Indiana Space Grant Consortium
Graduate Fellowship Program Guidelines

Background

NASA initiated the National Space Grant College and Fellowship Program in 1989. The Space Grant national network includes over 900 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 52 consortia fund scholarships and fellowships for students pursuing careers in STEM-Science, Technology, Engineering, Mathematics (STEM), and curriculum enhancement 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 motto is "Inspire, Engage, Educate, and Employ". Our awards programs are designed to implement that motto and the INSGC Vision: "The INSGC will be the premier source of coordination, information, and inspiration for NASA-related education, outreach, and workforce development needs of the State of Indiana".

INSGC Fellowship Program Application Process

Eligibility Requirements:

- A US citizen
- Enrolled full time as graduate student in good standing at an INSGC affiliate institution during period of award
- Be involved in STEM-related research or STEM education project

Available Awards

Doctoral Fellowships: $12,000 - $20,000
Masters' Fellowships: $6,000 - $8,000

Funds may be used to offset costs for project expenses or student stipends. It is the applicant's responsibility to work with the institution to make the necessary arrangement for the type of funds being sought. A detailed budget will be requested from awardees.

INSGC is encouraging awardees to visit either NASA Centers or relevant industry partners. Additional travel funding and assistance in logistics will be provided to interested fellowship awardees.

Renewal

Doctoral and masters level students may receive an internship or fellowship award for consecutive years but must reapply and be awarded separately for each year of support.

Matching Funds

None required. However, while not a requirement for the NASA Space Grant Fellowship Program, matching funds and in-kind donations can be included. For example, at the discretion of the institution, Teaching Assistantships or Research Assistantships can be constructed by combining an INSGC Fellowship with other sources of funding to create a competitive academic year fellowship for the student. Other forms and sources of matching funds or leveraging (with other federal grants) are also encouraged.

Indirect Costs/Facilities & Administrative Costs

Indirect costs may not be charged to fellowships. Any administrative costs associated with

fellowship programs may be provided as matching funds by the institution.

Please note:

- Funds cannot be used for international travel.
- It is INSGC policy that scholarship and fellowship funds cannot be used for non-educational fees, graduate student tuition remission, or past due accounts. If the student receives a fee remission or any other form or support from their institution as part of their fellowship award, that is considered matching funds.

Submission Requirements

The application process for INSGC awards is conducted electronically through the National Space Grant application site. Doctoral fellowship awards are based in part on project proposals (may include dissertation research activity). Master's fellowships do not require proposals.

The online application will include the following sections:

- Student information
- Educational information, including institution(s) attended, major, degree objective, expected date of graduation
- PDF version of an unofficial transcript
- Interest in additional funding to visit either NASA Centers or relevant industry partners. Additional information will be supplied upon selection for a fellowship award
- NASA Relevance: Proposals shall clearly and concisely describe the relevance of the proposed work to NASA's currently funded research priorities and programs of the NASA Mission Directorate(s). Proposals are **required** to address one or more research priorities of the Mission Directorates and Centers. The current NASA mission directorates (https://www.nasa.gov/directorates/) are as follows:
    - Aeronautics Research
    - Exploration Systems
    - Space Operations
    - Science
    - Space Technology

Additional Submission Requirements—Doctoral Fellowships

For doctoral fellowships, INSGC will also evaluate a project proposal which will be entered via the application website. The online application will include the following sections:

- Research project title
- Non-technical project description: a brief summary of your research project and goals for use in website, news media requests, and NASA reports (450 words or less)
- Description of any former INSGC funding (450 words or less)
- Project Description (uploaded PDF file) limited to 3 pages, double-spaced, size 10-12 font. Please include the following sections:
    - Your vision for the project
    - Your project goals and which of NASA's goals are met (See Appendix A)
    - What are your SMART (specific, measurable, attainable, relevant, time-sensitive) objectives? How are you going to reach your goal?
    - Project Evaluation Requirement: construct a one page Logic Model (included in

the 3 page proposal narrative) to describe the overall picture of your project and the intended outcomes. Please see Appendix for instructions and template.

- How will you report back to INSGC on the outcome of your project?

Review Process
All fellowship applications will undergo a merit review process and be evaluated on the quality of writing, past performance, ability to communicate an understanding and interest in STEM education, and a clear understanding of the relationship of their interests to NASA.

In addition, doctoral proposals will undergo a merit review process. Experts will be selected from the members of the NASA and National Space Grant community. Awards of doctoral fellowships are based on both the student evaluation and proposal merit levels of review.

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

(0-30) *Is the approach*
Appropriately and adequately described?
Clearly written for a non-specialist?
Well conceived and organized?
Likely to yield the desired results?
Interdisciplinary?

(0-25) *Integration of research and education*
Does this project contain elements that enhance the integration of research and education for the applicant and other students?
Does the proposal support the applicant's ability to engage others in education, engagement, or inspiration in NASA related themes?

(0-20) *Does the level of project innovation*
Explore creative and original concepts?
Provide a new approach to an existing problem?
Allow development of an independent professional development path?

(0-15) *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) *Qualifications of the applicant*
How well qualified is the applicant in terms of the project proposed?

Presentation Summaries
Successful fellowship awardees will be expected to present a poster/paper at a conference or research meeting. The presentation should describe activities and include a self-evaluation of the experience. Although INSGC may offer an additional poster/paper presentation opportunity to the student, it is the student's responsibility to provide INSGC with evidence of a successful presentation (e.g., PowerPoint presentation or conference paper).

Longitudinal Tracking
By NASA specification, INSGC maintains longitudinal tracking on awardees. This information will be used to assess the impact of the INSGC program. Information collected for longitudinal tracking includes demographic data, affiliate of attendance, degree awarded, year, INSGC funds received and current activity (e.g. employed by industry, NASA, graduate school). INSGC staff will contact you in the future to provide information about your activity after graduation.

You will also be requested to provide a brief profile for inclusion on the website.

Required reporting for awardees
A brief (one page) progress report will be requested in January. A final report will be required at the end of the award period. Additional updates and success stories are appreciated and may be emailed to insgc@purdue.edu. These stories may be passed on to the NASA Office of STEM Engagement.

Contact Information
Please direct all questions to:
Dr. Dawn R. Whitaker
INSGC Program Manager
insgc@purdue.edu

Appendix A – NASA Office of STEM Engagement Goals and Objectives
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, fellowships 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.

Appendix B - 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 C - Logic Model Template

Project Name

Goal	Inputs	Activities	Outputs	Outcomes	Outcome Measures
