals Due:	**March 14, 2008**

NASA Headquarters
Office of Education
Washington, DC 20546-0001

Summary of Key Information

CAN NNH08ZNE001C
Experimental Program to Stimulate Competitive Research (EPSCoR)

The National Aeronautics and Space Administration (NASA) Office of Education, in cooperation with NASA's four Mission Directorates—Aeronautics Research, Exploration Systems, Science, and Space Operations—and NASA's ten Field Centers, solicits proposals for the NASA Experimental Program to Stimulate Competitive Research (EPSCoR). Each funded NASA EPSCoR proposal is expected to establish research activities that will make significant contributions to the strategic research and technology development priorities of one or more of the Mission Directorates and contribute to the overall research infrastructure, science and technology capabilities, higher education, and economic development of the jurisdiction. Proposals are due on March 14, 2008.

Inquiries
Technical and scientific questions about programs in this Cooperative Agreement Notice (CAN) may be directed to:

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Office of Education
NASA Headquarters
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Washington, DC 20546-0001
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Inquiries regarding the submission of proposal materials may be addressed to:

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NASA Research and Education Support Services (NRESS)
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Washington, DC 20024-2760
aharris@nasaprs.com
Telephone: (202) 479-9030 ext. 310
Fax: (202) 479-0511

Release Date:	**December 17, 2007**
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Solicitation Availability
Go to http://nspires.nasaprs.com and click on Solicitations.

Selecting Official
The selecting official for this CAN is the Assistant Administrator for Education at NASA Headquarters.

Funds Availability
The Government's obligation to make an award is contingent upon the availability of appropriated funds from which payment can be made.

Number and Size of Award
It is anticipated that 7-10 awards of up to $750,000 for a three-year period of performance may be made under this Notice pursuant to the authority of the *NASA Grant and Cooperative Agreement Handbook* (http://ec.msfc.nasa.gov/hq/grcover.htm), Section 1260.12(d).

NASA Safety Policy
Safety is the freedom from those conditions that can cause death, injury, occupational illness, damage to or loss of equipment or property, or damage to the environment. NASA's safety priority is to protect: (1) the public, (2) astronauts and pilots, (3) the NASA workforce (including employees working under NASA award instruments), and (4) high-value equipment and property.

Proposal Submission
All information needed to respond to this solicitation is contained in this CAN and in the companion document entitled *Guidebook for Proposers Responding to a NASA Research Announcement January 2007 Edition* (hereafter referred to as the *NASA Guidebook for Proposers)*. This document is located at http://www.hq.nasa.gov/office/procurement/nraguidebook.

Within the Agency, NASA Research Announcements (NRAs) and CANs are the types of solicitations used to solicit proposals for grants and cooperative agreements. The main difference between a CAN and an NRA is that a CAN is used when the decision has been made in advance that cooperative agreements will be the awarded for a given research opportunity. The procedures and processes to be followed by proposers when responding to CANs and NRAs are the same.

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I. Description of Opportunity

A. Technical Description

NASA's Office of Education, in cooperation with NASA's four Mission Directorates—Aeronautics Research, Exploration Systems, Science, and Space Operations—and NASA's ten Field Centers, solicits proposals for the NASA Experimental Program to Stimulate Competitive Research (EPSCoR). Each funded NASA EPSCoR proposal is expected to establish research activities that will make significant contributions to the strategic research and technology development priorities of one or more of the Mission Directorates and contribute to the overall research infrastructure, science and technology capabilities, higher education, and economic development of the jurisdiction.

The program parameters are:

- Jurisdictions responding to this CAN may submit up to two proposals.
- The maximum funding request per proposal is $750,000. This amount is to be expended over a three-year period.
- All NASA EPSCoR monies must be matched 1:1 with non-federal monies. In-kind matches are allowable.

This CAN is available in electronic form through the NASA Solicitation and Proposal Integrated Review and Evaluation System (NSPIRES) located at http://nspires.nasaprs.com.

B. EPSCoR Background

Public Law 102-58, passed in 1992, authorized NASA to initiate NASA EPSCoR to strengthen the research capability of jurisdictions that have not in the past participated equably in competitive aerospace research activities. The goal of NASA EPSCoR is to provide seed funding that will enable jurisdictions to develop an academic research enterprise directed toward long-term, self-sustaining, nationally-competitive capabilities in aerospace and aerospace-related research. This capability will, in turn, contribute to the jurisdiction's economic viability and expand the nation's base for aerospace research and development. Since its inception, NASA EPSCoR has been closely linked to the National Space Grant College and Fellowship Program (Space Grant).

Based on the availability of funding, NASA will continue to help jurisdictions achieve these goals through NASA EPSCoR. Funded jurisdictions will be selected through a merit-based, peer-reviewed competition.

The following are the specific objectives of NASA EPSCoR:

- 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 Space Grant to improve the environment for science, technology, engineering and mathematics education in the jurisdiction.

C. Definitions

- Directorate – One of NASA's four Mission Directorates—Aeronautics Research, Exploration Systems, Science and Space Operations.
- Field Center - The ten NASA Field Centers including the Jet Propulsion Laboratory (JPL). For purposes of collaboration in NASA EPSCoR, JPL is considered a NASA Field Center.
- Jurisdiction- For the purpose of this CAN, the term jurisdiction refers to the jurisdictions responding to this announcement.
- NASA Research Contact - The NASA Research Contact is the primary NASA point of contact during the proposal writing stage for the proposed research area. If the proposer has contacted and received permission from a NASA scientific or technical person, that individual may be listed in the proposal as the NASA Research Contact. Otherwise the NASA Research Contact is the University Affairs Officer at the Center, or the NASA Mission Directorate contact at NASA Headquarters. (See Appendix B.)
- Research Area - One of the areas of research interest for the NASA Mission Directorate(s).
- Research Group - A group of researchers that undertakes one of the specific research areas proposed.
- Research Student - A student (undergraduate, graduate, or postdoctoral) who receives a research appointment in direct support of the NASA EPSCoR research in the research proposals.
- Principal Investigator (PI) – For this EPSCoR CAN, the Principal Investigator is the jurisdication's EPSCoR director. The Principal Investigator has an appropriate level of authority and is responsible for proper conduct of the research, including appropriate use of funds and administrative requirements such as the submission of the scientific progress reports to the Agency.
    - Co-Investigator (Co-I) – A Co-I is a member of the proposal's investigation team who is a critical "partner" for the conduct of the investigation through the contribution of unique expertise and/or capabilities.
    - Co-I/Science-PI – For this CAN, one Co-I should be designated as the Co-I/Science-PI for those cases where the person leading the scientific direction of the proposed work is not the PI. The formally stated PI will still be held responsible for the overall direction of the effort and use of funds.
    - Co-I/Institutional-I – A Co-I at an organization other than that of the PI institution who is making a major contribution to the proposal and serves as the point of contact at the Co-I's institution, may also be designated as the Co-I/Institutional-PI. For this CAN, the Science-PI may also serve as an Institutional-PI, where appropriate. In these cases, the individual should be identified as the Science-PI in the proposal cover page.
- Technical Monitor - a NASA scientific or technical person designated by the NASA EPSCoR manager to monitor the research project.

D. EPSCoR Eligibility and Proposal Acceptance

Institutions for which the NASA EPSCoR Directors are currently serving are eligible to participate in NASA EPSCoR. The National Science Foundation (NSF) determines overall

jurisdiction eligibility for NASA EPSCoR. Details regarding eligibility are available at http://www.nsf.gov/od/oia/programs/epscor/eligible.jsp.

Proposals for this solicitation will be accepted only from NASA EPSCoR jurisdictions with less than two active NASA EPSCoR research awards.

Jurisdictions responding to this CAN may submit up to two proposals. The number of current NASA EPSCoR Research Awards in a given jurisdiction will be a consideration during the selection process.

E. Period of Performance

NASA EPSCoR awards will support a three-year cooperative agreement. It is anticipated that this period of performance will suffice for the researchers to achieve the performance task objectives stated in the original proposal and/or any amendments submitted with annual progress reports and accepted by the NASA EPSCoR program office. Selected investigations may begin as early as June 15, 2008. This start date assumes funding is available.

F. Connections between the NASA's EPSCoR and National Space Grant College and Fellowship Programs

The goals of NASA EPSCoR closely parallel those of the National Science Foundation's EPSCoR and the Space Grant Capability Enhancement consortia. Cooperative Agreements will be awarded to the institution of the NASA EPSCoR/Space Grant Director. The NASA EPSCoR Director must therefore serve as the Principal Investigator for and manage the jurisdiction's NASA EPSCoR project (see Section IV. Program Management, Paragraph B. Jurisdiction Level for a discussion of management responsibilities). Individuals and individual institutions participating in a jurisdiction's NASA EPSCoR project need not be members of the jurisdiction's Space Grant Consortium.

G. Notice of Intent

Institutions planning to prepare a proposal package for NASA EPSCoR are requested to submit a Notice of Intent (NOI) to propose. The information provided in this notice will be used to assess research interests in NASA EPSCoR and to determine the expertise required of merit reviewers. NOIs must be submitted by the jurisdiction NASA EPSCoR Director through NSPIRES (http://nspires.nasaprs.com) by 11:59 p.m. Eastern Standard Time, January 29, 2008.

The non-binding NOI must include:

1) the planned research title and summary;
2) the name of the submitting (lead Space Grant) institution;
3) the name, title, mail and e-mail addresses, and telephone number of the jurisdiction's NASA EPSCoR Director.

II. Strategic Framework for NASA

A. National and Agency Priorities

On January 4, 2004, the President announced *A Renewed Spirit of Discovery: The President's*

Vision for U.S. Space Exploration, a new directive for the Nation's space program. The fundamental goal of this directive is "to advance U.S. scientific, security, and economic interests through a robust space exploration program." The President committed the Nation to a journey of exploring the solar system and beyond: returning to the Moon in the next decade, then venturing further into the solar system, ultimately sending humans to Mars and beyond. The Agency was challenged to establish new and innovative programs to enhance understanding of the planets, to ask new questions, and to answer questions that are as old as humankind.

The *Vision for Space Exploration* drives NASA's Strategic Goals for the period 2006 through 2016. Proposers responding to a NASA CAN may become familiar with the *2006 NASA Strategic Plan* by accessing http://www.nasa.gov. The *2006 Strategic Plan* establishes the framework to advance NASA's unique competencies in scientific and engineering systems to fulfill the Agency's purpose and achieve the NASA Mission: *To pioneer the future in space exploration, scientific discovery, and aeronautics research.*

Although NASA will assume the lead for our Nation in the implementation of this exploration vision, this will be a joint journey with contributions by other nations, commercial organizations, and thousands of university researchers, private sector scientists, engineers, and entrepreneurs from around the globe, all committed to the same objective.

B. NASA Education Strategy and Framework

As identified in the *2006 NASA Strategic Plan,* education is one of the Agency's cross-cutting management strategies. NASA will continue the Agency's tradition of investing in the Nation's education programs and supporting the country's educators who play a key role in preparing, inspiring, exciting, encouraging, and nurturing the young minds of today that will manage and lead the Nation's laboratories and research centers of tomorrow.

A highly educated and well-prepared workforce has been and continues to be critical to the success of the Agency's mission. NASA's investment in education is directly linked to inspiring the next generation of explorers and innovators.

Beginning in 2006 and beyond, NASA began pursuing three major education goals:

- **Strengthen NASA and the Nation's future workforce**—NASA will identify and develop the critical skills and capabilities needed to ensure achievement of the Vision for Space Exploration. To help meet this demand, NASA will continue contributing to the development of the Nation's science, technology, engineering, and mathematics (STEM) workforce of the future through a diverse portfolio of education initiatives that target America's students at all levels, especially those in traditionally underserved and underrepresented communities.

- **Attract and retain students in STEM disciplines**—NASA will focus on engaging and retaining students in STEM education programs to encourage their pursuit of educational disciplines and careers critical to NASA's future engineering, scientific, and technical missions.

• **Engage Americans in NASA's mission**—NASA will build strategic partnerships and linkages between STEM formal and informal education providers. Through hands-on, interactive educational activities, NASA will engage students, educators, families, the general public, and all Agency stakeholders to increase Americans' science and technology literacy.

The NASA Education portfolio is guided by three Outcomes:

- Outcome 1: Contribute to the development of the STEM workforce in disciplines needed to achieve NASA's strategic goal through a portfolio of investments.
- Outcome 2: Attract and retain students in STEM disciplines through a progression of educational opportunities for students, teachers, and faculty.
- Outcome 3: Build strategic partnerships and linkages between STEM formal and informal education providers that promote STEM literacy and awareness of NASA's mission.

The Education Outcomes form a critical component of the Education Strategic Coordination Framework (see Appendix A). The Framework guides the planning, implementation, and assessment of the NASA Education portfolio. The Framework provides a coordinated tool to describe the Overarching Philosophy and Operating Principles for NASA education. Higher education projects serve as major links in the student pipeline used to address the education outcomes.

Outcome 1 of the NASA Education portfolio includes five objectives. NASA EPSCoR contributes to the accomplishment of two of these objectives:

- Objective 1.1 – Faculty and Research Support: Provide NASA competency-building education and research opportunities for faculty, researchers, and post-doctoral fellows.
- Objective 1.5 – Targeted Institution Research and Academic Infrastructure: Improve the ability of targeted institutions to compete for NASA research and development work.

III. Project Overview and Guidelines

A. General

Each NASA EPSCoR project must perform scientific and/or technical research in areas that support the strategic research and technology development priorities of one or more of NASA's four Mission Directorates. Proposals should emphasize developing a research capability to compete for funds from NASA sources outside of EPSCoR and from other non-NASA sources. The projects should move increasingly towards gaining support from sources outside NASA EPSCoR by aggressively pursuing additional funding opportunities offered by NASA, industry, other federal agencies, and elsewhere.

B. Funding and Cost-Sharing/Matching

The maximum funding that can be requested from NASA by a jurisdiction is $750,000 per research proposal. This amount is to be expended over three years in accordance with the budget details and budget narrative in the approved research proposal.

Cost-sharing/matching is required at a rate of 1:1. Although the method of match is flexible, NASA encourages the EPSCoR jurisdiction committees to consider methods that would add value to the jurisdiction's existing research capabilities. All contributions, including cash or in-kind, shall meet the criteria contained in the *NASA Grant and Cooperative Agreement Handbook*, Section 1260.123.

The following restrictions exist on the use of the federally provided NASA EPSCoR funds:

- Award funds may not be used to fund research carried out by non-U.S. institutions. U.S. research award recipients may, however, directly purchase supplies and/or services from non-U.S. sources that do not constitute research. Subject to export control restrictions, a foreign national may receive remuneration through a NASA award for the conduct of research while employed either full or part time by a U.S. institution (see the *NASA Guidebook for Proposers*, Section 1.6).
- Foreign travel to meetings and conferences in support of the jurisdiction's NASA EPSCoR research project is an acceptable use of NASA EPSCoR funds, with an upper limit each year of $1,500 per jurisdiction proposal (i.e., the maximum amount the jurisdiction can request for foreign travel is $1,500 total per year for each research proposal). Note, domestic travel does not have a limit. Domestic travel should be appropriate and reasonable to conduct the proposed research.
- Federal NASA EPSCoR funds cannot be used to fund Civil Servant travel.
- The construction of facilities is not an allowed activity for this CAN. For further information on allowable costs, refer to the cost principles cited in the *Grant and Cooperative Agreement Handbook*, Section 1260.127.
- NASA EPSCoR funding cannot be used to purchase general purpose equipment, e.g. desktop workstations, office furnishings, reproduction and printing equipment, etc. as a direct charge. Special purpose equipment purchases (i.e. equipment that is used only for research, scientific, and technical activities directly related to the proposed research activities) are allowed and can be reflected as a direct charge.

C. 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)

D. Research Student Support

The use of NASA EPSCoR funds for support of research students is allowable. Use of NASA EPSCoR funds for student support shall be detailed in the Budget Justification and described in the Evaluation Section of the proposal as well (see Section IX. Proposal Evaluation Criteria and Selection Process).

E. Collaborations and Interactions

All institutions of higher education within the jurisdiction must be made aware of the FY 2008 NASA EPSCoR CAN. All proposals must be submitted through the jurisdiction's NASA EPSCoR office. Jurisdictions are strongly encouraged to submit proposals that demonstrate partnerships or cooperative arrangements among academia, government agencies, business and industry, private research foundations, jurisdiction agencies, and local agencies. Partnerships with minority-serving institutions are strongly encouraged. Inclusion of faculty and students from underrepresented/underserved groups is also strongly encouraged.

Services provided by NASA Centers should be identified as NASA responsibilities in the proposals. Proposers should contact in advance NASA installations (See Appendix B for points of contact) from which services will be requested in order to ascertain the availability and anticipated costs of such services. All costs to be incurred by NASA Centers on behalf of NASA EPSCoR for the use of facilities and contracted technical work should be identified in the

research proposal funding request. Civil Service salaries and travel, as well as other in-house research provided by NASA Centers cannot count as part of the cost share. These costs may be identified as "Federal Match" in a separate section of the budget.

Statements of commitment and letters of support are important components of the proposal. NASA does not, however, solicit or evaluate letters of endorsement. Review the *NASA Guidebook for Proposers* for distinctions among statements of commitment, letters of support, and letters of endorsement.

IV. Program Management

A. NASA Headquarters

NASA EPSCoR is administered by the Office of Education at NASA Headquarters. NASA EPSCoR management is closely coordinated with Headquarters program offices and the Field Centers. NASA Headquarters has overall responsibility for policy, programs, oversight and evaluation, and reporting. The primary points of contact at the Centers are listed in Appendix B.

B. Jurisdiction Level

The Space Grant Consortium Director also serves as the jurisdiction's NASA EPSCoR Director. The jurisdiction's NASA EPSCoR director will serve as the managing Principal Investigator on the award, providing leadership and direction for the team from an oversight role. The investigator for the research activity should be listed as the Co-I/Science-PI. If the institution of the Science-PI is different from the submitting institution, awards may be directed to this institution through a subcontract. The submitting and awardee institution will be that of the jurisdiction's NASA EPSCoR director. The director is responsible for insuring the timely reporting by the team of progress and accomplishments of their work. The research proposal can include a reasonable level of funding for management, administrative, and oversight function of the jurisdiction's NASA EPSCoR director. This amount, if required, must be included in the $750,000 cap.

The jurisdiction's NASA EPSCoR director should provide guidance and updates to the Co-Is regarding NASA policy and direction from both an Agency technical perspective and from a NASA EPSCoR programmatic aspect. The director is responsible for maintaining an awareness of NASA research and technology development priorities and jurisdiction research priorities. As the primary point of contact for NASA regarding EPSCoR in the jurisdiction, it is expected that the director maintains connections with the jurisdiction's EPSCoR committee and identifies and develops opportunities for collaboration within the jurisdiction with existing EPSCoR and EPSCoR-like programs from other federal agencies. It is expected that the director will consult with appropriate jurisdiction organizations such as the economic development commission and the jurisdiction's EPSCoR Committee in attending to jurisdiction research priorities. The director is responsible for the overall development and direction of the project and ensuring dissemination of research results.

Jurisdiction directors are expected to closely coordinate their EPSCoR and Space Grant programs. Education and public service activities of benefit to EPSCoR should be coordinated through Space Grant.

C. Annual Progress and Final Reports

An annual report is required each year no later than 60 days prior to the anniversary date of the project start. The report should document project activities over the period of performance of the grant, and overall progress towards project objectives, including (but not limited to):

1. Research accomplishments measured against the proposed goals and objectives
2. Research success of individual investigators as measured by:
    - articles submitted to or published in refereed journals
    - talks, presentations, or abstracts at professional meetings
    - patents and patent applications
    - follow-on grant proposals submitted/funded including funding amounts
    - improvements in jurisdiction research and development infrastructure
3. Systemic change as evidenced by:
    - reordered jurisdiction and/or institutional priorities
    - increased financial commitment from the jurisdiction, industry, and participating institutions
4. Examples of successful technology transfer to the private sector
5. Extent to which collaborations with jurisdiction agencies, industry, research and academic institutions and with NASA have evolved
6. Evidence of how EPSCoR activities have furthered jurisdiction priorities
7. Discussion of interaction between and cooperation with the jurisdiction's Space Grant Consortium
8. Demographic (ethnicity/race and gender through self identification) information on participants
    - faculty – including names and institutions
    - post-doctoral, graduate, and undergraduate students

In addition to these requirements, the annual report should include:

- a schedule of project activities, and
- information on the longitudinal tracking of students funded during the reporting period.

At the end of the third year, an in-depth final report is required that summarizes the three-year progress and accomplishments of the project. Accomplishments toward project goals will be evaluated by reference to indicators such as, but not limited to, the metrics outlined above.

D. Schedule

The schedule for the review and selection of proposals for this announcement is as follows:

Notice of Intent due	January 29, 2008
Proposal due	March 14, 2008

E. Cancellation of Program Announcement

NASA Office of Education reserves the right to make no awards under this Notice and to cancel this Notice. NASA assumes no liability (including bid and proposal costs in case of

cancellation) for canceling the Notice or for anyone's failure to receive actual notice of cancellation.

F. Inquiries

Technical and scientific questions about this CAN may be directed to:
Diane D. DeTroye
Manager, NASA EPSCoR
Office of Education
NASA Headquarters
300 E Street, SW
Washington, DC 20546-0001
Diane.D.DeTroye@nasa.gov
Telephone: (202) 358-1069

Inquiries regarding the submission of proposal materials may be addressed to:
Althia Harris
NASA Research and Education Support Services (NRESS)
500 E Street SW, Suite 200
Washington, DC 20024-2760
aharris@nasaprs.com
Telephone: (202) 479-9030 ext. 310
Fax: (202) 479-0511

V. Proposal Review Information

A. Evaluation Criteria

Evaluation by peers of the proposing personnel will be used to assess each proposal's overall merit. The evaluation criteria are: Intrinsic Merit, NASA Alignment and Partnerships, Management and Evaluation, and Budget Justification: Narrative and Details. For descriptions of these evaluation criteria, see Section IX. Proposal Evaluation Criteria and Selection Process.

B. Review and Selection Processes

Review of proposals submitted to this CAN will be consistent with the general policies and provisions given in the *NASA Guidebook for Proposers*, Appendix C, Sections C.1 through C.4. Evaluation criteria described in Section C.2 of that document is superceded by the evaluation criteria described in this solicitation under Section IX. Proposal Evaluation Criteria and Selection Process. Selection procedures will be consistent with the provisions of the *NASA Guidebook for Proposers*, Section C.5. The selecting official for this CAN is the Assistant Administrator for Education at NASA Headquarters.

C. Selection Announcement

NASA's stated goal is to announce selections as soon as possible. However, NASA does not usually announce new selections until the funds needed for those awards are approved through the Federal budget process. Therefore, a delay in the budget process for NASA usually results in a delay of the selection date(s). After 180 days past the proposal due date for which a proposal was submitted, proposers may contact the NASA EPSCoR Manager.

Those proposers not selected will be notified by postal or electronic mail and offered a debriefing consistent with the policy in the *NASA Guidebook for Proposers*, Section C.6.

VI. Award Administration Information

A. Notice of Award

Notification of both the selected, as well as the non-selected proposals, will be consistent with the policy given in the *NASA Guidebook for Proposers*, Section C.5.3. For selected proposals, the offeror's business office will be contacted by a NASA Awards Officer, who is the only official authorized to obligate the Government. For a grant or cooperative agreement, any costs incurred by the proposer in anticipation of an award will be subject to the policies and regulations of the *Grant and Cooperative Agreement Handbook*, Section B, Part 1260.125(e).

B. Administrative and National Policy Requirements

This solicitation does not invoke any special administrative or national policy requirements, nor do the awards that will be made involve any special terms and conditions that differ from NASA's general terms and conditions as given in the *Grant and Cooperative Agreement Handbook* and *the NASA Guidebook for Proposers*.

C. Award Reporting Requirements

The reporting requirements for awards made through this CAN will be consistent with the *Grant and Cooperative Agreement Handbook*, Exhibit G. Additional reporting requirements are specified above in Section IV. Program Management, Paragraph C, Annual Progress and Final Reports.

VII. Updates and Submission Information

A. Announcement of Updates/Amendments to Solicitation

Additional programmatic information for this CAN may develop before the proposal due date. If so, such information will be added as a formal amendment to this CAN as posted at its homepage on http://nspires.nasaprs.com. It is the responsibility of the prospective proposer to regularly check this CAN's homepage for updates.

Any clarifications or questions and answers that are published will be posted either with the summary CAN information or on the relevant program element(s)'s web page(s) at http://nspires.nasaprs.com.

B. Electronic Submission of Proposal Information

On-time electronic submission via NSPIRES or Grants.gov (located at http://www.grants.gov) is required for every proposal. While every effort is made to ensure the reliability and accessibility of the web sites and to maintain a help center via e-mail and telephone, difficulty may arise at any point on the internet, including the user's own equipment. Prospective proposers are urged to familiarize themselves with the NSPIRES site and to submit the required proposal materials well in advance of the proposal submission deadline. Difficulty in

registering with or using a proposal submission system (either NSPIRES or Grants.gov) is not, in and of itself, a sufficient reason for NASA to consider a proposal that is submitted after the proposal due date (see Appendix C).

C. Proposal Submission Dates, Time, and Location

For this CAN, each proposal must be submitted in its entirety by 11:59 p.m. Eastern Time March 14, 2008.

Proposals that are late will be handled in accordance with NASA's policy as given in the *NASA Guidebook for Proposers*, Appendix B, Section (g) (also see Sections 3.2 and F.23). It is not possible to submit a late proposal electronically via NSPIRES unless the electronic Cover Page was initially created prior to the proposal due date. Late proposals may not be submitted via Grants.gov. Proposals received after the due date may be returned without review. If a late proposal is returned, it is entirely at the discretion of the proposer whether or not to resubmit it in response to a subsequent appropriate solicitation.

VIII. Proposal Preparation

The required elements of the proposal as described below must be submitted as one or more PDF documents that are uploaded for proposal submission.

Proposal Content	Page Guideline
Proposal Cover Pages: The Proposal Cover Pages contain information about the proposal, including the following: ***Proposal Information:*** PI information, proposal title, proposed start and end dates, submitting institution information, certification and authorization ***Team Members:*** Names and contact information ***Project Summary (200-300 words):*** Provide a brief description of the project, objectives, method of approach, and outcomes. ***Budget Figures:*** Include figures for all years of the proposed program in the spaces provided. **Please Note: The length of the proposal cover page will vary from proposal to proposal.** Sample first page of Cover Pages Located in Appendix D of this CAN.	varies
Table of Contents	1-2 pages
Project Description: A detailed description of the proposed research plan. Page limit includes all illustrations, tables, and figures, where each "n-page" fold-out counts as n-pages and each side of a sheet containing text or an illustration counts as a page. See Section IX. Proposal Evaluation Criteria and Selection Process for a detailed description of the evaluation criteria.	maximum 16 pages
References and Citations	as needed
Biographical Sketches: Submit sketches for key personnel using the following guidelines: **PI, Co-I/Science-PI:** maximum 2 pages **Co-I, Co-I/Institutional-PI :** 1 page **Other Key Personnel:** 1 page	as needed
Current and Pending Support	as needed
Statements of Commitment and Letters of Support	as needed
Budget Justification: Narrative and Details: Include a budget breakdown for each year of proposed work, along with total budget figures for the entire period of performance. Note, Section IX. Proposal Evaluation Criteria and Selection Process provides details on budget submission.	as needed

IX. Proposal Evaluation Criteria and Selection Process

Successful research proposals are likely to be those that provide sound contributions to both immediate and long-term scientific and technical needs of NASA as explicitly expressed in current NASA documents and communications. They will also include pragmatic plans for generation of sustained non-EPSCoR support.

A. Evaluation Criteria

Evaluation criteria for EPSCoR are based on NASA's Education Operating Principles as described in Appendix A. All NASA education projects are evaluated according to these principles:

- Relevance
- Content
- Diversity
- Evaluation
- Continuity
- Partnership/Sustainability

Proposals will be evaluated based on the following criteria: Intrinsic Merit, NASA Alignment and Partnerships, Management and Evaluation, and Budget Justification: Narrative and Details.

Intrinsic Merit (35%)

(a) **Proposed Research.** Provide a detailed narrative of the proposed research activity, including the scientific and/or technical merit of the proposed research, unique and innovative methods, approaches, concepts, or advanced technologies, and the potential impact of the proposed research on its field.

(b) **Existing Research.** Provide baseline information about current research activities within the jurisdiction in the proposed research area. Include projects currently funded under NASA EPSCoR, as well as other research and technology development programs within the jurisdiction. If relevant, include a discussion of how previous research projects initiated under NASA EPSCoR have helped prepare the institution for and contributed to the proposed research activities.

NASA Alignment and Partnerships (35%)

(a) **Relevance to NASA and Jurisdiction.** Discuss the value of the proposed research to NASA's research priorities. Also include a discussion of how the proposed research activities align with the jurisdiction's aerospace and science, economic, and technology goals and priorities. Indicate how the jurisdiction's NASA EPSCoR Technical Advisory Committee input was used in selecting the proposed research. Note: each proposal ***must*** contain a section entitled "Relevance to NASA and Jurisdiction". Proposers should provide specific information on how they determined the relevance of the proposed effort to NASA.

(b) **Partnerships/Sustainability.** Proposals should delineate mechanisms for building collaborations with NASA Mission Directorates and/or Centers as well as universities, industry, and/or other government agencies to enhance the ability of the jurisdiction to

achieve its objectives, to obtain and leverage sources of additional funding, and/or to obtain essential services not otherwise available. A plan for achieving national research competitiveness should also be presented.

(c) **NASA Interactions.** The proposal should describe the use of NASA content, people, or facilities in the execution of the research activities. Briefly describe current and/or previous interactions, collaborations, and meetings with NASA researchers, engineers, and scientists in the area of the proposed research, and discuss how future collaborations between the institution's researchers and personnel at the Mission Directorates and/or Centers will be fostered. Indicate the name(s) and title(s) of NASA researchers with whom the proposers will collaborate.

(d) **Diversity.** Proposals should contain plans to effectively reach underrepresented and underserved students and researchers. Jurisdictions are encouraged to seek ongoing opportunities to develop relationships between minority-serving institutions and majority research universities within the jurisdiction, NASA Mission Directorates and Centers, and industry, as appropriate.

Management and Evaluation (15%)

This section should describe the management structure for the proposed research, and coordination with the jurisdiction's NASA EPSCoR project management. The following elements should be included:

(a) **Personnel.** List the personnel participating in this research program, including Principal Investigator and all Co-Investigators, Research Associates, Post-Doctoral Fellows, Students (projected numbers of both graduate and undergraduates), and other research participants.

(b) **Research Project Management.** Describe the management structure of the proposed research project, and the extent to which the project management and team will lead to a well-coordinated, efficiently-managed, and productive effort.

(c) **Multi-Jurisdiction Projects.** If the proposed research is a collaboration between more than one NASA EPSCoR jurisdiction, detail the inter-jurisdiction management structure of the proposed research project. Include a list of the participating jurisdictions, and the participating universities and agencies within each jurisdiction.

(d) **Project Evaluation.** Proposals should document the intended outcomes and offer metrics to demonstrate progress toward and achievements of these outcomes. Discuss metrics to be used for tracking and evaluating project progress. Milestones and timetables for achievement of specific objectives during the award period should be presented. The proposal should describe an appropriate evaluation plan/process to document outcomes and demonstrate progress toward achieving objectives of proposed project elements. Evaluation methodology should be based upon reputable models and techniques appropriate to the content and scale of the project. Projects should implement improvements throughout the entire period of performance based on ongoing evaluation evidence.

Of particular importance to NASA EPSCoR is a reliable method for tracking student progress. If the proposal includes a plan for student support, the proposal should

provide for gathering student performance data both for determining a student's continued eligibility for EPSCoR funding and for evaluating the effectiveness of NASA EPSCoR.

(e) **Tracking of Program Progress.** To the extent reasonable, discuss how the following will be assessed:

- the progress and potential towards achieving self-sufficiency beyond the award period of the research capabilities developed under this grant;
- the potential for the proposed research area to continue to grow in importance in aerospace fields in the future.

(f) **Continuity.** Proposals should describe the role of EPSCoR in connecting to other NASA education projects. It should include methods for effecting the transition of participants to succeeding levels of involvement or facilitating career opportunities. Possible (but not exclusive list) of NASA projects for connectivity are Graduate Student Researchers Program, Space Grant, and University Research Centers. This principle also refers to continuity in research capability. The proposal may contain project efforts directed particularly at involving young researchers in new fields of research that have promise to provide NASA with long-term quality research and development.

Budget Justification: Narrative and Details (15%)

A detailed budget is required for the three years of performance. A suggested format to use in preparing the proposed budget can be found at http://genesis.gsfc.nasa.gov/grants/grants.htm#Grant (click on Grant Budget Outline). All sources of matching should be described and documented. The budget will be evaluated based upon the clarity and reasonableness of the funding request. A budget narrative should be included that discusses other budgetary issues such as the extent and level of jurisdiction, industrial, and institutional commitment and financial support, including resources (staff, facilities, laboratories, indirect support, waiver of indirect costs, etc.)

The proposed budget should be adequate, appropriate, reasonable, and realistic, and demonstrate the effective use of funds in alignment with the proposed project. This section should include detailed budgets for each of the three years of the $750,000 research funding and a summary budget for all three years. The proposed budget should reflect clear alignment with the content and text of the proposal. The budget should contain sufficient cost detail and supporting information to facilitate evaluation.

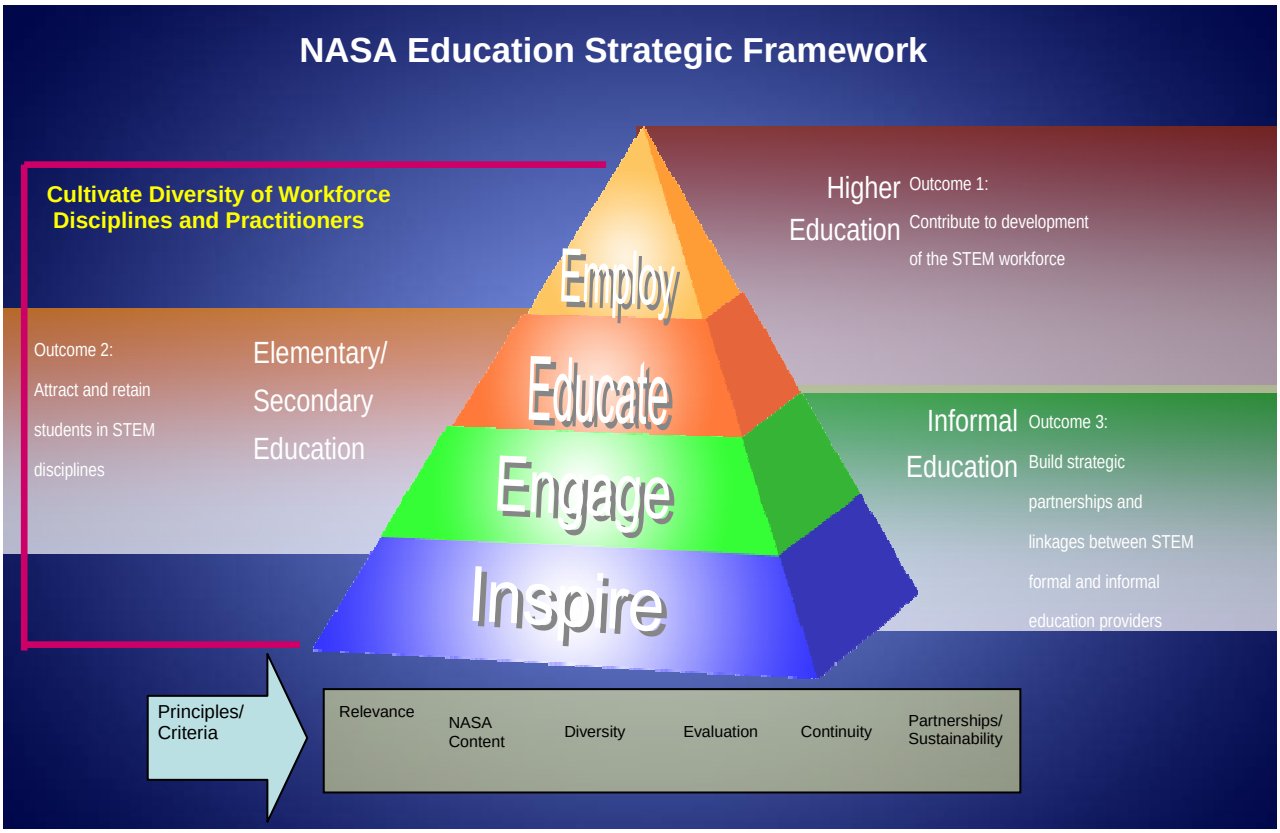
Notes on Budget:

- The annual funding request for each research proposal should reflect a year-to-year distribution of funds that will give the project a strong start, but also sustain it at an effective level for the three-year period.
- There is no cap on the funds for individual sub-task areas. However, the total funds requested for the proposed research must be no greater than $750,000.
- Dollar amounts proposed with no explanation (e.g., Equipment: $12,000, or Labor:

$35,000) may reduce proposal acceptability, or cause delays in funding should the proposal be selected. Each item should be explained in reasonable detail.

- Direct labor costs should be separated by titles or disciplines (e.g., Principal Investigator, graduate research assistant, clerical support, etc.) with estimated hours, hourly rates, and total amounts of each. Indirect costs should be sufficiently explained such that evaluators can understand the basis of the proposed costs.
- Other Costs (with each significant category detailed) should be explained in reasonable detail, and substantiated whenever possible. For example, proposed equipment purchases should specify the type of equipment, number of units, and unit cost.
- Requested domestic travel should include purpose, the number of trips and expected location, duration of each trip, airfare, and per diem. There is no limit placed on domestic travel. Domestic travel should be appropriate and reasonable to conduct the proposed research.
- Foreign travel is allowable up to $1,500 for the entire jurisdiction EPSCoR proposal per year. Requested foreign travel should include justification, purpose, the number of trips and expected location, duration of each trip, airfare, and per diem.

Appendix A: NASA Education Strategic Coordination Framework



All NASA Higher Education projects, including EPSCoR, directly support Outcome 1 of the NASA Education Strategic Framework.

Outcome 1: Contribute to the development of the STEM workforce in disciplines needed to achieve NASA's strategic goal through a portfolio of investment.

EPSCoR contributes to Objectives 1.1 and 1.5 for Outcome 1 and addresses the associated measures of output, outcome, and efficiency:

- **Objective 1.1 – Faculty and Research Support:** Provide NASA competency-building education and research opportunities for faculty, researchers, and post-doctoral fellows.

  Output Measures

  1.1.1 Number and diversity of faculty who participate in NASA competency-building research & STEM education programs

  Outcome Measures

  1.1.2 Ratio of number of research awards to participants in NASA competency-building programs to number of proposals submitted

  1.1.3 Percentage of resumes rated "qualified"

Efficiency Measures

1.1.4 Ratio of participants who successfully obtain NASA research and development grant funding to the number of participants supported

1.1.5 Use a communications network of colleges and universities to inform participants of NASA's direction and needs

- **Objective 1.5 – Targeted Institution Research and Academic Infrastructure:** Improve the ability of targeted institutions to compete for NASA research and development.

Output Measures

1.5.1 Number of students, faculty, & institutions served in designated EPSCoR states

1.5.2 Number of Minority Institutions and underrepresented and underserved students participating

Outcome Measures

1.5.3 Number of new research/technology development partnerships with other organizations

1.5.4 Ratio of number of proposals submitted prior to participation to number submitted after participation

1.5.5 Number of faculty who successfully obtain NASA research and development grant funding

Philosophy and Principles that Guide the NASA Education Portfolio

Overarching Philosophy: Cultivate Diversity

The cultivation of diversity is both a management philosophy and a core value for all NASA education efforts. Diversity of skills and talents needed in our future workforce is critical to our success. Potential at both the individual and organizational levels will be maximized by fostering awareness, understanding, and respect for individual differences. The knowledge, expertise, and unique background and life experiences – including ethnic, gender, racial, religious, and cultural identity – of each individual strengthen the Agency.

Operating Principles

All NASA education projects are evaluated according to the NASA's Office of Education Operating Principles. These principles are integrated into the evaluation criteria identified under Section IX. Proposal Evaluation Criteria and Selection Process.

- ***Relevance:*** The proposed project must be relevant to and align with the jurisdiction's goals and aerospace research, structure, and technology priorities. Proposal must include a discussion of the jurisdiction's economic, science, and technology goals and priorities and demonstrate how the proposed program is relevant to and aligns with these goals and priorities.

- ***Content:*** Technical content of the proposal should help further the attainment of NASA's research and technology development priorities. As necessary, the proposal should describe the use of NASA content, people, or facilities in the execution of the activities.

- ***Diversity:*** NASA strives to ensure that underrepresented and underserved students participate in NASA education and research projects to encourage more of these students to pursue STEM careers. Projects are representative of American demographics; engage underrepresented and underserved minorities, women, and persons with disabilities; and reflect an atmosphere of equity balance, and inclusiveness. Proposals should contain plans to effectively recruit underrepresented and underserved students and researchers, including women, and persons with disabilities. Jurisdictions are encouraged to seek ongoing opportunities to develop relationships between minority-serving institutions and majority research universities within the jurisdiction, NASA Mission Directorates and Centers, and industry, as appropriate.

- ***Evaluation:*** Proposals should document the intended outcomes and use metrics to demonstrate progress toward and achievements of these outcomes and annual performance goals. Evaluation methodology should be based on reputable models and techniques appropriate to the content and scale of the targeted activity, product, or program. Proposals should outline a plan and schedule for pursuing research competitiveness to include metrics, goals, and a specific timeline for achieving the goals.
- ***Continuity:*** Proposals should describe the role of EPSCoR in connecting to other NASA education projects. It should include effective methods for effecting the transition of participants to succeeding levels of involvement by facilitating student success and placement in continued study in STEM fields or STEM careers. Possible (but not exclusive list of) NASA projects for connectivity are Graduate Student Researcher Program, Space Grant, and University Research Centers. This principle also refers to continuity in research capability. The proposal may contain project efforts directed particularly at involving young researchers and new fields of research that have promise to provide NASA with long-term quality research and development.
- ***Partnership/Sustainability:*** Proposals should delineate mechanisms for building collaborations with NASA Centers, universities, industry, and other government agencies that enhance the ability of the jurisdiction to achieve its objectives, to obtain and leverage sources of additional funding, and/or to obtain essential services not otherwise available.

Appendix B: NASA Points of Contact

Additional information regarding NASA EPSCoR can be obtained from the following sources:

Diane D. DeTroye
Manager, NASA EPSCoR
Office of Education, NASA Headquarters
300 E Street, SW
Washington, DC 20024-3210
(202) 358-1069
e-mail: Diane.D.DeTroye@nasa.gov

NASA Mission Directorate and Center Contacts

Technical and scientific questions about research opportunities in this announcement may be directed to the appropriate contact below. Discussions of research with appropriate NASA Center or JPL personnel are strongly encouraged.

NASA Mission Directorate Contacts

Aeronautics Research Mission Directorate Tony Springer Education Liaison NASA Headquarters Phone: (202) 358-0848 Tony.Springer@nasa.gov	Science Mission Directorate Ming-Ying Wei Program Manager NASA Headquarters Phone: (202) 358-0771 ming-ying.wei-1@nasa.gov
Exploration Systems Mission Directorate Jerry Hartman Education Lead NASA Headquarters Phone: (202) 358-1451 Jerry.G.Hartman@nasa.gov	Space Operations Mission Directorate Carla Rosenberg Education Liaison NASA Headquarters Phone: (202) 358-1734 carla.b.rosenberg@nasa.gov

NASA Center Contacts

Ames Research Center Brenda Collins University Affairs Officer Phone: (650) 604-354 Brenda.J.Collins@nasa.gov	Kennedy Space Center Hortense Burt Education Projects Manager Phone: (321) 867-8768 Hortense.B.Burt@nasa.gov
Dryden Flight Research Center Miriam Rodón-Naveira Education Lead Phone: (661) 276-3647 Miriam.M.Rodon@nasa.gov	Langley Research Center Lloyd Evans University Affairs Officer Phone: (757) 864-5209 Lloyd.B.Evans@nasa.gov
Goddard Space Flight Center Vigdor (Vic) Teplitz University Affairs Officer Phone: (301) 286-0345 Vigdor.L.Teplitz@nasa.gov	Glenn Research Center David Kankam University Affairs Officer Phone: (216) 433-6143 Mark.D.Kankam@nasa.gov
Jet Propulsion Laboratory Linda Rodgers University Programs Administrator Phone: (818) 354-3274 linda.rodgers@jpl.nasa.gov	Marshall Space Flight Center Frank Six University Affairs Officer Office of Academic Affairs (HS30) Phone: (256) 961-7701 Norman.F.Six@nasa.gov
Johnson Space Center Robert Musgrove Manager, Higher Education and Student Programs Phone: (281) 483-3065 Robert.P.Musgrove@nasa.gov	Stennis Space Center Nathan Sovik University Affairs Officer Phone: (228) 688-7355 Nathan.A.Sovik@nasa.gov

Appendix C: Proposal and Submission Information

A. Proposal Instructions and Requirements

All information needed to respond to this solicitation is contained in this CAN and in the companion *NASA Guidebook for Proposers January 2007 Edition* located at http://www.hq.nasa.gov/office/procurement/nraguidebook. Proposers are responsible for understanding and complying with its procedures for the successful, timely preparation and submission of their proposals. Proposals that do not conform to its standards may be declared noncompliant and rejected without review.

The introductory material, as well as the appendices, of the *NASA Guidebook for Proposers* provide additional information about the entire CAN process, including NASA policies for the solicitation of proposals, guidelines for writing complete and effective proposals, and NASA's general policies and procedures for the review and selection of proposals and for issuing and managing the awards to the institutions that submitted selected proposals.

B. Content and Form of the Proposal Submission

(i) Electronic Proposal Submission

All proposals submitted in response to this CAN must be submitted in a fully electronic form. No hard copy of the proposal will be accepted. Electronic proposals must be submitted by the authorized organization representative (AOR) at the proposal Principal Investigator's institution. Electronic submission by the AOR serves as the required original signature by an authorized official of the proposing institution.

Proposers may opt to submit proposals in response to this CAN via either of two different electronic proposal submission systems: NSPIRES, located at http://nspires.nasaprs.com (see Section B(iv) below), or Grants.gov located at http://www.grants.gov (see Section B(v) below). Proposers should not submit the same proposal to both electronic submission systems. NASA plans to use the NSPIRES system to facilitate the review process so all proposals received through Grants.Gov will be transferred into NSPIRES.

Note carefully the following requirements for submission of an electronic proposal regardless of the intent to submit via NSPIRES or Grants.gov:

- Every institution that intends to submit a proposal to NASA in response to this CAN must be registered in NSPIRES. This applies whether proposals are submitted via NSPIRES or Grants.gov. Every institution that intends to submit a proposal through Grants.gov must register under that system as well as NSPIRES. Registration for either proposal data system must be performed by an institution's electronic business point-of-contact (EBPOC) in the Central Contractor Registry (CCR).
- Any institution requesting NASA funds through the proposed investigation must be listed on the Proposal Cover Page. NASA will not fund institutions that do not appear on the Proposal Cover Page.
- Each individual team member named on the proposal's electronic cover page must be individually registered in NSPIRES. This applies whether proposals are submitted via NSPIRES or Grants.gov.

- Each individual team member named on the proposal's electronic cover page must specify an institutional affiliation. The institutional affiliation specified must be the institution through which the team member is participating in the proposed investigation. If the individual has multiple affiliations, then this institution may be different from the individual's primary employer or preferred mailing address.

Generically, an electronic proposal consists of one or more electronic forms, including an electronic cover page and one or more attachments. The attachments contain all sections of the proposal, including the project description as well as all required and allowed appendices; see Section B(ii) below for further requirements.

Submission of electronic proposals via either NSPIRES or Grants.gov requires several coordinated actions from the proposing institution. In particular, when the PI has completed entry of the data requested in the required electronic forms and attachment of the allowed PDF attachments, including the project description section, an official at the PI's institution who is authorized to make such a submission, referred to as the authorized organization representative (AOR), must submit the electronic proposal (forms plus attachments). Coordination between the PI and his/her AOR on the final editing and submission of the proposal materials is facilitated through their respective accounts in NSPIRES and/or Grants.gov. Note that if one individual is acting in both the PI and AOR roles, he/she must ensure that all steps in the process are taken, including submitting the proposal from the institution.

(ii) Proposal Format and Contents

All proposals submitted in response to this CAN must include the appropriate required electronic forms available through either of two proposal submission systems, NSPIRES or Grants.gov.

The project description and other required sections of the proposal must be submitted as searchable, unlocked PDF files that are attached to the electronic submission using one of the proposal submission systems. Proposers must comply with any format requirements specified in this CAN and in the *NASA Guidebook for Proposers*, Section 2.3. Only appendices/attachments that are specifically requested in either this CAN or in the *NASA Guidebook for Proposers* will be permitted; proposals containing additional appendices/attachments may be declared noncompliant. The *NASA Guidebook for Proposers*, Section 2, provides detailed discussions of the content of proposals applicable to this CAN. Section VIII. Proposal Preparation of this CAN provides a listing of required content elements.

In the event the information in this CAN is different from or contradicts the information in the *NASA Guidebook for Proposers*, the information in this CAN takes precedence.

Important note on creating PDF files for upload: It is essential that all PDF files generated and submitted meet the NASA requirements below. This will ensure that the submitted files can be transferred into NSPIRES regardless of whether the proposal is submitted via NSPIRES or Grants.gov. At a minimum, it is the responsibility of the proposer to: (1) ensure that all PDF files are unlocked and that edit permission is enabled – this is necessary to allow NSPIRES to concatenate submitted files into a single PDF document; and (2) ensure that all fonts are embedded in the PDF file and that only Type 1 or TrueType fonts are used. In addition, any

proposer who creates files using TeX or LaTeX is required to first create a DVI file and then convert the DVI file to Postscript and then to PDF. See http://nspires.nasaprs.com/tutorials/PDF_Guidelines.pdf for more information on creating PDF documents that are compliant with NSPIRES. PDF files that do not meet the NASA requirements cannot be transferred into the NSPIRES system; such files may be declared noncompliant and not submitted to peer review for evaluation.

(iii) Additional Requirement for Budget Format

In addition to the budget summary information provided in the NSPIRES or Grants.gov Cover Page forms, all proposers are required to include more detailed budgets and budget justifications, including detailed subcontract/subaward budgets, in a format of their own choosing in the *Budget Justification*. For this CAN, this additional budget must be divided into two parts, the "*Budget Justification: Narrative*" and the "*Budget Justification: Details*," both as described in the *NASA Guidebook for Proposers,* Section 2.3.10.

The *Budget Justification: Narrative* includes the *Table of Proposed Work Effort* and the description of facilities and equipment, as well as the rationale and basis of estimate for all components of cost including procurements, travel (destination, purpose and number of travelers), publication costs, and all subawards/subcontracts. The *Table of Proposed Work Effort* must include the names and/or titles of all personnel (including postdoctoral fellows and graduate students (where known)) necessary to perform the proposed investigation regardless of whether these individuals require funding from the current proposal. The number of person-months each person is expected to devote to the project must be given for each year. The *Budget Justification: Details* must include the detailed proposed budget including all of the Other Direct Costs and Other Applicable Costs specified in the *NASA Guidebook for Proposers*.

Note that failure to provide sufficient budget justification and data in the *Budget Justification: Narrative* (including the *Table of Proposed Work Effort*) and the *Budget Justification: Details* will prevent the peer review from appropriately evaluating the cost realism of the proposed effort. A finding by the peer review of "insufficient information to properly evaluate cost realism" will be considered a weakness of the proposal. Inconsistent information between these budget descriptions and the proposal text will also be considered a weakness of the proposal.

(iv) Submission of Proposals via NSPIRES, the NASA Proposal Data System

In order to submit a proposal via NSPIRES, this CAN requires that the proposer register key data concerning the intended submission with NSPIRES; NSPIRES is accessed at http://nspires.nasaprs.com. Potential applicants are urged to access this site well in advance of the proposal due date(s) of interest to familiarize themselves with its structure and enter the requested identifier information.

It is especially important to note that every individual named on the proposal's electronic *Cover Page* form (see below) as a proposing team member in any role, including Co-Investigators and collaborators, must be registered in NSPIRES and that such individuals must perform this registration themselves; no one may register a second party, even the Principal Investigator of a proposal in which that person is committed to participate. This data site is secure and all information entered is strictly for NASA's use only.

All proposals submitted via NSPIRES in response to this CAN must include a required electronic *Cover Page* form that is accessed at http://nspires.nasaprs.com. This form is comprised of several distinct sections: a *Cover Page* that contains the identifier information for the proposing institution and personnel; a *Proposal Summary* that provides an overview of the proposed investigation that is suitable for release through a publicly accessible archive should the proposal be selected; and a *Budget Summary* of the proposed research effort. Unless specified in the program description itself, no other forms are required for proposal submission via NSPIRES. See the *NASA Guidebook for Proposers*, Sections 2 and 3, for further details.

The required elements of the proposal, including the project description, must be submitted as one or more PDF documents that are attached to the *Cover Page* using the tools in NSPIRES. It is possible that the complete proposal is submitted as a single, searchable, unlocked PDF document, that contains the complete proposal, including the project description section and budget justification, assembled in the order provided in the *NASA Guidebook for Proposers*, Section 2.3, and uploaded using the tools in NSPIRES. One advantage of submitting the proposal as one PDF document as described above is that it is easier for the proposer to create a table of contents that will be correct. If separate files are uploaded, there may be slight differences in page numbering due to the concatenation process. Any mismatch with the table of contents caused by this process does not impact the evaluation of the proposal.

NSPIRES will provide a list of all elements that make up an electronic proposal, and the system will conduct an element check to identify any item(s) that is (are) apparently missing or incomplete. The element check may produce warnings and/or identify errors. Uploading the proposal in one PDF file is likely to create warnings as part of the element check. These warnings should be ignored as warnings do not preclude proposal submission. Note, however, an error in the element check will preclude submission.

Proposers are encouraged to begin their submission process early. Tutorials and other NSPIRES help topics may be accessed through the NSPIRES online help site at http://nspires.nasaprs.com/external/help.do. For any questions that cannot be resolved with the available on-line help menus, requests for assistance may be directed by e-mail to nspires-help@nasaprs.com or by telephone to (202) 479-9376, Monday through Friday, 8:00 a.m. – 6:00 p.m. Eastern Time.

(v) Submission of Proposals via Grants.gov

In furtherance of the President's Management Agenda, NASA offers proposers the option to utilize Grants.gov to prepare and submit proposals in response to this CAN. Grants.gov allows institutions to electronically find and apply for competitive grant opportunities from all Federal grant-making agencies; it provides a single access point for over 1000 grant programs offered by the 26 Federal grant-making agencies. The U.S. Department of Health and Human Services is the managing partner for Grants.gov.

In order to submit a proposal via Grants.gov, Grants.gov requires that the Principal Investigator download an application package from Grants.gov. Identifying the appropriate application package requires the funding opportunity number for that program; the funding opportunity

number may be found in the *Summary of Key Information* subsection that concludes each program description. Proposals submitted via Grants.gov must be submitted by the AOR. Submitting a proposal via Grants.gov requires the following steps:

- Follow Grants.gov instructions provided at the website to download any software tools or applications required to submit to Grants.gov.
- Download the application package from Grants.gov at http://www.grants.gov. Download the application package from Grants.gov by selecting "Download grant application packages" under "Apply for Grants" at http://www.grants.gov.
- Complete the required Grants.gov forms including the SF424 (R&R) Application for Federal Assistance, R&R Other Project Information, R&R Senior/Key Person Profile, and R&R Budget. Every named individual must be identified with the institution through which they are participating in the proposal, regardless of their place of permanent employment or preferred mailing address.
- Complete the required NASA specific forms: NASA Other Project Information, NASA Principal Investigator and Authorized Representative Supplemental Data Sheet, NASA Senior/Key Person Supplemental Data Sheet (this form is only required if there are Senior/Key Persons other than the Principal Investigator).
- Complete any NASA program-specific forms that may be required for the specific program element. Program-specific forms may be found by clicking on the hyperlink in the NASA Other Project Information form or by directly accessing http://nspires.nasaprs.com/Grants.gov . Directions for accessing and submitting program-specific forms, if there are any, are provided in the NASA Other Project Information form.
- Create a proposal in PDF including the project description and all other required proposal sections (see the *NASA Guidebook for Proposers*, Section 2). Upload sections as separate PDFs as prompted by Grants.gov.
- Submit the proposal via the authorized organization representative (AOR); the proposal Principal Investigator may not submit the application to Grants.gov unless he/she is an AOR.
- Grant researchers do NOT need to register with Grants.gov. However, every individual named in the proposal as a proposing team member in any role, including PI, Co-Investigators and collaborators, must be registered in NSPIRES (http://nspires.nasaprs.com) and that such individuals must perform this registration themselves; no one may register a second party, even the PI of a proposal in which that person is committed to participate. This data site is secure and all information entered is strictly for NASA's use only.

Potential applicants are urged to access Grants.gov site well in advance of the proposal due date(s) of interest to familiarize themselves with its structure and download the appropriate application packages and tools.

Additional instructions for formatting and submitting proposals via Grants.gov may be found in the *NASA Guidebook for Proposers*, Sections 2 and 3. Instructions for the use of Grants.gov may be found in the *Grants.gov User Guide* at http://www.grants.gov/CustomerSupport.

Instructions for NASA-specific forms and NASA program-specific forms may be found in the application package and at http://nspires.nasaprs.com/Grants.gov. These NASA program-specific forms are required, and failure to properly include them may result in the proposal being deemed nonresponsive. For any questions that cannot be resolved with the available on-line help menus and documentation, requests for assistance may be directed by e-mail to support@grants.gov or by telephone to (800) 518-4726.

C. Notice of Intent to Propose

A brief Notice of Intent (NOI) to propose is encouraged, but not required, for the submission of proposals to this solicitation. The information contained in an NOI is used to help expedite the proposal review activities and, therefore, is of considerable value to both NASA and the proposer. To be of maximum value, NOIs should be submitted by the proposal Principal Investigator through NSPIRES. Note that NOIs may be submitted within NSPIRES directly by the proposal Principal Investigator; no action by an organization's AOR is required to submit an NOI.

Grants.gov does not provide NOI capability; therefore, NOIs must be submitted via NSPIRES regardless of whether the proposal will be submitted via NSPIRES or Grants.gov. Interested proposers must register with NSPIRES before it can be accessed for use; see Section B(i) above. Since NOIs submitted after the deadline may still be useful to NASA, late NOIs may be submitted by e-mail as directed in the *NASA Guidebook for Proposers*, Section 3.1.

D. Proposal Funding Restrictions

In addition to the funding restrictions and requirements given in the *NASA Guidebook for Proposers* and the *Grant and Cooperative Agreement Handbook*, the following restrictions are applicable to this CAN:

- The estimated funding and number of proposals anticipated to be funded, as shown in this CAN under the section entitled Summary of Key Information, are subject to the availability of appropriated funds, as well as the submission of a sufficient number of proposals of adequate merit.
- The construction of facilities is not an allowed activity for any of the programs solicited in this CAN. For further information on the allowability of costs, refer to the cost principles cited in the *Grant and Cooperative Agreement Handbook*, Section 1260.127.
- Travel, including foreign travel, is allowed as may be necessary for the meaningful completion of the proposed investigation, as well as for publicizing its results at appropriate professional meetings. Foreign travel has an upper limit of $1,500 per jurisdiction proposal per year. Domestic travel does not have a cap.
- U.S. research award recipients may directly purchase supplies and/or services from non-U.S. sources that do not constitute research, but award funds may not be used to fund research carried out by non-U.S. institutions. However, subject to export control restrictions, a foreign national may receive remuneration through a NASA award for the conduct of research while employed either full or part time by a U.S. institution (see the *NASA Guidebook for Proposers*, Section 1.6).

E. Conflict of Interest Check Information

NASA expects all peer reviewers to disclose all conflicts of interest, as well as situations which may be actual conflicts of interest or which may give the appearance of a conflict of interest. Peer reviewers are also expected to disclose situations which may give the appearance of bias, or may cause a reasonable observer to question the ability of the reviewer to provide an unbiased evaluation of a proposal (see the *NASA Guidebook for Proposers*, Appendix E.3).

Appendix D: Sample Proposal Cover Page

This is the first page of the multi-page cover produced by NSPIRES.

Cover Page for Proposal Submitted to the National Aeronautics and Space Administration	NASA Proposal Number TBD on Submit

NASA PROCEDURE FOR HANDLING PROPOSALS

This proposal shall be used and disclosed for evaluation purposes only, and a copy of this Government notice shall be applied to any reproduction or abstract thereof. Any authorized restrictive notices that the submitter places on this proposal shall also be strictly complied with. Disclosure of this proposal for any reason outside the Government evaluation purposes shall be made only to the extent authorized by the Government.

SECTION I - Proposal Information

Principal Investigator	E-mail Address	Phone Number
Svetlana Payne	spayne@nasaprs.com	202-479-9030 x 246

Street Address (1)	Street Address (2)
500 E St SW	Suite 200

City	State / Province	Postal Code	Country Code
Washington	DC	20024-2760	US

Proposal Title : **Test for NSPIRES Alpha Test Environment.**

Proposed Start Date	Proposed End Date	Total Budget	Year 1 Budget	Year 2 Budget	Year 3 Budget	Year 4 Budget	Year 5 Budget
		0.00					

SECTION II - Application Information

NASA Program Announcement Number	NASA Program Announcement Title
NNH05ZDA001N-LCLUC	Land Cover/Land Use Change

For Consideration By NASA Organization *(the soliciting organization, or the organization to which an unsolicited proposal is submitted)*

NASA , Headquarters , Science Mission Directorate , Earth Sun System

Date Submitted	Submission Method	Grants.gov Application Identifier	Applicant Proposal Identifier
	Electronic Submission Only		

Type of Application	Predecessor Award Number	Other Federal Agencies to Which Proposal Has Been Submitted
New		

International Participation	Type of International Participation
No	

EXAMPLE ONLY

SECTION III - Submitting Organization Information

DUNS Number	CAGE Code	Employer Identification Number (EIN or TIN)	Organization Type

Organization Name (Legal Name)	Company Division

Organization DBA Name	Division Number

Street Address (1)	Street Address (2)

City	State / Province	Postal Code	Country Code

PLEASE SUBMIT THROUGH NSPIRES

SECTION IV - Proposal Point of Contact Information

Name	Email Address	Phone Number
Svetlana Payne	spayne@nasaprs.com	202-479-9030 x 246

SECTION V - Certification and Authorization

Certification of Compliance with Applicable Executive Orders and U.S. Code

By submitting the proposal identified in the Cover Sheet/Proposal Summary in response to this Research Announcement, the Authorizing Official of the proposing organization (or the individual proposer if there is no proposing organization) as identified below:

- certifies that the statements made in this proposal are true and complete to the best of his/her knowledge;
- agrees to accept the obligations to comply with NASA award terms and conditions if an award is made as a result of this proposal; and
- confirms compliance with all provisions, rules, and stipulations set forth in the two Certifications and one Assurance contained in this NRA (namely, (i) the Assurance of Compliance with the NASA Regulations Pursuant to Nondiscrimination in Federally Assisted Programs, and (ii) Certifications, Disclosures, and Assurances Regarding Lobbying and Debarment and Suspension.

Willful provision of false information in this proposal and/or its supporting documents, or in reports required under an ensuing award, is a criminal offense (U.S. Code, Title 18, Section 1001).

Authorized Organizational Representative (AOR) Name	AOR E-mail Address	Phone Number

AOR Signature *(Must have AOR's original signature. Do not sign "for" AOR.)* **Date**

FORM NRESS-300 Version 2.0 Apr-06-05

Appendix E: Useful Web Sites

- NASA
  http://www.nasa.gov

- 2006 NASA Strategic Plan
  http://www.nasa.gov/pdf/142302main_2006_NASA_Strategic_Plan.pdf

- NASA Education Strategic Coordination Framework
  http://education.nasa.gov/about/strategy

- Vision for Space Exploration
  http://www.nasa.gov/missions/solarsystem/explore_main.html

- NASA Grant and Cooperative Agreement Handbook
  http://ec.msfc.nasa.gov/hq/grcover.htm

- Guidebook for Proposers Responding to a NASA Research Announcement
  http://www.hq.nasa.gov/office/procurement/nraguidebook

- NASA Solicitation and Proposal Integrated Review and Evaluation System (NSPIRES)
  http://nspires.nasaprs.com

- Grants.gov
  www.grants.gov

- Grant Budget Outline
  http://genesis.gsfc.nasa.gov/grants/grants.htm#Grant