Indiana Space Grant Consortium Research and Outreach Project Funding

1. Background

NASA initiated the National Space Grant College and Fellowship Program in 1989. The Space Grant national network includes over 850 affiliates from universities, colleges, industry, museums, science centers, and state and local agencies. These affiliates belong to consortia in all 50 states, the District of Columbia and the Commonwealth of Puerto Rico. These institutions are working to expand opportunities for Americans to learn about and participate in NASA's aeronautics and space projects by supporting and enhancing science and engineering education, research and public outreach efforts. The consortia fund scholarships and fellowships for students pursuing careers in science, mathematics, engineering and technology (STEM), as well as curriculum enhancement, research, and faculty development. Member colleges and universities also administer pre-college and public service education projects in their states.

The Indiana Space Grant Consortium (INSGC) was created in 1991 under the Space Grant Program. Following on the Space Grant goals, the INSGC mission statement is “INSGC facilitates and funds education and research, builds a diverse and inclusive STEM workforce, and promotes NASA to the public”. Our awards programs are designed to implement that motto and the INSGC Vision: “INSGC aspires to bring NASA’s mission and resources to your life, education and work in Indiana”. Additional information about INSGC can be found at www.insgc.org.

2. Use of Space Grant Funds

Funding Restrictions: The following restrictions govern the use of the federally-provided and the cost-shared portion of funds and are applicable to this Cooperative Agreement. Proposers shall use NASA funds for support of undergraduate students, graduate students, post-doctoral fellows and their research; for support of faculty and researchers to conduct research, engage in professional development, and redesign, enhance, or develop curriculum; for research-related equipment, travel, and materials; for support of K-12 activities; and to support project management, administration, and evaluation. For additional budget guidelines, see the *NASA Guidebook for Proposers Responding to a NASA Funding Announcement (revised March 2018)* (https://www.hq.nasa.gov/office/procurement/nraguidebook/proposer2018.pdf).

Awards to U.S. Citizens: Students and faculty receiving direct support (salary or travel) must be U.S. citizens. This restriction does not apply to the use of matching funds.

Cost Share Requirements: INSGC is contractually obligated to meet minimum cost-share levels. Non-federal cost-share requirements remain the same as in prior years. Funds for internships, fellowships, and direct student support may not require cost-share. All other projects will require 1:1 non-federal funds as cost-share, with Outreach projects requiring 1.5:1 match. Additional cost-share is always highly encouraged, and all applicable non-federal cost-share sources should be reported in the INSGC reporting mechanisms. Please contact us if you have any questions.

Facilities and Administrative Costs (F&A): The National Space Grant College and Fellowship Program grant does not cover facilities and administrative costs. Unrecovered facilities and administrative costs may be used as cost-share.

Foreign Travel: International travel is not allowable with Space Grant funds.

Student Research Funding, Internships, Travel Fellowships, STEM Education Major Funding and Fellowship Funds: These awards are considered stipends and are paid directly to the recipient. It is INSGC policy that internship, research and fellowship funds cannot be used for non-educational fees, graduate student tuition remission, or past due accounts. Fellowship and Internship awards are divided into payments over the course of the award year.

Longitudinal Tracking: INSGC is required to complete a longitudinal tracking process on its awardees. This information will be used to assess the impact of the INSGC program. Information collected for longitudinal tracking includes degree awarded, year, INSGC funds received and current activity (employed—industry, NASA, or Academic; still in school; etc.)

Reporting Obligations: NASA has explicit requirements for all programs funded by INSGC to submit several reports as a condition for continued funding and good standing of the Consortium. Thus, the INSGC Central Office requires accurate and timely reporting by awardees. Reporting templates are available on the INSGC website (www.INSGC.org). These reports are a federal contractual obligation. Due dates can change annually and will be announced as soon as possible.

Community Colleges: Community College Associates (those community colleges that have run at least one INSGC-funded program in partnership with an INSGC affiliate) may apply independently for funding. Community colleges with no prior grants from INSGC may apply in partnership with an INSGC affiliate. Please contact the INSGC office for more information.

3. Proposal Information

3.1 Focus Areas, Goals, and Objectives

All proposals are required to align with a specified NASA Office of STEM Engagement Goal/Objective, and to a NASA Mission Directorate. NASA's STEM engagement function will play a critical role in achieving the Agency's Strategic Objective 3.3 by implementing activities within three **focus areas**:

1) Create unique opportunities for students to contribute to NASA's work in exploration and discovery;

2) Build a diverse future STEM workforce by engaging students in authentic learning experiences with NASA's people, content and facilities; and

3) Strengthen understanding by enabling powerful connections to NASA's mission and work.

The **goals and objectives** for NASA STEM Engagement are:

Goal 1.0: Enabling contributions to NASA's work

Objective 1.1: Students contribute to NASA's endeavors in exploration and discovery.

Objective 1.2: Research and development capacity of educational institutions is enhanced, enabling broad and diverse contributions that directly address NASA priorities.

Goal 2.0: Building a Diverse, Skilled Future STEM Workforce

Objective 2.1: A broad and diverse set of students are attracted to STEM through NASA opportunities.

Objective 2.2: Students, including those from underrepresented and underserved communities, explore and pursue STEM pathways through authentic learning experiences and research opportunities with NASA's people and work.

Objective 2.3: The portfolio of NASA STEM engagement opportunities meets agency workforce requirements and serves the nation's aerospace and relevant STEM needs.

Objective 2.4: Strategic partnerships with industry, academia, non-profit organizations and educational institutions enhance and extend the impact of NASA's efforts in STEM engagement.

Goal 3.0: Strengthen Understanding of STEM through Powerful Connections to NASA

Objective 3.1: Youth are introduced to STEM concepts and content through readily available NASA STEM engagement resources and content.

Objective 3.2: Students gain exposure to STEM careers through direct and virtual experiences with NASA's people and work.

Proposals are required to address one or more research priorities of the Mission Directorates and Centers. The current NASA Mission Directorates are as follows:

- Aeronautics Research (http://www.aeronautics.nasa.gov/)
- Human Exploration Operations (http://www.nasa.gov/directorates/heo/home/index.html)
- Science (http://science.nasa.gov/)
- Space Technology (http://www.nasa.gov/directorates/spacetech/home/index.html)

3.2 Funding maximums

Project funding amounts are as follows:

- Multi-institutional/Multi-disciplinary Projects: $20,000 maximum award
- All Other Projects: $15,000 maximum award

If funding above the maximums listed is sought, additional discussion and explanation would be required. Funding requests for smaller projects are perfectly acceptable, but requests for under $1000 must have special justification regarding why a separate, distinct project is justified.

3.3 Awards including Student Research Funding

Changes in the NASA Office of STEM Engagement priorities has led to an emphasis on research experience as a replacement for the former scholarship option for undergraduate and graduate students within INSGC. The faculty member (PI) who is supervising the research activity will apply for the award for the number of students planning to participate in the project. Students will also be able to apply directly to INSGC for research opportunities, and every effort will be made to match them to an opportunity. All student research projects must demonstrate alignment with a NASA Center and/or Mission Directorate and must demonstrate hands-on research experiences and mentoring. Student researchers will sign a commitment detailing the number of hours and work to be performed, and will be required to register in the INSGC online system. Students will be paid a reasonable hourly wage (between $15.00 - $20.00 per hour) through the National Space Grant Foundation, via invoices submitted to INSGC by the project PI's business office. Students will also receive a $150.00 bonus for successfully completing a full semester commitment. All other funds will be included on an established subcontract award and will be invoiced to INSGC by the project PI's business office and paid through Purdue University. **Only one proposal is required for each project, but the proposal must include two separate budgets/budget narratives - one for student pay/bonus and one for all other expenses.**

PIs and Affiliate Directors will need to clearly identify processes for selecting students to participate in research projects. Diversity and inclusion are one of NASA's STEM Engagement Priorities. A statement detailing how diversity and inclusion are being demonstrated in the recruitment of students working on the project will be required, as well as a description of efforts toward retention.

3.4 General Submission Requirements

The application process for INSGC is conducted electronically through the National Space Grant application site linked through the INSGC website. Failure to submit all required information may result in the application being rejected. Items to be included in the pdf file:

- Proposal Narrative: Limited to 4 pages, double-spaced, size 12 font preferred, 10-font minimum. Please include the following sections:

- *PI contact information* (all student projects must identify a faculty or staff advisor/mentor who will serve as the responsible PI for the project)
- *INSGC Affiliate*
- *NASA STEM Engagement Goal and Mission Directorate alignment*
- Your *vision* for the project
- Your *goals* (specific, measurable, attainable, relevant, time sensitive) for the project
- What are your *objectives*? How are you going to reach your goals and what measures will be evaluated to indicate success? Include brief information on resources/environment and PI qualifications
- Diversity and inclusion are one of NASA's STEM Engagement Priorities. Project proposals must *describe their strategies and goals for enhancing and supporting diversity and inclusion* for team members and related engagement activities
- *Budget(s)* (**See Appendix C**) with budget narrative(s)
- Project Evaluation: Please construct a one page Logic Model to describe the overall picture of your project and the intended outcomes. Please see **Appendix A** for instructions and **Appendix B** for the template. This logic model is included in the page limit.

4. Review Process

All proposals will undergo a two level review process. The first level of review will evaluate the merit of the proposal and its potential impact on STEM education, outreach, and/or workforce development in Indiana. Experts will be selected to review proposals from the members of the NASA and National Space Grant community. The second level of review is an internal examination by INSGC to ensure appropriate program, discipline, and demographic balance. Awards are based on proposal success in both levels of review.

4.1. Level 1 Review

Merit reviewers will score proposals from 0-100. The criteria include reasonableness of the proposed project and how responsive the proposal is to the needs of NASA. Points are assigned based on the following criteria:

(0-20) Is the approach:

- Appropriately and adequately described, including supporting evidence?
- Clearly written, well-conceived, and organized?
- Likely to yield the desired results?
- Interdisciplinary?

(0-20) Does the proposal clearly demonstrate how recruitment and student participation efforts are increasing STEM diversity and inclusion at that affiliate

(0-20) Integration of Research and Education:

- Does this project contain elements that enhance the integration of research and education for participating students?
- Do team projects provide opportunities for students to learn important project management and collaboration skills?

(0-10) Does the level of project innovation:

- Explore creative and original concepts?
- Provide a new approach to an existing problem? (0-10) Does the environment for the project:
- Provide sufficient resources to meet the project needs?
- Offer unique features that could contribute to the project's success?
- Provide institutional support?

(0-10) What is the cost effectiveness of the project, and is the budget sufficient to meet the needs of the project?

(0-10) Qualifications of the applicant(s)

- How well qualified is the applicant(s) in terms of the project proposed?
- For team projects: are the roles of the team members well defined?

4.2. Level 2 Review

Level 2 reviews address adherence to INSGC goals, and consider the broader impacts of the project (as defined by the NSF):

- How well does the activity advance discovery and understanding while promoting teaching, training and learning?
- How well does the proposed activity broaden the participation of underrepresented groups (e.g., gender, ethnicity, disability, geographic, etc.)?

- To what extent will it enhance the infrastructure for research and education, such as facilities, instrumentation, networks and partnerships?
- Will the results be disseminated broadly to enhance scientific and technological understanding?
- What may be the benefits of the proposed activity to society?

5. Award Notification and Timelines

All applications should be received by the due date to ensure full consideration. Announcement of awards will be made as soon as possible. Funding of successful proposals will be contingent on INSGC receipt of funding from NASA. Please note that timelines are dictated by the NASA Office of Education, and may vary year-to-year. Every effort will be made to make timely awards and accommodate start dates. Please contact the INSGC office with specific questions.

6. Contact Information

Please direct all questions to: Indiana Space Grant Consortium 765-494-5873
insgc@purdue.edu

Appendix A - Logic Model and Narrative Requirement

It helps to start with a picture of how your project is going to work. The logic model provides a roadmap of the program, highlighting how it is expected to work, what activities need to come before others and how desired outcomes are achieved.

Why go through this?
Program design benefits- stay more focused on outcomes and link activities to desired outcomes.
It is a base from which to conduct an evaluation of the program; it spells out how the program produces desired outcomes. It enables measurement of each set of events in the model to see what happens, what works, what doesn't and for whom. A logic model helps to discover where the model breaks down or is failing to perform as conceptualized.
The logic model requires clarifying the underlying rationale for the project and the conditions under which success is most likely to be achieved.
In order for INSGC to report back to NASA how funds where spent, INSGC needs a clear picture of how your program meets the objectives of INSGC and NASA and how successful your project was. A logic model provides a picture of how you will do this.
The proposal will include the following:

- Your vision for the project.
- Your goals for the project and which one of INSGC's and/or NASA's goals this meets.
- What are your "SMART" (specific, measurable, attainable, relevant, time-sensitive) objectives? How are you going to reach your goal?
- How will you report back to INSGC on the outcome of your project, including assessment?
- Include a logic model of your project in your proposal:

Goal	Inputs	Activities	Outputs	Outcomes	Outcome measures
Which INSGC or NASA goal does your project meet? Ex: NASA objective 1.2 Student Support	What do you need to do this project? (list everything needed) Ex: Interns, instructors, supplies	What activities will be done? Ex: data collection, analyze data, submit for publication	What is the quantitative impact? Ex: # of students funded; # of articles submitted for publication	What will be accomplished? Ex: An increase in students' confidence in research process	How will you measure outcomes/ if goal was met? Ex: survey students about experience of doing research

Appendix B - Logic Model Template

Project Name

Goal	Inputs	Activities	Outputs	Outcomes	Outcome Measures

Appendix C - Budget Template

Indiana Space Grant Consortium (INSGC) Grant Program BUDGET SUMMARY

Principal Investigator: _____

Project Title: _____

Please provide the total amount for each category on the line provided.

	INSGC	TOTAL COST SHARE
Personnel		0
Fringe Benefits		0
Supplies		0
Equipment (exhibit rental, production)		0
Marketing (and opening)		0
Travel		0
Other		
Total Direct Costs		
Facilities & Administrative Costs		0
Total Project Costs	0	

Please show the source of Cost-Share Amounts according to the categories indicated:

	Cash	Non-Cash	TOTAL
NASA Space Grant			
Other Federal			
Industry			
Lead Institution			
Non-Profit Organization			
Academic Affiliates			
State/Local Government			
Participants			
Other			
TOTALS			

PLEASE ATTACH A ONE PAGE BUDGET NARRATIVE.