



Oregon NASA Space Grant

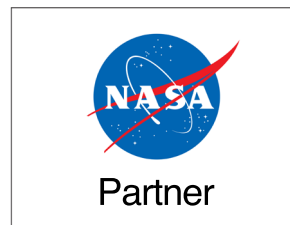
OrION

Oregon Internship Network Opportunity Program Guide

**Open to Faculty Members at OSGC Community College,
4-Year Institutions, and Informal Education Institutions**

**For a full duration internship, submit opportunities by
March 1, 2023**

**Opportunity submissions will be accepted on a rolling basis for internships
of prorated length for as long as funds are available.**



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OrION Program Guide

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OrION Program Guide

INTRODUCTION TO THE ORION PROGRAM

OVERVIEW

- OSGC will fund 10, ten-week, half-time (20 hr/week) undergraduate internships for the spring of 2023.
- Internships submissions are welcome in a broad range of STEM disciplines. In addition to the traditional aerospace-related fields of engineering and mathematics, **diverse fields of study including earth sciences, chemistry, biology, food science, and computer science are also eligible**. Submissions will be considered from the following fields of study:
 - STEM Education
 - Sciences (Life, Physical, Applied)
 - Engineering*We encourage faculty to contact OSGC if they have questions about whether their field of study is suitable.*
- Selections should be competitive and considerate of OSGC's commitment to **Diversity, Equity, Inclusion, and Accessibility (DEIA) efforts** and should reflect state demographics for gender and underserved and underrepresented groups in STEM.
- This document provides faculty mentors with information about eligibility, deadlines, and other aspects that will guide you through the application process and should be read in its entirety.

INTRODUCTION

The 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) in NASA's 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 in order to meet the needs of NASA and the nation. OSGC programs are directed towards undergraduate students in STEM fields and designed to help build a student's STEM identity and complement a student's academic career experience. In support of the national priority to increase diversity in STEM fields, **women, individuals from underserved and underrepresented groups in STEM fields, and persons with disabilities are strongly encouraged to participate in our programs.**

OrION is a database for Oregon-based student internship opportunities submitted by OSGC affiliate members and hosted on location at the affiliate institution. OrION serves as a connection to internship opportunities for students attending OSGC member institutions. Internships are designed to provide students access to experiential learning opportunities, working directly with a faculty mentor on an academic research or educational project in STEM or STEM education that goes beyond what is taught in the classroom.

As a participant of the National Space Grant Program within OSTEM, OSGC is dedicated to building, sustaining, and deploying a skilled, high-performing, and diverse workforce to meet the current and emerging needs of NASA and the nation. A critical point in the student education pathway is access to faculty who are engaged with research and offer education efforts that align with NASA's top research priorities and OSTEM initiatives.

Traditionally, faculty have engaged students with hands-on research experiences by serving as Principal Investigator of a NASA research award, providing limited-scope research projects to be conducted by undergraduate or graduate students. Alternatively, students seek NASA center internships to gain valuable experience contributing to a NASA project and working directly with a NASA mentor.

To expand the opportunities for both faculty and students, OSGC is offering in-state student internships at affiliate member institutions, where students will work with a mentor on research projects that are not required to be part of a NASA research award and do not require out-of-state travel. This is also an opportunity to broaden the range of disciplines associated with NASA research and has the potential to sustain and increase the involvement of OSGC affiliated faculty who recruit and educate STEM undergraduates. Such efforts help build student academic work resumes and develop internship-ready OSGC students for a NASA education pathway.

In addition to providing opportunities for students, OrION creates opportunities to engage new faculty at OSGC member institutions. A goal of the network is to act as a conduit to prepare early-career faculty to leverage the assistance OSGC provides for non-NASA awards into a potential, full-scale NASA research award.

The OrION Program supports NASA's STEM objectives of creating unique learning opportunities and experiences for a diverse set of students to contribute to the agency's work in exploration and discovery. For all of these programs, women, individuals from underserved and underrepresented groups in the STEM fields, and individuals with disabilities are strongly encouraged to apply.

Applicants will need to demonstrate how their field of study relates to the NASA Vision and the activities of the various Mission Directorates. See Appendix A: Agency Information and Strategic Framework

AWARD FUNDS

A total of \$36,500* will be awarded in the Spring 2023 OSGC OrION Program to fund 10, ten-week, half-time (20 hr/week or 200 hours total) undergraduate internships.

**OSGC's ability to make awards is contingent on NASA funding*

ORION INTERNSHIP SUBMISSION GUIDELINES

Well-thought-out internship projects and dedicated mentorship are critical to internship success. Internship opportunities should have a STEM or STEM education focus and can be either virtual or in person.

Project opportunities are submitted via OrION and will be reviewed, ranked, and approved by OSGC. If an opportunity is accepted for funding, it will be opened to students from OSGC member institutions for application. Members who are submitting opportunities will review student applications and make selections for student placements. Selections should be competitive and considerate of OSGC's commitment to Diversity, Equity, Inclusion, and Accessibility (DEIA) efforts.

ELIGIBILITY

Internship proposals will be accepted from faculty employed by 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)

Community Colleges

- Lane Community College (Lane)
- Linn-Benton Community College (LBCC)
- Oregon Coast Community College (OCCC)
- Portland Community College (PCC), Cascade
- Portland Community College (PCC), Rock Creek
- Portland Community College (PCC), Southeast
- Portland Community College (PCC), Sylvania
- Southwestern Oregon Community College

Informal Education Institutions

- OMSI
- Evergreen Aviation & Space Museum
- Sunriver Nature Center & Observatory
- The Museum at Warm Springs

REQUIRED INTERNSHIP SUBMISSION INFORMATION

- Principal Investigator contact information
- Introduction
- Academic majors sought
- Student classification sought
- Student selection process
- Diversity, Equity, Inclusion, and Accessibility (DEIA) Effort Statement
- Position description
- Position responsibilities
- Required and preferred qualifications
- Compliance with NASA Mission Directorates. Refer to *Appendix A. Agency Information and Strategic Framework*.
- Outreach Component
- Virtual or in-person opportunity

Internship opportunities are submitted via the online application form.

Restrictions

The OSGC Cooperative Agreement stipulates no human subject work can be conducted under the award. Hence, Human Subject Research is prohibited from inclusion in this or any OSGC program.

DATES | DEADLINES

Important dates and deadlines for spring 2023 competition for all institutions are as follows:

- Application Deadline: **March 1, 2023**
- Funding Selections: **March 15, 2023**
- Internship Selections: **April 1, 2023**
- Internship Period: **April 3 – June 10, 2023**
- Award Disbursements to student: Initial 2/3 in April 2023, remaining 1/3 in November 2023, after participation in OSGC Symposium

EVALUATION CRITERIA

Proposals will be reviewed and evaluated by OSGC staff for compliance with the request for proposals. Award decisions are made by the OSGC Director.

- **Complete Proposal:** All required elements are included
- **Strength and feasibility of the research/project proposal**
- **Space Science relevancy:** Alignment with NASA Mission Directorates, the agency's top research priorities, and OSTEM initiatives
- **Strength of DEIA effort:** Incorporates diversity and inclusion of female, underserved and underrepresented students in STEM fields, and students with disabilities, and includes a recruitment and retention plan
- **Outreach Plan:** Proposed outreach activities that extend the reach to K-12 communities

INFORMATION IF AWARDED

STUDENT SELECTION PROCESS

If an internship proposal is selected for funding, OSGC staff will reach out to the PI and inform them that the student intern selection process may begin.

Student Eligibility

Internships are open to undergraduate students who meet the following eligibility criteria:

- Student is enrolled in a minimum of 12 credit hours per term at an OSGC **affiliate community college or 4-year institution** at the time of application (winter 2023) and remains enrolled for the duration of the award (through spring 2024). If this enrollment requirement is met the student does not need to be enrolled at the institution hosting the internship opportunity.
- Student is enrolled in STEM, STEM education coursework, or an MAT program during the 2023-24 academic year.
- Student maintains good academic standing
- Student is a U.S. Citizen

Student Application Procedure

Students must submit a general application to the OrION program. Students may also submit a cover letter for individual internship opportunities, which will be forwarded to the PI.

The PI is responsible for the selection of the student and may select students from the OrION pool of applicants. PIs are also responsible for all actions required for student involvement to be compliant with their institution and department policies.

Hiring Considerations

Student selections should be congruent with state demographics for underserved and underrepresented groups in STEM fields (15.9%) and NASA's metric of 45% female.

In traditionally male-dominated fields this may be a challenging provision, but it is highly encouraged to support OSGC's effort to create a more diverse STEM workforce and to help OSGC meet NASA's strict requirements for target demographics.

If a mentor has multiple internships funded, intern selection should reflect state demographics. An even number of intern positions should have an equal number of males and females, and an odd number of interns should have at most one more male.

Illustration:

- 6 interns: 3f/3m
- 7 interns: 3f/4m or 4f/3m

When selections are complete, the PI must inform OSGC staff of their decisions. OSGC will issue award letters to the selected students, which initiates the stipend process.

DELIVERABLES

PI Deliverables

- **Student Evaluation Report:** Due to OSGC at the end of the final term of the student internship

Student Deliverables

- **Student Profile Form:** Students agree to complete an online Student Profile Form when they accept the award. This information is used for reporting to NASA Office of STEM Engagement and for longitudinal tracking purposes to evaluate the effectiveness of NASA's higher education programs.
- **Final Report:** A final report between 2-4 pages in length should describe the experience and the outcomes of the internship. The student will include what they personally gained from the experience and how it supported or modified their perspective on research.
- **Poster:** An illustrated summary of their project, includes an abstract, purpose, methodology, results, and conclusions. Posters will be delivered both virtually and printed for display at an OSGC symposium.
- **Presentation at an OSGC Symposium:** Students agree to present their poster and make an oral presentation about their OrION Internship experience at an OSGC Symposium.

Other Requirements

Internship recipients agree to:

- Notify OSGC of any changes in mailing address, e-mail address, or telephone number for purposes of progress reports.

- Grant permission to release and/or publish requested recipient information to NASA or other appropriate parties.
- Grant permission to release information and utilize any submitted photos from posters and/or presentations for publications and/or social media.
- Include the following text in all publications resulting from funded work “...supported in part through funding from NASA / Oregon Space Grant Consortium, grant 80NSSC20M0035.”

FOR MORE INFORMATION

DIRECT QUESTIONS TO

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Visit the Oregon Space Grant Consortium online at:

Website: <http://spacegrant.oregonstate.edu>

Twitter ID: OSGC <http://twitter.com/ORSpaceGrant>

...or find us on Facebook

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 STARR 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 for the benefit of 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)**: 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>
- **Exploration Systems Development Mission Directorate (ESDMD)**: defines and manages systems development for programs critical to the NASA's Artemis program and planning for NASA's Moon to Mars exploration approach in an integrated manner. ESDMD manages the human exploration system development for lunar orbital, lunar surface, and Mars exploration. ESDMD leads the human aspects of the Artemis activities as well as the integration of science into the human system elements. ESDMD is responsible for development of the lunar and Mars architectures. Programs in the mission directorate include **Orion**, **Space Launch System**, **Exploration Ground Systems**, **Gateway**, **Human Landing System**, and Extravehicular Activity (xEVA) and Human Surface Mobility.
- **Science Mission Directorate (SMD)**: 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 Operations Mission Directorate (SOMD)**: manages NASA's current and future space operations in and beyond low-Earth orbit (LEO), including commercial launch services to the International Space Station. SOMD operates and maintains exploration systems, develops and operates space transportation systems, and performs broad scientific research on orbit. In addition, SOMD is responsible for managing the space transportation services for NASA and NASA-sponsored payloads that require orbital launch, and the agency's space communications and navigation services supporting all NASA's space systems currently in orbit.
- **Space Technology Mission Directorate (STMD)**: 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>.