

Oregon Space Grant Consortium Lead Institution:
Oregon State University

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Consortium URL: <http://spacegrant.oregonstate.edu>
Grant Number: NNX15AJ14H

Lines of Business (LOBs): NASA Internships, Fellowships, and Scholarships; STEM Engagement; Institutional Engagement; Educator Professional Development

A. PROGRAM DESCRIPTION:

The National Space Grant College and Fellowship Program consists of 52 state-based, university-led Space Grant Consortia in each of the 50 states plus the District of Columbia and the Commonwealth of Puerto Rico. Annually, each consortium receives funds to develop and implement student fellowships and scholarships programs; interdisciplinary space-related research infrastructure, education, and public service programs; and cooperative initiatives with industry, research laboratories, and state, local, and other governments. Space Grant operates at the intersection of NASA's interest as implemented by alignment with the Mission Directorates and the state's interests. Although it is primarily a higher education program, Space Grant programs encompass the entire length of the education pipeline, including elementary/secondary and informal education. The Oregon Space Grant Consortium is a Program Grant Consortium funded at a level of \$570,000 for fiscal year 2018.

B. PROGRAM GOALS:

The Oregon Space Grant Consortium (OSGC) develops and implements programs, projects, and activities that contribute to the development of a diverse and qualified STEM national workforce in disciplines needed to support and achieve NASA's strategic goals. OSGC provides students with quality, hands-on experiences and opportunities through authentic science inquiry using NASA aligned material and resources. OSGC focuses on interdisciplinary and inter-institutional collaborations among member institutions to strengthen the statewide STEM-based educational infrastructure. OSGC relies on the strength of its community college, university, and informal education partners to provide a diverse pool of students, educators, researchers, and administrators to sustain a consortium that continually and effectively contributes to the National Space Grant Program.

OSGC Goals: 1) Contribute to development of capable and prepared human capital in the STEM disciplines by providing access to unique hands-on research and educational opportunities to Oregon students, with an emphasis on involvement of women and

underrepresented minorities in STEM fields. **2)** Utilize the state and national network of partners to strategically disseminate NASA information and resources to students, educators, and faculty to increase awareness of and participation in NASA-related research and educational opportunities. **3)** Invest in a balanced suite of interdisciplinary research, education, and public service programs that reflect the priorities of the National Space Grant Program and NASA Office of STEM Engagement with a primary focus on NIFS, Higher Education, and Research Infrastructure and a secondary focus on Informal Education and Public Service.

Internship Goal: Effectively and broadly disseminate NASA Center Internship opportunities using the NASA OSSI via the OSGC affiliate network and social media avenues. **SMART Objectives:** 1) Provide NASA Center Internships to a diverse student group congruent with the state demographics of 14.9% underrepresented minorities and to the NASA Office of STEM Engagement requirement of 40% female. 2) Provide NASA Center Internships to students representing a diverse range of affiliate institutions.

Fellowship/Scholarship Goal: Effectively and broadly disseminate OSGC Fellowship and Scholarship opportunities via the OSGC affiliate network and social media avenues. **SMART Objectives:** 1) Utilize the OSGC online scholarship application system to achieve efficient and secure data collection, information transfer and payment processing in a timely manner. 2) Competitively award OSGC fellowships and scholarships to a diverse undergraduate student group congruent with the state demographics of 14.9% underrepresented minorities and to the NASA Office of STEM Engagement requirement of 40% female. 3) Provide OSGC fellowships and scholarships to students representing a diverse range of affiliate institutions.

Fellowship/Scholarship Goal: Build collaboration between undergraduate students and faculty mentors working within a STEM discipline relating to NASA's Vision and one or more of the Mission Directorates. **SMART Objectives:** 1) Competitively award up to three OSGC Fellowships in the FY2018-19 to students conducting research at an OSGC research based 4-year affiliate institution.

Fellowship/Scholarship Goal: Promote and retain undergraduate student enrollment in STEM programs. **SMART Objectives:** 1) Award up to 28 Community College Scholarships and up to 13 Undergraduate Scholarships to students enrolled in STEM programs including physical sciences, life sciences, planetary sciences, mathematics, computer science, technology, or engineering at OSGC affiliate institutions. 2) Award up to eight STEM Community College Opportunity for Research Experience or SCORE awards to community college undergraduates enrolled in STEM programs at OSGC community college affiliates.

Higher Education Goal: Support higher education programs that align with NASA's Education Priorities and Lines of Business by providing direct student support for authentic hands-on experiences in the STEM disciplines, providing experiential learning opportunities, increasing STEM engagement through unique NASA-related experiences, and fostering course enhancement and development based on the strengths of the OSGC affiliates and OSGC NASA-related research. **SMART Objectives:** 1) Efficiently and broadly disseminate the call for the Undergraduate Team Experience Award Program via the affiliate network and social media avenues to support up to 7 teams participating in a NASA-related hands-on STEM based project in the FY2018-19 funding cycle. 2) Collaborate with NASA Center Education Affairs Officers to

competitively place students in NASA Center internships. 3) Facilitate development of at least one course designed to contribute to NASA's Education Areas of Emphasis.

Higher Education Goal: Provide unique and authentic hands-on higher education opportunities to a diverse population of students, representing the OSGC affiliate institutions. **SMART Objectives:** 1) Support UG Team Experience Awards and Internships congruent with or in excess of state demographics of 14.9% underrepresented minorities in STEM fields and the NASA Office of STEM Engagement requirement of 40% female.

Research Infrastructure Goal: Provide opportunities for students and faculty to present their research to their peers and potential students/faculty. **SMART Objectives:** 1) Host the OSGC Student Symposium and the SCORE Symposium to highlight OSGC-supported student research experiences and projects. Engage and recruit potential students to participate in OSGC programs.

Research Infrastructure Goal: Design research infrastructure programs for faculty and students in the STEM fields that align with NASA's Office of STEM Engagement Lines of Business and current areas of emphasis by providing authentic, hands-on student experiences rooted in NASA-related research and utilizing NASA's unique capabilities. **SMART Objectives:** 1) Administer the OSGC Faculty Research Award Program to engage early career faculty to work with NASA-related research. Funded proposals will emphasize hands-on authentic science inquiry and mentorship.

Pre-College Goal: Support the NASA Education area of emphasis to engage educators in hands-on curriculum enhancement. **SMART Objectives:** 1) OSGC supports the efforts of the South Metro-Salem STEM center to provide professional development opportunities for in-service educators to bring NASA material and content to the classroom through exposure to NASA scientific and technical expertise. OSGC will solicit proposals and make an award for delivery of a NASA related in-service teacher workshop during the summer of 2018.

Precollege Goal: Support the NASA Education aspirations for increasing the participation of underserved populations with STEM fields of study by continuing the OSGC Native Launch Initiative. **SMART Objectives:** 1) Conduct NASA themed robotics and aviation workshops during the summer of 2018 to engage more than 50 Native-American K-12 students.

Precollege Goal: Support the NASA Education aspirations for increasing the participation of underserved populations with STEM fields of study by establishing the Oregon NASA Space Science Education Program. **SMART Objectives:** 1) Appoint an OSSEP Specialist. 2) Develop NASA outreach activities for delivery to K-12 schools, libraries and general public events. 3) Deliver at least 10 events with a total audience of at least 100 people and students.

Informal Education Goal: Provide information, resources, and networking opportunities to students, educators, and affiliates. **SMART Objectives:** 1) Disseminate NASA material, resources, and professional development opportunities via the OSGC website, educator blog, and via social media avenues.

Informal Education Goal: Utilize informal education and public venues as a means to share faculty research and areas of expertise with students and general public. **SMART Objectives:** 1) Serve as docent/volunteer at OSGC informal education affiliate. 2) Support speakers for events

arranged and/or hosted by OSGC affiliates. 3) Reappoint 2 Astronomers-in-Residence with the goal of delivering at least 10 events with a total audience of 100 people.

Consortium Management Goal: Efficiently and effectively administer and lead the grant, maintain open communication within the Consortium and among affiliates, contribute to the national network, and deliver succinct and timely reporting to NASA's Office of STEM Engagement. **SMART Objectives:** 1) Host the OSGC Affiliate Meeting. 2) Attend the National Council of Space Grant Directors Meetings. 3) Disseminate info and opportunities from NASA HQ and the National Space Grant Program directly to affiliate reps. 4) Maintain the OSGC website and social media with current OSGC/NASA program information, research and education opportunities, resource for students and educators, and other general OSGC/NASA news and updates. 5) Make annual affiliate visits as permitted. 6) Complete NASA reporting in a timely manner. 7) Provide contact info for OSGC student awardees for longitudinal tracking purposes.

C. PROGRAM/PROJECT BENEFITS TO PROGRAM AREAS:

It greatly improved my education and life. My scholarships from OSGC have allowed me to pursue higher education without drowning myself in student debt, and OSGC also helped me get a summer internship at NASA Goddard. That internship gave me invaluable experience in both the STEM field and in everyday life (I had to move across the country!) and was overall a wonderful experience. (Rachelle Austin – on 1/18/19, 2017 OSGC Undergraduate Scholarship, 2018 OSGC Internship Program, Western Oregon University – Teaching Assistant). Aligns with Higher Education projects.

The OSG has significantly impacted my life. At the end of my internship, I was hired by NASA as a contractor through Science & Technology Corporation (Cheyenne Devillier - on 01/20/19, 2018 OSGC Internship Program, Science and Technology Corporation - NASA Research Associate). Aligns with Higher Education projects.

Being involved with this program was a great experience and helped me to get more out of my education through hands on learning. The opportunity enabled me to work on a difficult and interesting project and served to cement my interest in aerospace as a future career aspiration. (Jacob Tiller - on 02/19/18, 2017 OSGC Student Research Award, 2018 OSGC Internship Program, Portland State University - Work Study). Aligns with Higher Education Projects.

D. PROGRAM ACCOMPLISHMENTS:

- NASA Internships, Fellowships, and Scholarships (NIFS):

1) OSGC supported NASA Center internships under the NIFS program area and promoted the NASA online application system at <https://intern.nasa.gov> to students through the OSGC network and via the OSGC website and social media resources. In 2018, 12 internships were funded, totaling an investment of \$82,500. All NASA 2018 summer interns presented their projects at the OSGC 2018 Student Symposium. Of the students supported, 58% are female, 42% are underrepresented minorities in STEM, and 17% are students with military experience. Demographics for students who participated in 2018 internships were reported in FY2018

OEPM. Selections for 2019 internships will be made by May 2019; selected students will be tracked and awards reported in subsequent reporting cycles.

2) The 2018-19 OSGC Scholarship and Fellowship program call was disseminated to the OSGC affiliate network, and via the website and social media resources. OSGC utilized the Education Programs Support Services (EPSS) online application and review system to ensure secure data collection, information transfer, and payment processing. 16 out of 18 or 89% of OSGC higher education affiliates were represented in the fellowship/scholarship applicant pool. Awards were announced in August 2018. Payment disbursements were made in October 2018 and March 2019. 15 Community College Scholarships at \$1K/student, 15 Undergraduate Scholarships at \$3K/student, and two Undergraduate Research Fellowships at \$5K/student for a total of 33 student fellowship/scholarship awards were made during this reporting period. Fellows work directly with a mentor to conduct NASA-related research throughout the academic year and are required to present their projects at the OSGC Student Symposium.

As part of the Fellowship/Scholarship program, OSGC implemented the SCORE Program or STEM Community-College Opportunity for Research Experience Program. This award provides community college students an opportunity to work together with a faculty mentor on a term-long research project in Science, Technology, Engineering, and Mathematics (STEM) or STEM education that goes beyond what is taught in the classroom. Projects may include individual components of a team or faculty research project. Projects were competitively selected; 9 SCORE awards of \$800 each were awarded.

A total of 42 fellowship/scholarship awards were made - 33 F/S and 9 SCORE. Of all F/S awards made, 55% were awarded to females, 26% were awarded to underrepresented minorities in STEM fields, 5% were awarded to students with disabilities, and 2% were to students with military experience. Percentages are in excess of the state demographics and the NASA Office of STEM Engagement female demographic requirement. 43% of F/S awards were made to students attending Minority Serving Institutions. 2018-19 Fellowship/Scholarship recipients will be reported in FY2019 OEPM. OSGC will open the call for the 2019-20 Fellowship and Scholarship Program during this reporting cycle; recipients will be tracked and awards will be reported in subsequent reporting cycles.

3) Of the 4th Year Extension NIFS budget, 13% of the associate director's salary was devoted to implementing and executing NIFS programs.

- Higher Education projects:

1) The Undergraduate Team Experience Award Program call, promoting year-long hands-on STEM based student research projects was disseminated via the OSGC network, website, and via social media resources with \$80K funds available through a competitive proposal process. Nine proposals were selected for funding. 36% of the students significantly involved with the projects are female, 16% are underrepresented minorities in STEM, and 2% are students with military experience. Projects include a modular rocketry system, a NASA Student Launch Initiative USLI team, four Base 11 systems, a CanSat project associated with NASA's CubeSat Launch Initiative, a NASA's Robotic Mining Competition team, and a community college project creating a nutrient map of Empire Lakes near the Oregon Coast. Teams will present their projects at the OSGC 2019 Student Symposium. Students who are significantly involved with the teams will be included in subsequent reporting cycles.

2) The Astronomer-in-Residence Program was proposed under Informal Ed but was implemented as a Higher Education program, with an Informal Ed component. Two individuals from within the consortium and one graduate student are designated to address requests for information and education related to astronomy. The AIR program was implemented prior to the 2017 Total Solar Eclipse to address the flood of requests for information regarding the Total Solar Eclipse. Post Eclipse, the AIRs continue to field student, faculty, and public requests for astronomy-related inquires.

One AIR is a former K-12 science teacher and a Solar System Ambassador for Jet Propulsion Laboratory; one is a physics/science/honors college instructor at OSU. One physics graduate student also serves as a student astronomer-in-residence. Collectively in FY2018, the Astronomers-in-Residence gave six public talks, reaching a combined total of 263 general public and students, one invited talk to the OSGC affiliate meeting (30 faculty/staff, 10 students) to highlight the new program, five hands-on activities reaching 184 individuals, an astronomy club open house to approximately 220 students/public combined, and 2 newspaper interviews. Talks included May the 4th Be With You, Power of Ten Space Travel, NASA Missions, Touring the Planets, and star parties. AIRs spoke to Rotary clubs, K-12 classrooms, community college groups, churches, and astronomy clubs. Total program impact was approximately 820 people plus an undetermined reach for the newspaper interviews.

3) The support for STEM in-service teacher development to be delivered via the South Metro-Salem STEM Partnership (SMSP) was proposed as a Pre-College program but funded as a Higher Ed program with a pre-college activity component. The SMSP is a regional hub designed to increase access, excitement, and engagement of students in STEM, and experiential learning. OSGC supports the effort of the SMSP to provide opportunities for in-service educators to bring NASA material and unique STEM content to the classroom through exposure to NASA scientific and technical expertise, thus supporting the NASA Education area of emphasis to engage educators in hands-on curriculum enhancement. A core component has been development of the Oregon Connections tool, which matches the expertise of STEM professionals with K-12 and university educators who seek their experience, participation, and support. Oregon Connections provides or augments embedded professional development opportunities for in-service educators to bring NASA material and content to the classroom through exposure to NASA scientific and technical expertise.

4) Of the 4th Year Extension Higher Education budget, 10% of the director's and associate director's salaries was devoted to implementing and executing higher education programs.

- Research Infrastructure projects:

1) Hosted the 2018 Student Symposium in November 2018; all Undergraduate Research Fellows, Undergraduate Student Research Awardees, NASA interns, and students who are a part of the OSGC Faculty Research Award Program participated. Mr. Jon Waterhouse, National Geographic Education Fellow Emeritus and Explorer and co-founder of the Living Indigenous Network of Knowledge (LINK), gave the keynote address. 33 students presented at the symposium, of which 27% are female. The event was well attended by students, faculty, staff, and local public community. Students may include the symposium as an invited talk and a publication as a result of their participation. Student papers will be reported in FY2019 OEPM.

2) Hosted the first annual SCORE Symposium in June 2018. Modeled after the Student Symposium, the SCORE Symposium gives community college students who are recipients of the

term-long research project SCORE awards, an opportunity to present their work to their peers, faculty/staff, and students from 4-year institutions as well. Dr. Matt Andrews, Executive Associate Dean of the College of Science at Oregon State University gave the keynote address. SCORE students may include the symposium as an invited talk and a publication as a result of their participation. Student papers were reported in FY2018 OEPM.

3) The OSGC Faculty Research Award Program is a workforce development program, designed to develop a diverse, capable, and prepared human capital in aerospace-related STEM disciplines by funding scientific aerospace-related faculty research at OSGC institutions. Projects are encouraged to have a student/mentor component. Students who are funded as part of the program will be longitudinally tracked and will present their work at the 2019 Student Symposium; student demographics will be reported in FY2019 OEPM. In FY2018, OSGC continues support for the project titled Investigations into Zebra Fish Cataract Formation Following Exposure to Simulated Cosmic and Galactic Radiation Fields to Dr. Jan Spitzbergen in the Aquatic Animal Health Laboratory at OSU. The research is under the guidance of Dr. Jack Higginbotham.

- Precollege projects:

1) Implemented the Oregon Space Science Education Program (OSSEP). OSSEP brings current NASA STEM aerospace education curriculum and activities to Oregon K-12 students, teachers and anyone interested in sharing the excitement of NASA. Through delivery of a developing suite of opportunities from one hour to full day programs, OSSEP combines subject knowledge and inspiration to support individual teacher efforts to satisfy the education objectives of the STEM Next Generation Science Standards. Programs include Mars, Astronauts, Rocketry, UAV/Drones, Robotics, the Solar System, and more. OSSEP engages Oregon K-12 Tribal communities in NASA-related aerospace activities; programs formerly implemented under the Oregon Native Launch Program are now delivered by the OSSEP specialist. During FY2018, OSSEP reached over 500 students directly in the classroom, over 700 administrators, and over 1100 indirect students.

- Informal Education projects:

1) The OSGC Informal Education Award Program supported the K-12 outreach efforts of The Museum at Warm Springs and the Confederated Tribes at Warm Springs Seeds of Discovery interactive student engagement program. The program provided students with out-of-classroom learning activities in a museum setting, including robotics and mini-drone flights to engage and excite them about science learning and understanding. Delivered in May 2018, 175 4th grade students participated in the program, of which 34% are Native American, 34% are Hispanic, 48% are female, and 95% are economically disadvantaged. Data was reported in the FY2018 OEPM under Informal Education.

2) Disseminated NASA material, information, resources, and professional development opportunities via the OSGC website and social media avenues. The director served as a docent for Evergreen Aviation & Space Museum, contributed articles for the Museum newsletter, and served as advisor to the Museum's Education Advisory Board.

- Consortium Management:

1) OSGC hosted the 2018 annual affiliate meeting in Portland, OR at the Oregon Historical Society to honor the Oregon State University 150 Anniversary celebration. Representation from

95% of affiliate members were in attendance, in addition to members from the Tribal communities, Boeing, Solar System Ambassador, students, and OSGC leadership.

2) The OSGC director served as reviewer for other state space grant proposal programs; the OSGC associate director served on the National Space Grant Distinguished Service Award Selection Committee. Leadership attended the National Space Grant Meeting in Stowe, VT in September 2018 and will attend the National Council of Space Grant Directors' Meeting in Washington DC in February/March 2019.

3) Disseminated info and opportunities from NASA HQ and the National SG program to the affiliate network at the annual affiliate meeting and via email, the OSGC website, and social media avenues.

4) Maintained the OSGC website and social media with current OSGC/NASA program information, research and education opportunities, resources for students and educators, and other relevant news and updates.

5) Utilized the EPSS automated longitudinal tracking system to track OSGC direct funded and direct student participants and measure the percentages of students entering the STEM aerospace workforce. The system collects student demographic data and information that is reported to NASA via Annual Performance Documents and OEPM.

E. PROGRAM CONTRIBUTIONS TO NASA EDUCATION PERFORMANCE GOALS:

Include summary data for the bulleted list below:

- **Diversity:**

OSGC maintains diverse management, faculty, institutions, student participants, and projects. The 21 consortium members include seven state higher education institutions, three private higher education institutions, eight community colleges, and three informal education institutions, representing all geographic locations of the state. The majority are active in the consortium. Every two years, a new Affiliate Associate Director is voted to serve as the voice of the affiliates, providing an opportunity for all affiliates to participate in leadership and to attend regional and/or National Space Grant meetings. In FY2018, Eve Klopf, with Oregon Institute of Technology was voted into office serving November 2018 – November 2020. OSGC strives to make all student awards congruent with or in excess of diversity demographics. Of the 42 direct funded Fellowship/Scholarship students and 12 interns for FY2018, 56% are female, 30% are underrepresented minorities in STEM, 4% reported disabilities, and 4% reported military experience. Of the 95 direct student participants, 36% are female, 16% are underrepresented minorities in STEM, and 2% are veterans. The combined percentage of both direct funded and direct participants (149 total) is 43% female, 21% underrepresented minorities in STEM, 1% disabled, and 3% students with military experience.

- **Minority Serving Institution Collaborations:**

In FY2018, four Oregon institutions of higher education received the MSI designation and includes Lane Community College, Portland Community College, Portland State University and Pacific University. OSGC continues to provide significant funding via scholarships, fellowships,

internships, student experience team support, and faculty research to support MSI students and faculty. 43% of scholarship and fellowship awards and 17% of internships were awarded to students attending Minority Serving Institutions (MSI). 45% of higher education program funds were awarded to MSIs during this reporting period.

- **Office of Education Annual Performance Indicators:**

- o API 3.3.3: STEM-18-1 87
- o API 3.3.5: STEM-18-5 28

F. IMPROVEMENTS MADE IN THE PAST YEAR:

Implemented in FY2017, the STEM Community-College Opportunity for Research Experience or SCORE Program provides hands-on introductory research opportunities for community college students. The program is designed to provide students an opportunity to work together with a faculty mentor on a term-long research project in Science, Technology, Engineering, and Mathematics (STEM) or STEM education that goes beyond what is taught in the classroom. Projects may include individual components of a team or faculty research project. In the first year of the program, there were fewer proposals submitted/funded than expected. Based on affiliate feedback, eligibility requirements were adjusted to be more inclusive of community college students who may not be taking a full load of STEM-related courses but are on track to matriculate to a STEM program at a 4-year higher education institution. OSGC will continue to work with affiliates to assess the program and make any necessary improvements. The first SCORE Student Symposium to highlight the SCORE award recipients was held in June 2018. Feedback from students and affiliates confirmed the value and need of the hands-on program for community college students as an introduction and exposure to research culture.

Transitioned K-12 activities with Tribal communities from the Oregon Native Launch Initiative to the Oregon Space Science Education Program, OSSEP. The OSSEP specialist delivers NASA material and content through a host of workshops ranging from one hour to full day programs. Developed an OSSEP website to manage inquires/requests for classroom visits.

OSGC continues to develop relationships with the cultural centers at Oregon State University specifically the Lonnie B. Harris Black Cultural Center and the Native American Longhouse Eena Haws.

G. CURRENT AND PROJECTED CHALLENGES:

Continuing efforts will be made to engage consortium affiliates to promote STEM education throughout Oregon. The majority of affiliates are active and engaged; however, there are a few institutions that struggle to maintain involvement including student participation in programs, service to the consortium network, and/or attending required affiliate meetings. In an effort to strengthen the consortium, OSGC will assess each individual case over the next year to determine the best course of action for affiliates who are peripherally performing/participating.

H. PROGRAM PARTNERS AND ROLE OF PARTNERS IN PROJECT EXECUTION:

Higher Education Affiliate Institutions: All OSGC higher education institutions have the opportunity to participate in the OSGC Scholarship/Fellowship Program and all OSGC funded programs including the SCORE Program, NASA Center Internships, the UG Team Experience Program, the Student Symposium, and the Faculty Research Award Program.

Eastern Oregon University (EOU) – Teacher education; Affiliate Rep: Chemistry.

George Fox University (GFU) - Liberal arts and science education; partner in the South Metro-Salem STEM Partnership (SMSP); Affiliate Rep: Mathematics and Physics.

Lane Community College (LCC) - MSI - Technology, continuing education, math and science; LCC Aviation Academy Offers Flight Technology and Aviation Maintenance Technology programs and a pilot certification program; Affiliate Rep: Physics/astronomy.

Linn-Benton Community College (LBCC) - Robotics, mechatronics, and pre-engineering; Affiliate Rep: Engineering.

Oregon Coast Community College (OCCC) - Science, general studies; Affiliate Rep: Biology.

Oregon Institute of Technology (OIT) - Pro technical and health related fields; partner in the SMSP collaboration. Affiliate Rep: Computer Systems Engineering.

Oregon State University (OSU) – Lead institution - Engineering, earth, oceanic, and atmospheric science, radiation biology, ecology, biochemistry, pharmacy, and an aerospace minor; Affiliate Rep: Mechanical Engineering.

Pacific University (PU) – MSI - Liberal arts, health professions, and math and science education; Affiliate Rep: Physics.

Portland Community College Cascade Campus (PCC) – MSI - Adult education; Affiliate Rep: Portland Teachers Program

Portland Community College Rock Creek Campus (PCC) – MSI - Adult education including biology, veterinary, green energy, and aviation maintenance technology; Affiliate Rep: Science and geology.

Portland Community College Southeast Campus (PCC) – MSI – Aviation science, computer applications and office systems, and English for speakers of other languages; Affiliate Rep: STEM Center director.

Portland Community College Sylvania Campus (PCC) – MSI - Performing arts center, nationally recognized nursing and dental programs, and machine manufacturing technology program; Affiliate Rep: Physics.

Portland State University (PSU) – MSI - Internationally recognized for its urban planning, social work, environmental studies programs, and microgravity drop tower research and collaborations with NASA and the International Space Station; Affiliate Rep: Geology.

Southern Oregon University (SOU) – Criminology, natural sciences, and environmental science; Affiliate Rep: Physics.

Southwestern Oregon Community College (SOCC) - Serves the southern part of the Oregon coast. Supports student achievement by providing access to lifelong learning and community engagement in a sustainable manner; Affiliate Rep: Physics.

University of Oregon (UO) - Teaching and research university with over 200 academic programs; manages Pine Mountain Observatory in Bend, OR; Affiliate Rep: Physics.

University of Portland (UP) – Education and engineering; Affiliate Rep: Mechanical Engineering.

Western Oregon University (WOU) –Teaching Research Institute engaged in community-based projects; focuses on science and math education; partner in the SMSP collaboration; Affiliate rep: Physics.

Informal Education Affiliates:

Evergreen Aviation & Space Museum – Home of the Spruce Goose; its mission is to inspire, educate, promote, and preserve aviation and space history; participates in Higher Education Programs; partner in the SMSP collaboration.

Oregon Museum of Science and Industry (OMSI) – Hands-on science and technology museum; planetarium and exhibit halls with focus on natural science, industry, and technology; houses the state’s largest Science on a Sphere as well as smaller, mobile scale models. OSGC supports OMSI by providing letters of support to leverage the NASA network and obtain additional funding opportunities for the museum.

The Museum at Warm Springs – Tribal museum in central Oregon that brings three tribal communities together; partners with the local school district to offer hands-on science education utilizing expertise from within the community and around the state.