Oregon NASA Space Grant Consortium

2023-24
Graduate Fellowship Program
Call for Proposals

Open to graduate students attending OSGC affiliate member institutions

Program Guide

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Application Deadline August 25, 2023

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OSGC GRADUATE FELLOWSHIP PROGRAM GUIDE

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INTRODUCTION

Oregon NASA Space Grant Consortium (OSGC) is a member of the National Aeronautics and Space Administration's (NASA) National Space Grant College and Fellowship Program (National Space Grant Program) within the NASA Office of STEM Engagement (OSTEM). OSGC supports the agency's objectives of fostering and encouraging careers in Science, Technology, Engineering, and Mathematics (STEM) and STEM education to develop a skilled, high-performing, capable, and diverse next-generation workforce. Access to experiential learning and research opportunities are crucial to enhancing a student's academic experience to meet the needs of NASA and the nation. OSGC programs are directed towards students in STEM fields as well as STEM education.

The OSGC Fellowship Program goals are to advance the work of NASA Mission Directorates, encourage individuals to pursue graduate education in a space science or aerospace-related field, support research infrastructure at OSGC member institutions, retain U.S. graduates, and promote Diversity, Equity, Inclusion, and Accessibility (DEIA) in the future STEM workforce. Fellowship funds provide basic graduate research support, and/or serve as supplements to other awards or appointments such as graduate research assistantships, graduate teaching assistantships, and non-federal scholarships and fellowships.

NASA and OSGC are committed to supporting the national priority of increasing diversity in the STEM workforce. Oregon Space Grant is dedicated to embedding and integrating inclusive excellence throughout all aspects of OSGC programs and activities. Individuals from underserved and underrepresented groups in STEM fields, including women, students of color, persons with disabilities, first-generation students, students from rural communities, and students in the LGBTQ+ community are strongly encouraged to participate in our programs.

ELIGIBILITY

Applicants must be currently enrolled in a graduate program at one of the following OSGC member institutions.

4-Year Colleges and Universities

- Eastern Oregon University (EOU)
- George Fox University (GFU)
- Oregon Institute of Technology (OIT)
- Oregon State University (OSU)
- Pacific University (PU)*
- Portland State University (PSU)*
- Southern Oregon University (SOU)
- University of Oregon (UO)
- University of Portland (UP)
- Western Oregon University (WOU)

*Minority Serving Institution:
https://www.nasa.gov/sites/default/files/atoms/files/edu_nasa_msi_list_2022_2023.pdf

Visit the following webpage for your institution representative's contact information.
http://spacegrant.oregonstate.edu/members-oregon-nasa-space-grant-consortium

PROGRAM DESCRIPTION

Fellowships are one-year awards intended to support graduate students enrolled full time at an OSGC affiliate member institution. Applicants must be enrolled in a space science or aerospace-related STEM discipline, currently working on a faculty-mentored research project that aligns with a NASA Mission Directorate or the agency's top research priorities (see *Appendix A. Agency Information and Strategic Framework)*. Applicants must obtain full support from the faculty advisor prior to applying. Faculty advisors must be affiliated with an OSGC member institution and must provide a statement of support on behalf of the applicant. Submitted research proposals are primarily the work of the student with guidance from the mentor.

Competitively awarded, OSGC Graduate Fellowships are based on merit to recognize high academic achievement and promise while promoting graduate level STEM-related research and encouraging students to pursue STEM careers in support of NASA's mission. Applicants must demonstrate their research project's relevance to NASA's top research priorities and strong alignment with NASA Mission Directorates.

AWARD TERMS AND CONDITIONS

Award Funds

Graduate fellowships in the amount of $10,000 per student are competitively awarded to graduate students currently enrolled full-time at an OSGC affiliate member institution. Oregon Space Grant Consortium's obligation to make awards is contingent upon availability of funds from the NASA National Space Grant College and Fellowship Program through the NASA Office of STEM Engagement.

Duration

2023-24 graduate fellowships are one-time, non-renewable, academic year-long awards. Awards will be distributed as stipends directly to the student in two equal disbursements, the first in October 2023 and the second in May 2024 upon submission of all program deliverables.

Diversity, Equity, Inclusion, and Accessibility (DEIA)

OSGC strongly encourages graduate students from traditionally underserved and underrepresented communities in STEM fields, including women, students of color, persons with disabilities, first-generation students, students from rural communities, students in the LGBTQ+ community, and individuals attending OSGC Minority Serving Institutions to apply. The NASA Cooperative Agreement, 80NSSC20M0035, supporting this program establishes student diversity metrics that align with the National Center for Education Statistics (NCES) university enrollment levels for Oregon.

DATES AND DEADLINES

- Application Deadline: **Friday, August 25, 2023**
- Award Selections: **Friday, September 15, 2023**
- Duration of Award: **October 1, 2023 - May 31, 2024**
- Award Disbursements: **October 2023 ($5,000)** and **May 2024 ($5,000)**
- Student Symposium: **May 2024**
- Outreach Presentation: By **Friday, May 31, 2024**
- Final Report Deadline: **Friday, May 31, 2024**

STUDENT ELIGIBILITY

The Graduate Fellowship program is open to graduate students who meet the following eligibility criteria:

- Student is a U.S. Citizen
- Student maintains good academic standing, with a minimum GPA of 3.0 (out of 4.0)
- Student is enrolled as a full-time graduate student at an OSGC affiliate member institution for the duration of the award. (See *Eligibility* Page 3 for a list of eligible member institutions)
- Student is enrolled full time in an advanced degree program of study in a space science or aerospace-related STEM discipline (includes STEM education)
- Student currently works on a faculty-mentored research project that has NASA or space science/aerospace relevance and aligns with the agency's top research priorities

REQUIRED APPLICATION MATERIAL

Graduate Fellowship Application packets are submitted via the online application system and must include the following:

- Statement of Interest
- Description of Proposed Research Project
- Faculty Advisor Statement of Support
- Outreach and Diversity Statement
- Student Curriculum Vitae (CV)
- Academic Transcript
- Student Profile Form

Statement of Interest (Limit: 500 words)
A brief statement describing your interest in space science/aerospace and your desire to pursue a related career in a STEM field. Describe how receiving this fellowship would benefit you and contribute to your academic and career goals and objectives. Include other information that you believe qualifies you for fellowship consideration, including awards, achievements, challenges, or personal journey that you are willing to share.

Research Proposal (Limit: 2000 words)
A statement of work written by the student in consultation with the faculty advisor that describes the key elements of the current research and what the student intends to accomplish. Clearly describe the research objective and methodology, including a timeline. Identify how the proposed research relates to NASA's top research priorities and has strong alignment with NASA Mission Directorates (refer to *Appendix A. Agency Information and Strategic Framework)*. References are included in word count.

Faculty Advisor Statement of Support (Limit: 500 words)
The applicant's current faculty mentor for the proposed research must provide a brief statement of support acknowledging the proposal submission to the OSGC Graduate Fellowship program and the requirements and deliverables associated with the award. The Statement of Support is to be included in the online application packet submitted by the student.

Outreach and Diversity Statement (Limit 500 words)
Diversity and inclusion are top priorities for NASA, the Office of STEM Engagement, and the Oregon Space Grant Consortium. Building a more diverse STEM workforce is critical for development of a prepared future workforce to meet the growing needs of the agency and the industry. OSGC is committed to delivering programs with the intent of broadening student participation through NASA opportunities and activities. Provide a personal statement that describes the importance of outreach and the impact of sharing your research and experience with the goal of inspiring and engaging the next generation of diverse learners.

Student CV (Limit: Two pages)
A summary of your career and qualifications, including relevant employment, education, extra-curricular activities, and significant accomplishments. CV should include current contact information including email, phone, and mailing address.

Academic Transcript (Limit: As needed)
A PDF of your academic transcript must be submitted with your online application. Unofficial transcripts from your college or university website are acceptable and should include record of the courses in which you are currently enrolled.

Student Profile Form
Applicants must complete an online Student Profile Form: **https://spacegrant.net/forms/osgc-profile**

Online Application
Complete application packets are submitted online: **https://spacegrant.net/apps/orf1**

DELIVERABLES IF AWARDED

The following deliverables are required if awarded:

Outreach Presentation

Graduate fellowship recipients must make at least one presentation at an outreach event prior to the end of the award. Students should consider presentations to K-12 communities or in partnership with OSGC informal education affiliates—OMSI, Evergreen Aviation & Space Museum, The Museum at Warm Springs, or Sunriver Nature Center and Planetarium. Students will need to document the date and location of the event, number of attendees, and demographics of audience if possible and include the information in the final report.

Student Symposium

Graduate fellows are required to present a poster and PowerPoint presentation at the OSGC Spring Symposium, held in May 2024.

Final Report

A final report is due no later than May 31, 2024. The report should summarize the research methodology, analysis, findings, and outreach efforts. A list of publications arising from the work (if applicable) should be included. The final report should be written in an acceptable research format (APA, MLA, Chicago) and should not exceed 10 pages.

Publications

OSGC must be cited as a source of funding in all publications, proposals, speaking engagements, web sites, or general dissemination of information resulting from the work using the phrase "…supported in part through NASA and Oregon Space Grant Consortium, cooperative agreement 80NSSC20M0035".

Contact Information

Student agrees to notify OSGC of any changes in mailing address, email, and telephone number for contact purposes.

Information/Media Release

The student grants permission to release and/or publish requested recipient information to NASA or other appropriate parties. Students submit a signed Media Release Form, granting OSGC permission to release information and utilize any submitted photos for publications and/or social media.

REVIEW AND SELECTION PROCESS

Applications are evaluated for eligibility when received. Qualified applications will be reviewed by a diverse selection committee who will make recommendations for funding based on stated review criteria (see below). Preference may be given to individuals attending MSI designated OSGC member institutions.

Review Criteria

- Academic achievement
- Strength of Statement of Interest
- Demonstration of Space Science/Aerospace-related career goals
- Research proposal is clearly related to NASA's top research priorities and strongly aligns with NASA Mission Directorates
- Strength of Outreach and Diversity Statement
- Commitment of Faculty Advisor

FOR MORE INFORMATION

Direct questions to Catherine Lanier, OSGC Interim Director, via email at catherine.lanier@oregonstate.edu

Visit the Oregon Space Grant Consortium website: http://spacegrant.oregonstate.edu.

OSGC Fellowship Program details: https://spacegrant.oregonstate.edu/graduate-fellowships

APPENDIX A: AGENCY INFORMATION AND STRATEGIC FRAMEWORK

NASA's current topics and relevant missions are listed below. Students should use these priorities to guide them in the selection of a research review topic.

Humans in Space

International Space Station (ISS) - Commercial Crew Program (CCP) - NASA Astronauts - Low Earth Orbit (LEO) Economy

Moon to Mars

Commercial Lunar Payload Series (CLPS) Initiative - Lunar Gateway - Artemis Mission - Space Launch System (SLS)

Earth

Air – Climate - Hazards - Water, Oceans, and Ice - Land

Space Tech

Space Travel - Living in Space - Manufacturing, Materials, and 3-D Printing - Robotics - Science Instruments - High-Tech Computing

Flight

Green Aviation - Future Aircraft - Supersonic Flight - Reducing Flight Delays - Unmanned Aircraft

Solar System and Beyond

Planets, Moons, and Dwarf Planets - The Search for Life and Exoplanets - The Sun - Stars and Galaxies - Black Holes - Dark Energy and Dark Matter

Current High-Profile NASA Missions

- Artemis Program
- Commercial Crew Program
- Curiosity Mars Rover
- Hubble Space Telescope
- InSight Mars Lander
- International Space Station
- James Webb Space Telescope
- Juno: Mission of Jupiter
- Lunar Reconnaissance Orbiter
- Mars Perseverance Rover
- New Horizons: Pluto and Beyond
- OSIRIS-Rex Asteroid Mission
- Parker Solar Probe

NASA Vision

To reach for new heights and reveal the unknown so that what we do and learn will benefit all humankind.

NASA Mission

Lead an innovative and sustainable program of exploration with commercial and international partners to enable human expansion across the solar system and bring new knowledge and opportunities back to Earth. Support growth of the Nation's economy in space and aeronautics, increase understanding of the universe and our place in it, work with industry to improve America's aerospace technologies, and advance American leadership.

Strategic themes that make up the foundation of the 2018 Strategic Plan and NASA's goals

- **DISCOVER** - Expand human knowledge through new scientific discoveries
- **EXPLORE** - Extend human presence deeper into space and to the Moon for sustainable long-term exploration and utilization
- **DEVELOP** - Address national challenges and catalyze economic growth
- **ENABLE** – Optimize capabilities and operations

NASA 2018 Strategic Plan

https://www.nasa.gov/sites/default/files/atoms/files/nasa_2018_strategic_plan.pdf

NASA's vision and mission draw support from the organizational structure of the Mission Directorates, each with a specific responsibility.

NASA's Mission Directorates

Aeronautics Research Mission Directorate (ARMD): Enables a safer, more secure, efficient, and environmentally friendly air transportation system

- Transforms aviation with research to dramatically reduce the environmental impact of flight, and improves aircraft and operations efficiency while maintaining safety in increasingly crowded skies. ARMD also generates innovative aviation concepts, tools, and technologies for development and maturation by the aviation community. https://www.nasa.gov/aeroresearch

Human Exploration and Operations (HEOMD): Operates the International Space Station and prepare for human exploration beyond low Earth orbit

- Leads human exploration in and beyond low Earth orbit by developing new transportation systems and performing scientific research to enable sustained and affordable human life outside of Earth. HEOMD also manages space communication and navigation services for the Agency and its international partners. http://www.nasa.gov/directorates/heo/home/

Science Mission Directorate (SMD): Exploring the Earth-Sun system, our solar system, and the universe beyond.

- Expands the frontiers of Earth science, heliophysics, planetary science, and astrophysics. Using robotic observatories, explorer craft, ground-based instruments, and a peer-reviewed portfolio of sponsored research, SMD seeks knowledge about our solar system, the farthest reaches of space and time, and our changing Earth. http://science.nasa.gov/

Space Technology Mission Directorate (STMD): Develops the crosscutting, advanced pioneering new technologies needed for current and future missions, benefiting the aerospace industry and other agencies, and addressing national needs.

- Pursues transformational technologies that have high potential for offsetting future mission risk, reducing cost, and advancing existing capabilities. STMD uses merit-based competition to conduct research and technology development, demonstration, and infusion of these technologies into NASA's missions and American industry. This mission directorate is being refocused as a new Exploration Research & Technology (ER&T) organization to support exploration as a primary customer. http://www.nasa.gov/directorates/spacetech/home/index.html.

The Mission Support Directorate (MSD): Enables the Agency's missions by managing institutional services and capabilities.

- MSD is actively reducing institutional risk to NASA's current and future missions by improving processes, stimulating efficiency, and providing consistency and uniformity across institutional standards and practices. https://www.nasa.gov/msd.

See *Appendix B. Research Priorities for NASA Mission Directorates* for detailed Mission Directorate descriptions.