

## **GRANT APPLICATION**

### **New Mexico Space Grant Consortium (NMSGC) Research Initiation Grant (RIG)**

The New Mexico Space Grant Consortium (NMSGC) Research Initiation Grant (RIG) is designed to provide seed funding to faculty who are conducting research that aligns with NASA Mission Directorates and NASA Field Centers. The purpose of this program is to provide funding to develop competitive research and technology projects and programs for the solution of scientific and technical problems of importance to NASA. As is true with all NMSGC programs, the participation by minorities, women, and persons with disabilities is strongly encouraged. Open year-round. US citizenship is required for faculty and students directly funded by this award.

**Submit application:** [kcoogler@nmsu.edu](mailto:kcoogler@nmsu.edu)

**Mail original application with signatures to:**

New Mexico Space Grant Consortium  
3050 Knox Street  
MSC SG, Box 30001  
Las Cruces, NM 88003-0001

More information about NASA Mission Directorates can be found at <https://goo.gl/XVYS45>

## **Researchers and Project Requirements:**

- This is a one-time competitive award to full-time New Mexico faculty
- Funds are provided by NASA. Awards are contingent on funding from NASA, and are awarded depending on availability of funds.
- Award is used for research aligning with work at NASA Field Centers and Mission Directorates. Your project must help you develop a research area that can lead to additional funding preferably from NASA. See NASA Mission Directorates information on pages 13 to 14 of this announcement.
- US citizenship is required for faculty and students directly funded by this award
- Obtain a Letter of Support from a NASA researcher at any of the field centers or Mission Directorates. If you need help getting the Letter of Support, please see page 16 of this announcement for contacts at each of the field centers or e-mail [poemig@ad.nmsu.edu](mailto:poemig@ad.nmsu.edu) for guidance.
- Project funding is for one year.

## **Application Preparation**

### **Project Overview and Guidelines**

#### **General**

Each Research Initiation Grant project must align with NASA's Research Areas of Interest.

#### **A. RESEARCH INITIATION GRANT GOALS AND OBJECTIVES**

The goal of the Research Initiation Grant program is to develop an academic research program directed toward long-term, self-sustaining, nationally-competitive capabilities in aerospace and aerospace-related research directly supporting NASA's Research Areas of Interest. Go to pages 13 to 14 for details on NASA's Mission Directorates. This capability will, in turn, contribute to New Mexico's economic viability and expand the nation's base for aerospace research and development.

The objectives of the program are:

- Create collaborative projects with NASA Field Centers and/or Mission Directorates. Projects must have the potential for follow-on funding from NASA. Indicate where follow-up funding will come from, from existing programs or upcoming agency announcements. Perform scientific research and/or technology development in areas that support NASA's Research Areas of Interest.
- Focus on projects that can contribute to building future research and innovative activities in New Mexico.
- Move progressively toward gaining support from sources outside the Research Initiation Grant (RIG) program by aggressively pursuing additional funding opportunities offered by NASA, industry, other federal agencies, and other sources.

#### **B. ELIGIBILITY**

All faculty at universities, colleges, and community colleges who are members of the New Mexico Space Grant Consortium are eligible to apply. The following list comprises all current NMSGC higher education member institutions:

- Dona Ana Community College
- New Mexico State University
- New Mexico State University- Grants
- New Mexico State University- Alamogordo
- University of New Mexico
- Santa Fe Community College
- San Juan College
- Southwestern Indian Polytechnic Institute
- Navajo Technical College
- New Mexico Institute of Mining and Technology
- New Mexico Highlands University
- Northern New Mexico University
- Eastern New Mexico University
- Western New Mexico University

#### C. AWARDS AMOUNT AND PERIOD OF PERFORMANCE

Awards will be made for up to \$25,000. Period of performance is 1 year. No extensions or renewals will be considered. Projects are eligible for one time funding only. Faculty must start spending funds within 4 months of start date of sub-contract. A sub-contract will not be issued until a month before the start of the sub-contract.

#### D. NASA COLLABORATION AND LETTER OF SUPPORT

**All researchers requesting Research Initiation Grant funding must submit a Letter of Support from a NASA Field Center or Mission Directorate with their application submission.** The Letter of Support should briefly describe whether the collaborator believes your project specifically can advance the work of NASA. Ask your collaborator to indicate this in one or two sentences, and how she or he will assist and interact with you. The Letter of Support must be on NASA letterhead, and should contain the name of your project, the name, title and signature from your NASA collaborator. The letter should state how the proposed research program is a priority for NASA and how the Field Center and/or Mission Directorate will interact with and support the proposed research program.

Researchers who need help finding a NASA collaborator are encouraged to contact the relevant person on Page 16. If you need further assistance, please call the Space Grant office for at (575) 646-6414.

**E. ASSESSMENT OF APPLICATIONS**

Applications will be selected in a competition for scientific, technical, and management merit. Researchers must provide sufficient information to allow reviewers to make an informed judgment. Failure to supply the appropriate information will lead to lower scores and possible non-funding of the project. Applications will be evaluated using the following criteria:

Review Criteria	Possible Points
1) The degree to which the proposed research can contribute to the overall research infrastructure, science and/or technical capability, of NASA and New Mexico.	10
2) The degree to which the research is competitive and builds core strength needed by NASA for the solution of scientific and technical problems as defined by one or more of NASA’s Mission Directorates or ten Field Centers.	30
3) Scientific and technical merit of the proposed project.	20
4) Probability the project will support researcher’s ability to develop follow-on funding for proposed research.	25
6) Probability the project will result in published research.	5
7) Competency of the project personnel to carry out the research plan and achieve their stated goals.	5
8) Overall utility and relevance to goals and objectives of the Research Initiation Grant	5
Total	100

**F. FINAL SELECTION**

After the recommendations from reviewers, the NMSGC Director will make the final decision on funding applications.

**G. BUDGET**

1. Allowable Expenses:

- Salaries: Faculty release time and summer support, support for undergraduate and graduate students, and hourly wages for staff and student employees is allowed. All students who receive support must be U.S. citizens.
- Travel: Must include name of person who is traveling, purpose for travel, destination, per diem, and how the travel supports your research goal. State and Federal government travel regulations apply to all travel. All travel supported by the project must be in the continental U.S.
- Supplies and materials: Include a description of how these funds will be used. If research supplies or software will be purchased, list items, describe the need for the item and how it supports the program research goals.
- Up to \$5,000 for equipment is allowed.

2. Non-allowable expenses:

- Foreign travel is not allowed.
- Civil service personnel travel is not allowed.
- Indirect Costs (IDC) or F & A (Financial and Administration) costs can be used to meet the matching funds requirement. They may not be billed as direct costs to this grant.

### 3. Cost Sharing and Matching Funds:

**Institutions must provide 100% non-federal matching funds for this program.** All matching funds related to salaries, F&A waiver will run through a cost share account, your campus research office will do this automatically. Although the method of match is flexible, for instance industry or community partner cost-sharing is acceptable; NASA encourages researchers to consider methods that add value to New Mexico's existing research capabilities.

In-kind cost share is allowed. In-kind cost share is non-cash cost share. There are several ways researchers can find in-kind cost share:

- a. Since NASA does not allow F&A (Financial and Administration) to be applied to this work, all F&A which would normally be applied to an application is eligible to serve as cost share.
- b. Faculty salary can be used as cost share, either release time during the academic year or summer salary can be used as an in-kind cost share. No cash will change hands.
- c. Researchers needing help identifying sources of cost share are encouraged to contact the
- d. Space Grant office at 575-646-6414 or your campus research office.

## H. SPECIFIC GRANT APPLICATION REQUIREMENTS AND FORMAT

(5 single space pages or 10 double-spaced pages- Appendix Forms not included in page count)

1) Cover Page - Please use the Cover Page Form in the Appendix

2) Project Summary - Use Project Summary Form in the Appendix

The project summary (also called abstract) must be 250 words or less. It should concisely describe the proposed project, giving the objectives, key features, and proposed outcomes, and provide a timetable for project implementation. Write in general terms, understandable by a non-expert in the field.

Reviewers cannot be expert in all sub-fields. Avoid technical "jargon" as much as possible and write at a level for the average scientist/engineer.

### 3) Project Narrative

The project narrative must be limited to five (5) single-spaced or ten (10) double-spaced pages. Typical subsections of the narrative should include in the order listed, the following:

#### 3-a) Introduction

Indicate the technical or scientific problem to be addressed. Discuss the degree to which the application builds core strength needed by NASA for the solution of scientific and technical problems as defined by one or more of NASA's Mission Directorates or ten Field Centers.

#### 3-b) Objectives of the Project

Scientific, technical objectives and human resources development objectives should be concisely delineated.

#### 3-c) Alignment with NASA Priorities and Letter of Support

In order to align with NASA priorities, faculty researchers must include a Letter of Support from a collaborator at a NASA Field Center, the Aeronautics Research Mission Directorate, Science Mission Directorate, Science and Technology Mission Directorate or Human, Exploration and Operations Mission Directorate. The letter should state how the proposed research program is a priority for NASA and how the Field Center and/or Mission Directorate will interact with and support the proposed research program. The letter must be attached to the application. See section D for all requirements.

Comment on plans or prospects for submitting a follow-up application to NASA, other federal agencies, or non-public sources. Indicate where follow-up funding will come from, from which existing programs or upcoming agency announcements.

#### 3-d) Key Personnel

Attach a one page Vitae for each Principal Investigator. Do not submit publications lists. (These vitae are not included in page totals listed above.)

### 4) Budget and Budget Explanations

Provide the project budget on the Budget Form in the Appendix. No F & A (Financial or Administration), equipment, or food is allowed to be charged to NMSGC funds. (Unrecovered F & A may be included as an institutional contribution; you will be required to document the institutional contributions in your financial reports.) Budget explanations, provided on a separate page, should be succinct but provide sufficient information for a reviewer to judge the need for and importance of the items requested.

### 5) Reporting Requirements

You will be required to submit annual reports. NASA will provide us those reporting guidelines and we will submit them to you within 60 days of report being due to NASA. You will be asked to report on students who were involved in the project, any publications or papers presented supported by the project and collaborations with NASA Centers.

GRANT APPLICATION  
NEW MEXICO SPACE GRANT CONSORTIUM  
RESEARCH INITIATION GRANT (RIG)  
(Duplicate as needed)

Form 1: Cover Page

Form 2: Project Summary

Form 3: Budget

NEW MEXICO SPACE GRANT CONSORTIUM  
RESEARCH INITIATION GRANT (RIG)

COVER PAGE

1. Title of Proposed Project: \_\_\_\_\_

2. Principal Investigator(s): (Name) (Highest Degree Earned)

\_\_\_\_\_

(Department) \_\_\_\_\_

3. Institution of Higher Education: \_\_\_\_\_

4. PI Address:

\_\_\_\_\_

(Street Address/P.O. Box Number)

\_\_\_\_\_

(City, State) (Zip Code)

5. Telephone: \_\_\_\_\_ Email: \_\_\_\_\_

6. Total Funds Requested: \$ \_\_\_\_\_

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## *Certification of Compliance*

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

By submitting the application identified in the Cover Sheet/Application Summary either in response to a NASA Research Announcement or as an Unsolicited Application, the Authorizing Official of the proposing institution (or the individual proposer if there is no proposing institution) as identified below:

- Certifies that the statements made in this application 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 application; and
- Confirms compliance with all provisions, rules and stipulations set forth by these Certifications namely, but not limited to:
  - i. Certifications, Disclosures, and Assurances Regarding Lobbying, Debarment & Suspension.
  - ii. Assurance of Compliance – China Funding Restriction
  - iii. Representation by prospective recipient that they are not the Association of Community Organizations for Reform Now (ACORN) or a subsidiary of ACORN
  - iv. Certification of Compliance with the NASA Regulations Pursuant to Nondiscrimination in Federally Assisted Programs

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

8. Signature PI: \_\_\_\_\_

9. Signature of Dean: \_\_\_\_\_

10. Signature of Fiscal Agent/Research Center: \_\_\_\_\_  
(This is your Research Center or Shared Services Center at your university.)

NEW MEXICO SPACE GRANT CONSORTIUM

RESEARCH INITIATION GRANT (RIG)

PROJECT SUMMARY

NAME OF INSTITUTION (INCLUDE BRANCH/CAMPUS AND SCHOOL OR DIVISION)

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ADDRESS (INCLUDE DEPARTMENT)

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PRINCIPAL INVESTIGATOR(S)

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TITLE OF PROJECT

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ABSTRACT (DO NOT EXCEED 250 WORDS)

NEW MEXICO SPACE GRANT CONSORTIUM  
RESEARCH INITIATION GRANT (RIG)  
BUDGET

Title of Proposed Research: \_\_\_\_\_

Principal Investigator(s): \_\_\_\_\_

Institution(s): \_\_\_\_\_

PROPOSED BUDGET		
	NMSGC Funds	Institutional Contribution
A. Salaries:		
1. Research	\$	\$
2. Clerical	\$	\$
3. Subtotal	\$	\$
4. Fringe Benefits (      %)	\$	\$
5. Graduate Assistants	\$	\$
6. Undergraduate Students		
7. Student(s) hourly	\$	\$
8. Subtotal - Salaries	\$	\$
B. Supportive Expenses:		
1. Travel	\$	\$
2. Supplies	\$	\$
3. Other Expenses (identify)		
A.	\$	\$
B.	\$	\$
4. Subtotal of Expenses	\$	\$
C. Indirect Costs (F&A)	XXXXXXXXXXXXXXXXXX	\$
D. Total Project Costs	\$	\$

**Note: No indirect costs (F&A), equipment, food, foreign travel, or civil service personnel are allowed charged.**

Please attach budget justification.

## **New Mexico Space Grant Consortium (NMSGC) Frequently Asked Questions (FAQ)**

### **Can non-US Citizens, students or faculty, receive funding under this award?**

No.

Note: Green card holders are not citizens. They are on the path to citizenship, but not there yet for the purposes of our program.

### **How do I find a NASA person to write a letter for support?**

All researchers requesting research funding must submit a letter of support from a NASA Field Center or Mission Directorate with their application submission. This letter must state how the proposed research program is a research priority for NASA and how the Field Center or Mission Directorate will interact with and support the proposed research project.

### **How do I find matching funds?**

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1. Since NASA does not allow F&A (Financial and Administration) to be applied to this work, all F&A which would normally be applied to an application is eligible to serve as cost share.
2. Faculty salary can be used as cost share, either release time during the academic year or summer salary can be used as an in-kind cost share. No cash will change hands.
3. Researchers needing help identifying sources of cost share are encouraged to contact the Space Grant at 575-646-6414 or your campus research office.

### **Where do I submit the application?**

Submit your application: Email to [kcoogler@nmsu.edu](mailto:kcoogler@nmsu.edu)

Mail original application with signatures to:

New Mexico Space Grant Consortium  
3050 Knox Street  
MSC SG, Box 30001  
Las Cruces, NM 88003-000

### **What is the link to the most current NASA Guidebook for Proposers?**

All proposers must follow the NASA Guidebook for Proposers at:  
<https://www.hq.nasa.gov/office/procurement/nraguidebook/proposer2017.pdf>

## **Goals and Objectives**

### **NASA Research Areas of Interest**

NASA research priorities are defined by the Mission Directorates (Aeronautics Research, Human Exploration & Operations, Science, and Space Technology) and NASA's ten centers. Each Mission Directorate and Center covers a major area of the Agency's research and technology development efforts.

Research priorities for each of the Mission Directorates (includes Centers) is summarized below and can be found at the following locations:

### **Aeronautics Research Mission Directorate (ARMD)**

Thanks to advancements in aeronautics developed by NASA, today's aviation industry is better equipped than ever to safely and efficiently transport all those passengers to their destinations. In fact, every U.S. aircraft flying today and every U.S. air traffic control tower uses NASA-developed technology in some way.

Streamlined aircraft bodies, quieter jet engines, techniques for preventing icing, drag-reducing winglets, lightweight composite structures, software tools to improve the flow of tens of thousands of aircraft through the sky, and so much more are an everyday part of flying thanks to NASA research that traces its origins back to the earliest days of aviation. We are committed to transforming aviation by dramatically reducing its environmental impact, improving efficiency while maintaining safety in more crowded skies, and paving the way to revolutionary aircraft shapes and propulsion. Inside cockpits, cabins and jet engines; atop traffic control towers; and from departure gate to arrival terminal at airports everywhere, the DNA of the entire aviation industry is infused with technology that has its roots in NASA research. NASA is with you when you fly. Additional information on the Aeronautics Research Mission Directorate (ARMD) can be found at: <https://www.nasa.gov/aeroresearch>

### **Human Exploration & Operations Mission Directorate (HEOMD)**

The Human Exploration and Operations (HEO) Mission Directorate provides the Agency with leadership and management of NASA space operations related to human exploration in and beyond low-Earth orbit. HEO also oversees low-level requirements development, policy, and programmatic oversight. The International Space Station, currently orbiting the Earth with a crew of six, represents the NASA exploration activities in Low-Earth orbit.

Exploration activities beyond low Earth orbit include the management of Commercial Space Transportation, Exploration Systems Development, Human Space Flight Capabilities, Advanced Exploration Systems, and Space Life Sciences Research & Applications.

The directorate is similarly responsible for Agency leadership and management of NASA space operations related to Launch Services, Space Transportation, and Space Communications in support of both human and robotic exploration programs.

Additional information on the Human Exploration & Operations Mission Directorate (HEOMD) can be found at: <https://www.nasa.gov/directorates/heo/index.html>

### **Science Mission Directorate (SMD)**

SMD leads the Agency in four areas of research: Earth Science, Heliophysics, Planetary Science, and Astrophysics. SMD, using the vantage point of space to achieve with the science community and our partners a deep scientific understanding of our planet, other planets and solar system bodies, the interplanetary environment, the Sun and its effects on the solar system, and the universe beyond.

Science is interconnected; no important question stands alone. The Science Mission Directorate (SMD) is an organization where discoveries in one scientific discipline have a direct route to other areas of study. This flow is something extremely valuable and is rare in the scientific world. Additional information on the Science Mission Directorate (SMD) can be found at:

<https://science.nasa.gov/about-us>

### **Space Technology Mission Directorate (STMD)**

STMD rapidly develops, demonstrates, and infuses revolutionary, high-payoff technologies through transparent, collaborative partnerships, expanding the boundaries of the aerospace enterprise. STMD employs a merit-based competition model with a portfolio approach, spanning a range of discipline areas and technology readiness levels. By investing in bold, broadly applicable, disruptive technology that industry cannot tackle today, STMD seeks to mature the technology required for NASA's future missions in science and exploration while proving the capabilities and lowering the cost for other government agencies and commercial space activities.

Research and technology development take place within NASA Centers, in academia and industry, and leverage partnerships with other government agencies and international partners. STMD engages and inspires thousands of technologists and innovators creating a community of our best and brightest working on the nation's toughest challenges.

By pushing the boundaries of technology and innovation, STMD allows NASA and our nation to remain at the cutting edge. After all, technology drives exploration. STMD:

- Advances broadly applicable, transformational technology to infuse solutions into applications for which there are multiple customers
- Competitively selects research by academia, industry, and the NASA Centers based on technical merit
- Leverages the technology investments of our international, other government agency, academic and industrial partners
- Coordinates with internal and external stakeholders, including academia, industry and other government agencies
- Results in new inventions, new capabilities and the creation of a pipeline of innovators aimed at serving future national needs
- Grows the nation's innovation economy and creates high-tech jobs

Additional information on the Space Technology Mission Directorate (STMD) can be found at:

<https://www.nasa.gov/directorates/spacetech/home/index.html>

## **View NASA Research Opportunities**

Supporting research in science and technology is an important part of NASA's overall mission. NASA solicits this research through the release of various research announcements in a wide range of science and technology disciplines. NASA uses a peer review process to evaluate and select research applications submitted in response to these research announcements. Researchers can help NASA achieve national research objectives by submitting research applications and conducting awarded research. This site facilitates the search for NASA research opportunities. In order to submit applications, users must register and login to NSPIRES, and be affiliated with institutions that are registered with NSPIRES.

<https://nspires.nasaprs.com>

\*Note: Everyone who proposes directly must open an NSPIRES account with NASA. It can be done from this website.

## **Solicitations**

Search for and view open, closed, past, and future NASA research announcements. The full text of the solicitation announcements can be viewed and downloaded.

**NASA Center Contact Information**

<p>Ames Research Center  Danielle N. Carmichael  [WYLE LABS] STEM Accountability  Assistant  Phone: (650) 604-6423  danielle.n.carmichael@nasa.gov</p>	<p>Kennedy Space Center  Benita DeSuza  NASA Internships, Fellowships and  Scholarships (NIFS) Lead  Phone: (321) 867-3671  benita.w.desuza@nasa.gov</p>
<p>Armstrong Flight Research Center  Oscar Murillo  MIRO Project Manager  Phone: (661) 276-6110  oscar.j.murillo@nasa.gov</p>	<p>Langley Research Center  Gamaliel (Dan) Cherry  University Affairs Officer  Phone: (757) 864-6113  gamaliel.r.cherry@nasa.gov</p>
<p>Goddard Space Flight Center  Mablelene Burrell  Education Specialist  Phone: (301) 286-1122  mablelene.s.burrell@nasa.gov</p>	<p>Glenn Research Center  Mark David Kankam, Ph.D.  University Affairs Officer  Dir. of NASA Space &amp; Aeronautics Academy at  Glenn  Phone: (216) 433-6143  mark.d.kankam@nasa.gov</p>
<p>Jet Propulsion Laboratory  Linda Rodgers  University Programs Administrator  Phone: (818) 354-3274  linda.l.rodgers@jpl.nasa.gov</p>	<p>Marshall Space Flight Center  Norman (Frank) Six  University Affairs Officer  Office of Academic Affairs (HS30)  Phone: (256) 961-0678  norman.f.six@nasa.gov</p>
<p>Johnson Space Center  Kamlesh Lulla  Director, University Research  Collaborations and Partnership Office  Phone: (281) 483-3065  kamlesh.p.lulla@nasa.gov</p>	<p>Stennis Space Center  Nathan Sovik  University Affairs Officer  Phone: (228) 688-7355  nathan.a.sovik@nasa.gov</p>