

# 2008 NASA EPSCoR Research Announcement

## Guidelines to NASA Research Interests

Proposers are strongly encouraged to carefully review the Vision for Space Exploration, 2006 NASA Strategic Plan ( [http://www.nasa.gov/pdf/142302main\\_2006\\_NASA\\_Strategic\\_Plan.pdf](http://www.nasa.gov/pdf/142302main_2006_NASA_Strategic_Plan.pdf)), and NASA Education Strategic Coordination Framework (<http://education.nasa.gov/about/strategy/>) to gain an understanding of what is driving NASA's research and technology priorities.

Research opportunities are provided by the Mission Directorates (Aeronautics Research, Science, Exploration Systems, and Space Operations), NASA Centers, and the Jet Propulsion Laboratory. Each Mission Directorate covers a major area of the Agency's research and development efforts. NASA critical research opportunities can be viewed at <http://nasaresearchers.nasaprs.com> (click on Research Opportunities in the menu bar)

Additional information regarding research priorities can be found by reviewing the current research solicitations from NASA on <http://nspires.nasaprs.com/external/> and <http://www.grants.gov/search/agency.do> (then click on "National Aeronautics and Space Administration"). This site will include information on research needs through the Research Opportunities.

### 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)