

Oregon Space Grant Consortium
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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 \$430,000 for fiscal year 2013.

PROGRAM GOALS

The Oregon Space Grant Consortium (OSGC) focuses on interdisciplinary and inter-institutional collaborations among the OSGC member institutions to strengthen the statewide STEM-based educational infrastructure and increase science literacy for Oregon students with an emphasis on authentic, hands-on student/mentor projects. 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) **Goal:** Contribute to the 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.
- 2) **Goal:** Utilize the state and national network of partners to disseminate NASA information and opportunities to students, teachers, and faculty to increase awareness of and participation in NASA-related research and educational opportunities.
- 3) **Goal:** Invest in a balanced suite of interdisciplinary research, education, and public service programs that reflect the priorities of the National Space Grant Program with a focus on scholarships, fellowships, internships, curriculum enhancement, and faculty development.

Outcome 1a: Diversity

- 1) **Goal:** Maintain diverse Consortium management, members, and projects.
Objectives: Achieve diversity levels in OSGC programs congruent with or in excess of state demographics (12.9% underrepresented minorities in STEM fields. Achieve female participation levels in OSGC programs of 40% congruent with NASA's Office of Education requirement.

Outcome 1b: Fellowship/Scholarship Program

- 1) **Goal:** Efficiently administer the OSGC fellowship/scholarship call and process payment awards in a timely manner.
Objectives: Implement an online scholarship application system that achieves ultimate efficiency and security for data collection, information transfer, and payment processing.
- 2) **Goal:** Encourage community college students to explore programs in STEM and STEM education fields of study.
Objectives: Award up to eight Community College Scholarships to students enrolled at OSGC affiliate community colleges.
- 3) **Goal:** Promote and retain undergraduate student enrollment in STEM and STEM education and Masters of Arts in Teaching (MAT) programs.
Objectives: Award up to fourteen 4-Year Institution Scholarships to undergraduate/MAT students enrolled at OSGC affiliate 4-year institutions.
- 4) **Goal:** Build collaboration between undergraduate students and faculty mentors working within a STEM discipline.
Objectives: Award up to four Undergraduate Research Scholarships to students performing research at an OSGC research based 4-year affiliate institution.
- 5) **Goal:** Provide scholarship opportunities to a diverse group of students.
Objectives: Competitively award the Undergraduate Scholarship Awards Program congruent with or in excess of the state demographics of 12.9% of underrepresented minorities in the STEM disciplines. Award scholarships to 40% female applicants, aligned with NASA's Office of Education requirement.

Outcome 1c: Research Infrastructure

- 1) **Goal:** Design research infrastructure programs to impact the Educate and Employ levels of NASA's Education Framework.
Objectives: Administer the OSGC Faculty Research Award Program call to engage early career faculty to work with NASA related research. Emphasize hands-on authentic science inquiry and mentorship components.
- 2) **Goal:** Encourage female and underrepresented faculty participation in OSGC supported NASA related research.
Objectives: Grant one science based Faculty Research Award to a female and/or underrepresented minority in the STEM fields.
- 3) **Goal:** Provide opportunities for students and faculty to present their research to their peers and potential students/faculty.

Objectives: Host the annual OSGC Student Symposium to highlight OSGC-supported student research projects. Engage and recruit potential students to participate in OSGC programs.

Outcome 1d: Higher Education

1) **Goal:** Support higher education programs that provide direct student support, encourage student involvement, and foster course enhancement and development based on the strengths of the affiliates and OSGC related research.

Objectives: Provide increased support for the Undergraduate Research Award Program including the University of Portland team participating in the NASA Robotic Mining Competition and the Oregon State University AIAA chapter to participate in the Design, Build, Fly Competition. Award one STEM Course Development Award to an OSGC affiliate faculty to encourage development of interdisciplinary courses designed around NASA research areas of interest as defined by the Mission Directorates. Provide web hosting and promotion of Volcano World, an online volcano information resource for students and educators. Provide support for OSGC students to participate in NASA center internship and academy opportunities. Support development of STEM centers to promote teacher professional development and access to industry and NASA resources.

2) **Goal:** Provide higher education opportunities to a diverse population of students.

Objectives: Support internship opportunities congruent with or in excess of state demographics for underrepresented minorities in the STEM fields (12.9%) and 40% female participation congruent with NASA Office of Education.

Outcome 2a: Pre-College

1) **Goal:** Support pre-college programs that provide educational professional development that brings NASA material and content to the classroom and promotes direct and diverse student involvement.

Objectives: Administer the call for the Informal Education Awards Program for institutions providing informal educational opportunities to the pre-college community.

Outcome 3a: Public Outreach/Informal Education

1) **Goal:** Provide information, resources, and networking opportunities to students, educators, and affiliates.

Objectives: Disseminate NASA material, resources, and professional development opportunities via the OSGC website, the online educator blog, and via social media including Facebook, Twitter, Pinterest, Dig, LinkedIn, and Google +.

2) **Goal:** Utilize informal education and public venues as a means to share faculty research and areas of expertise with students and general public.

Objectives: Serve as a docent/volunteer at OSGC informal education affiliates. Provide speakers for speaker series.

Consortium Management:

1) **Goal:** Administer and lead the grant efficiently and effectively, maintain good communication within the Consortium, participate in the national network, and deliver succinct and timely reporting to NASA's Office of Education.

Objectives: Host the OSGC Annual Affiliate Meeting. Attend the National Council of Space Grant Directors Meetings. Disseminate information and opportunities from NASA Headquarters and the National Space Grant Program network directly to affiliate representatives. Maintain the OSGC website with current OSGC and NASA program information, research and education opportunity announcements, resources for students and educators, and other general OSGC and NASA news and updates. Make annual affiliate site visits as permitted. Complete NASA contract reporting in a timely manner. Provide contact information for OSGC student awardees for the longitudinal tracking program.

PROGRAM/PROJECT BENEFIT TO OUTCOME (1, 2, & 3)

Student comments gathered through longitudinal tracking are below:

It's been my dream to work at NASA and to finally experience what it's like to work in a science- and research-related field. It's given me the opportunity to see what kind of work I really want to do with my degree. (AmandaMarie Adams - on 07/18/13, 2013 Glenn/USRP Internship, 2013 OSGC Internship Program, George Fox University Dept of Marketing and Communications - Web/Graphic Designer)

Receiving the OSGC scholarship gave me confidence in myself, and reinvigorated my commitment to my academic pursuits. It was the first scholarship I ever received and it has completely changed my life for the better. Thank you all for supporting STEM and space research. (Nicholas Carlstrom - on 04/12/14, 2013 OSGC Community College Scholarships, Portland Community College Sylvania Campus, Mathematics)

It opened my eyes to the opportunities that exist for students to engage in real science experiences while still an undergrad. This experience has motivated me to double down on my studies to get as exciting a job as I've been fortunate enough to be exposed to, and at the same time made my future in science seem more attainable by demystifying the reality of being a working scientist. No longer do I feel it is out of my reach-- I know I can do the work, and I've made friends that I felt I could be professional peers with, I've connected with mentors that can help me move forward in the field. My opportunity has really changed my outlook on what's possible, and I definitely have been encouraging my other cohorts in my science classes to apply. (David Coulter - on 02/26/14, 2013 Goddard Internship, 2013 OSGC Internship Program, Portland Community College, Mathematics/Physics, Pollinate - Software Developer)

These opportunities are linked to Outcome 1 and 2 by contributing directly to the development of the STEM workforce in disciplines needed to achieve NASA's strategic goals and by offering a student a progression of educational opportunities in the STEM disciplines.

PROGRAM ACCOMPLISHMENTS

Outcome 1: Contribute to the development of the STEM workforce in disciplines needed to achieve NASA's strategic goals: Employ and Educate

Outcome1a: Diversity

- 1) Maintained diverse Consortium management, member institutions, student participants, and projects.
- 2) At the time of reporting: 54% of internship opportunities and 55% of scholarships were awarded to female applicants; 15% of internship opportunities and 18% of scholarship awards were awarded to underrepresented minorities in excess of the state demographics of 12.9%.
- 3) Per request from the NASA Office of Education, OSGC submitted an Improvement Plan on December 13, 2013 to increase female participation to meet the current NASA Office of Education 40% female participation goal. The first step of the plan outlined a strategy to increase female and underrepresented minority's participation in team projects that receive funding from the OSGC Undergraduate Research Award Program. The Undergraduate Research Award Program call was modified to emphasize female and underrepresented involvement by broadening the call to include disciplines that have historically had more female participation and to strongly encourage partnerships with the local chapters of the Society for Women Engineers, SWE. The call introduces a program management approach to team projects, including program design, implementation, fiscal management, public relations, education, and outreach components. Examples of funded projects include the OSU AIAA Chapter Design, Build, Fly Competition, the University of Portland Lunabotics Team, and teams participating in the 2014 RockOn! Workshop. The second component of the Improvement Plan was to provide recruiting assistance to student teams by hiring a part-time temporary position to recruit female scholars. This position is held by a female in a STEM field, a member of SWE and is housed at the OSGC office.

Outcome 1b: Scholarship/Fellowship Program

- 1) OSGC implemented an online scholarship application and review system hosted by Education Programs Support Services, LLC. The online system effectively streamlined application submission, review, and processing of the scholarship program, eliminating the paper-based system and providing a secure, online submission hub for information transfer and payment distribution. Implementation of the system greatly reduced administration costs and time associated with administering the scholarship/fellowship program and significantly lowered overall percentage of OSGC funds allocated to management. The savings realized from utilizing the online scholarship program were transferred to fund OSGC Higher Education activities, relating directly to NASA's strategic plan. Fifteen of 19 affiliate institutions are eligible to participate in the scholarship program; all 15 institutions were represented in the application pool; students from 13 of the 15 eligible affiliate institutions received scholarship awards. Student, affiliate representative, and reviewer feedback indicated positive interaction with the system, an ease of use, and a much improved, streamline approach to the scholarship process.

- 2) Awarded eight Community College Scholarships, thirteen, 4-Year Institution Scholarships, and one Undergraduate Research Scholarships to students enrolled in OSGC affiliate institutions.
- 3) In the last reporting cycle, expenditure of FY11-12 scholarship funds was delayed as a result of the new application system; both FY11-12 and FY12-13 scholarship funds were awarded simultaneously and are reported in this reporting cycle. Of the combined FY11-12 and FY12-13 Scholarship Awards, 55% were awarded to females, 18% were awarded to underrepresented minorities in the STEM fields.

Outcome 1c: Research Infrastructure

- 1) Funded student research, mentored by Dr. Jack Higginbotham, Oregon State University, to support the project titled “The Effects of Cosmic Ray Radiation Induced Cataract Formation in Zebra Fish.” The project was awarded funding under the OSGC Faculty Research Award Program; the funded student is a female in Radiation Health Physics and has secured employment in the STEM field upon graduation.
- 2) Provided funding for the Evergreen Aviation & Space Museum’s Engineering Aviation and Space Academy (EASA)/McMinnville High School to develop STEM curriculum using unique NASA science and engineering assets, specifically the International Space Station. EASA collaborated with NanoRacks to launch student designed microgravity projects to be tested aboard the ISS.
- 3) 20% of the Associate Director’s time and 10% of the Director’s time is supported by funds from Research Infrastructure to implement research programs including administration duties and mentoring students.
- 4) Hosted the OSGC Student Symposium to highlight OSGC-supported student research opportunities. Twenty-four students participated in a poster session and made project presentations to an audience of students, faculty, media, and general public with an approximate attendance of sixty.

Research Infrastructure accomplishments relate to NASA’s Education Priorities and current areas of emphasis through hands-on student experiences in STEM disciplines, environmental science and global climate change research, diversity of institutions, faculty, and student participants, and support of innovative research infrastructure for faculty to focus on NASA priorities. (Outcome 1)

Outcome 1d: Higher Education

- 1) Over the past year, OSGC has been instrumental in assisting the development of the South Metro-Salem STEM Network (SMS STEM), a collaboration including four OSGC higher education affiliates and one informal education affiliate. The SMS STEM is a regional hub designed to increase access, excitement, and engagement of students in STEM courses and experiential learning, including NASA and Oregon Space Grant resources. One of the STEM center’s core strategies includes building the STEM network that will connect business and community STEM resources with regional teachers, students, and classrooms. OSGC provided support for the STEM Network Coordinator who is responsible for developing and implementing the center’s core strategies. The SMS STEM center immediately garnered the attention of state delegates, business, and industry committed to increasing STEM literacy in the

state of Oregon. OSGC leadership with the establishment of the SMS STEM center has been recognized by both the State of Oregon Department of Education, which has awarded \$750,000 to the center and by local industry, which has contributed an additional \$40,000. The National Space Grant Foundation played a pivotal role with the formation of the SMS STEM center by serving as the founding fiscal agent; a role that has now been transferred to the OSGC affiliate – Oregon Institute of Technology.

- 2) Supported the Oregon State University AIAA chapter to participate in the Design, Build, Fly competition as part of the OSGC Undergraduate Research Program.
- 3) At the time of reporting, supported 13 students to participate in 2014 NASA Academies or NASA Center student internships of which 54% are female and 15% are underrepresented in the STEM fields. At the time of this report, internship placements were still being made; OSGC anticipates funding up to an additional 12 students, of which 50% are female/underrepresented.
- 4) Provided support for the part-time temporary position to recruit female scholars as part of the OSGC Improvement Plan to increase female participation congruent with the NASA Office of Education requirement. This individual has successfully partnered with the Oregon State University Society for Women Engineers (SWE) to recruit an all female OSU team to participate in 2014 RockOn! Upon completion of the workshop, students will focus on establishing an American Society for Gravitational and Space Research (ASGSR) chapter at OSU.
- 5) Support four teams from OSGC affiliates to attend the 2014 RockOn! Workshop; all teams have encouraged participation of SWE students.
- 6) Support 20% of the Associate Director's salary to implement and execute Higher Education programs.

Higher Education accomplishments relate to NASA's Education Priorities and current areas of emphasis by utilizing hands-on student experiences and engagement with community colleges, higher education institutions, business, and industry, by promoting environmental science and global climate change research, and by supporting diversity of institutions, faculty, and student participants. (Outcome 1)

Outcome 1: Employ and Educate

- 53 students took next step in FY13 (SG participation supported from FY06-FY13 funds)
 - 10 are pursuing advanced degrees in STEM disciplines
 - 6 accepted STEM positions at NASA contractors
 - 17 accepted STEM positions in industry
 - 1 accepted a STEM position in K-12 academia
 - 5 accepted STEM positions in academia
 - 14 went on to positions in non-STEM disciplines

Outcome 2: Attract and retain students in STEM disciplines through a progression of educational opportunities for students, teachers, and faculty: Educate and Engage

Outcome 2a: Pre-College Education

- 1) Provide the Educator/GPS Loaner Program to the Oregon K-12 community, supported by the NASA AESP representative.

- 2) Provided the Education STEM Lending Library to support GPS and NASA content curriculum integration.
- 3) Provided K-12 community access to the OSGC-supported Higher Education Teams to conduct outreach activities.

Pre-College Education accomplishments relate to NASA's Education Priorities and current areas of emphasis through hands-on student experiences and engaging middle school teachers in hands-on curriculum enhancement capabilities through exposure to NASA scientific and technical expertise. (Outcome 2)

Outcome 3: Build strategic partnerships and linkages between STEM formal and informal education providers that promote STEM literacy and awareness of NASA's mission: Engage and Inspire

Outcome 3a: Public Outreach Programs

- 1) Disseminated NASA material, information, resources, and professional development opportunities via the OSGC website, educator blog, social media including Facebook, Twitter, Pinterest, Dig, LinkedIn, and Google +.
- 2) Provided organizational and promotional support for NASA initiatives including NES and AESP.
- 4) Provided speakers and promotion for public outreach activities/science pubs hosted by the Center for Sustainable Materials Chemistry.
- 5) The Director served as a docent for the Evergreen Aviation & Space Museum for an average of two days per month in FY2013. Activities included responding to public questions regarding space and aviation topics, writing articles for the Museum outreach newsletter, serve as an advisor to the Museum's Education Advisory Board.

Public Outreach accomplishments relate to NASA's Education Priorities and current areas of emphasis by engaging middle school teachers in hands-on curriculum enhancement capabilities through exposure to NASA scientific and technical expertise. (Outcome 3)

Consortium Management:

- 1) Hosted annual affiliate meeting at The Kah-Nee-Tah Resort in Warm Springs, OR in September 2013 attended by OSGC affiliates, NASA initiative representatives, OSGC scholars, and OSGC administration.
- 2) Promoted Catherine Lanier from Assistant Director to Associate Director. The OSGC Bylaws were amended to reflect this change.
- 3) Attended the National Council of Space Grant Directors Meeting in Charleston, South Carolina in October 2013.
- 4) Attended the National Council of Space Grant Directors Meeting in Washington, DC in February 2014.
- 5) The OSGC Director served on National Space Grant Program boards as nominated/elected.
- 6) The OSGC Director served as a technical reviewer for three other Space Grant Consortia and as an NASA EPSCoR reviewer.
- 7) The OSGC Associate Director served on the Space Grant National Distinguished Service Selection Committee.

- 8) Disseminated NASA information and opportunities via the OSGC website, Educator Resource Blog, and via social media resources.
- 9) Maintained the OSGC website and educator blog to be compliant with 508 accessibility codes.
- 10) Completed NASA contract reporting in a timely manner.
- 11) Collected demographics and information of OSGC student awardees for longitudinal tracking.

The following demonstrates the progress OSGC is making in achieving our program goals:

- Percentage of students whom have taken their next step and have been successfully tracked though their next step vs last year of SG support.
 - 82% for 2006
 - 89% for 2007
 - 96% for 2008
 - 90% for 2009
 - 87% for 2010
 - 94% for 2011
 - 83% for 2012
 - n/a for 2013 – all participants still enrolled
 - 92% for 2006-2013
- 86% of students significantly supported by went onto next steps in STEM disciplines

PROGRAM CONTRIBUTIONS TO NASA EDUCATION PERFORMANCE MEASURES

- **Student Data and Longitudinal Tracking:** Total awards = 50; Fellowship/Scholarship = 22, Higher Education/Research Infrastructure = 28; 4 of the total award represent underrepresented minority F/S funding. During the FY13 program year 10 students are pursuing advanced degrees in STEM disciplines, 6 accepted STEM positions at NASA contractors, 17 accepted STEM positions in industry, 1 accepted a STEM position in K-12 academia, 5 accepted STEM positions in academia, and 14 went on to positions in non-STEM disciplines. The remaining students have not yet received the degree that they were pursuing while the received their Space Grant award.
- **Diversity:** OSGC strives to maintain a diverse Consortium management, faculty, institutions, student participants, and projects within the Consortium portfolio. Of 19 affiliate institutions, 10 are four-year institutions, 5 are community colleges, and 4 are informal education institutions. Consortium management consists of program office staff (3 females, 1 male) and affiliate representatives (4 females, 16 males). Of the 20 affiliate representatives (one affiliate has co-representatives), one is Hispanic and the rest Caucasian. As outlined in the Improvement Plan submitted in December 2013, OSGC has put measures in place to increase the overall number of female awardees across OSGC programs. Female participation in the Higher Education Internship

program continues to increase. OSGC has been successful in making awards to underrepresented minorities in the STEM fields congruent with or in excess of state demographics across all programs.

- **Minority-Serving Institutions:** Per Mike Cherry of the NASA Office of Education, only one institution of higher education in Oregon, OSGC affiliate, Pacific University is designated as a minority serving institution; Pacific Islanders. To demonstrate OSGC support of minority serving institutions in Oregon, 20% of scholarship awards in each the 4-Year Institution and Undergraduate Research Scholarship categories will be awarded to students attending Pacific University. OSGC is exploring collaboration with Hawaii Space Grant to provide opportunities for underrepresented minority students in the STEM fields, particularly Pacific Islanders. Details of the program will be forthcoming in the next reporting cycle.
- **NASA Education Priorities:** OSGC's program portfolio was designed specifically to focus on the current areas of emphasis of NASA's education priorities as stated in the NASA Education Strategic Coordination Framework: A Portfolio Approach.
 - Authentic, hands-on student experiences in science and engineering disciplines – the incorporation of active participation by students in hands-on learning or practice with experiences rooted in NASA-related, STEM-focused questions and issues; the incorporation of real-life problem-solving and needs as the context for activities.
 - At the college/university level, OSGC provided support for several hands-on science and engineering experiences in FY13 that support NASA education priorities: One Graduate Research Fellowship, University of Portland participation in the NASA Robotic Mining Competition, Oregon State University AIAA chapter (8 students) participation in the Design, Build, Fly Competition, and ten NASA Center Internships
 - At the K-12 level, OSGC supported hands-on student experiences at the Evergreen Aviation & Space Museum Engineering Aviation and Space Academy developing payloads to launch to the ISS.
 - Diversity of institutions, faculty, and student participants (gender, underrepresented, underserved).
 - Members of OSGC include all 7 state higher education institutions, 3 private higher education institutions, one of which is an MSI, 5 community colleges, and 4 informal education institutions, representing all geographic locations of the state. All institutions are active members of the Consortium. OSGC awards represent the demographics of the state; of the 50 significantly funded students, 58% are female and 22% are underrepresented in the STEM fields.
 - Engage middle school teachers in hands-on curriculum enhancement capabilities through exposure to NASA scientific and technical expertise. Capabilities for teachers to provide authentic, hands-on middle school student experiences in science and engineering disciplines (see above).
 - OSGC focuses its efforts to engage K-12 educators to the South Metro-Salem region that is experiencing both the largest growth rate for underserved students in Oregon and the highest demand for STEM graduates to support

Oregon high tech industrial growth. These efforts will build on a decade of OSGC success of using NASA inspired, hands on learning experiences to captivate students and mentors and engage STEM teachers with "real life" experiences that mold their academic curriculum. The South Metro-Salem STEM Partnership is a group of 13 regional school districts, 2 community colleges, 3 universities, 5 community programs like FIRST Robotics, Evergreen Aviation & Space Museum, and 10 technology companies including Garmin AT, Intel, Mentor Graphics, and Autodesk. OSGC is using this partnership to insure the broadest distribution of NASA content and develop the partnership's mission, organizational structure and funding streams to be self-sustaining within three years. With success this model will be replicated and scaled to different regions within Oregon.

- Summer opportunities for secondary students on college campuses with the objective of increased enrollment in STEM disciplines or interest in STEM careers.
 - OSGC does not currently support summer opportunities for secondary students; efforts are focused on opportunities for higher education students.
- Community Colleges – develop new relationships as well as sustain and strengthen existing institutional relationships with community colleges.
 - Developing connections between OSGC community colleges, astronomy professors and instructors from 4-year institutions, and respective administrators to promote curriculum development, provide online opportunities and access to remote astronomical data to enhance the student community college experience with the goal of matriculating to a 4-year institution.
 - Provide student hands-on opportunities for community college students including NASA Center internships and RockOn! Workshop participation.
 - Provide 8 community college scholarships to students attending OSGC affiliated community colleges.
- Aeronautics research – research in traditional aeronautics disciplines; research in areas that are appropriate to NASA's unique capabilities; directly address the fundamental research needs of the Next Generation Air Transportation System (NextGen).
 - At the time of reporting, OSGC provided funds for 13 NASA Center internships to work directly with a NASA mentor on NASA-related projects.
- Environmental Science and Global Climate Change – research and activities to better understand Earth's environments.
 - In FY2013, OSGC supported the continued efforts of Portland Community College physics professor Toby Dittrich to provide global climate change workshops and public talks.
- Enhance the capacity of institutions to support innovative research infrastructure activities to enable early career faculty to focus their research toward NASA priorities.
 - In FY2013, OSGC limited funding opportunities for early career faculty to receive funding through the Faculty Research Award Program. Focus was

shifted to hands-on student research and higher education opportunities, STEM teacher continuing engagement, STEM aerospace curriculum development, and expanded STEM student research and engagement through the development of the new SMS STEM Center. Funding for the Faculty Research Award Program may increase in the future if additional funding is available.

IMPROVEMENTS MADE IN THE PAST YEAR

The Oregon Space Grant Consortium reports the following improvements in the past year:

- 1) Implemented the EPPS Application and Review system for the Scholarship and Fellowship program to increase the efficiency of the process and reduce administrative management costs and time associated with the Fellowship/Scholarship program.
- 2) Realized the South Metro-Salem STEM center vision by providing the funding source to hire the SMS STEM Network Coordinator to focus on teacher development and curriculum enhancement utilizing NASA content and resources.
- 3) Shifted focus from faculty research to higher education and research projects that offer authentic, hands-on student/mentor opportunities in the STEM disciplines such as student team opportunities and NASA center internship opportunities, resulting in increased student involvement.
- 4) Hired a part-time individual to recruit female scholars and engage with the SWE community.
- 5) Utilized social media to increase the visibility of Space Grant leading to greater participation in national and international competitions by OSGC-supported student teams.
- 6) Demonstrated an increase in the percentage of students going into STEM fields as reported in the longitudinal tracking data from FY06-FY13.

PROGRAM PARTNERS AND ROLE OF PARTNERS IN PROJECT EXECUTION

Higher Education Affiliate Institutions:

- **Eastern Oregon University (EOU)** - Located in eastern Oregon in La Grande, EOU is a small regional university with a focus on teacher education. EOU participates in the OSGC Scholarship and Internship Programs. Affiliate representative: Chemistry.
- **George Fox University (GFU)** - Nationally recognized Christian university, GFU is located in the heart of the Willamette Valley, 23 miles south of Portland and provides a focus on liberal arts and science education. GFU participates in the OSGC Scholarship and Internship Programs and is a partner in the SMS STEM Center collaboration. Affiliate representative: Mathematics and Physics.
- **Lane Community College (LCC)** - LCC is a learning-centered comprehensive community college located in Eugene, Oregon. The LCC Aviation Academy Offers Flight Technology and Aviation Maintenance Technology programs and a pilot certification program. The main campus focuses on technology, continuing education, math and science. LCC participates in the OSGC Scholarship Program. Affiliate representatives: Aviation and physics/astronomy.

- **Linn Benton Community College (LBCC)** - In close proximity to Oregon State University, LBCC offers associate degrees, transfer degrees and certificates for specific skills. LBCC focuses on robotics, mechatronics, and pre-engineering. LBCC participates in the OSGC Scholarship, Internship, and Undergraduate Research Award Programs. Affiliate Representative: Engineering.
- **Oregon Institute of Technology (OIT)** - Located in Klamath Falls in the southern part of the state with an urban campus in Wilsonville near Portland, OIT is the Pacific Northwest's only public institution of technology. OIT is founded on principles of excellence through hands-on knowledge and rigorous practical education, with a focus on pro technical and health related fields. OIT participates in the OSGC Scholarship, Internship, and Undergraduate Research Award Programs and a partner in the SMS STEM Center collaboration. Affiliate representative: Computer Systems Engineering.
- **Oregon State University (OSU)** - OSU is the lead Institution, located in Corvallis in the heart of the Willamette Valley. With a focus on engineering, OSU has programs in mechanical and electrical engineering, radiation biology, ecology, biochemistry, oceanography, and pharmacy that have been recognized nationally as top tier programs. OSU participates in the OSGC Scholarship, Internship, and Undergraduate Research Award Programs. Affiliate representative: Space Studies/science.
- **Pacific University (PU)** - One of the oldest schools in the west, PU's historic campus is located about halfway between the Oregon coast and Portland. PU is a liberal arts and health professions university with a focus on math and science education and committed to an ultimate personalized education. PU participates in the OSGC Scholarship and Internship Programs. Affiliate representative: Science Education.
- **Portland Community College Cascade Campus (PCC)** - PCC Cascade Campus has a small campus atmosphere in a diverse urban neighborhood in the heart of Portland. Cascade Campus focuses on adult education. PCC Cascade participates in the OSGC Scholarship and Internship Programs. Affiliate representative: Portland Teachers Program (PTP)
- **Portland Community College Rock Creek Campus (PCC)** - PCC Rock Creek is a spacious campus located 12 miles from downtown Portland in the high-tech corridor near Hillsboro. PCC Rock Creek has a diverse focus on adult education from biology to veterinary to green energy to aviation maintenance technology. PCC Rock Creek participates in the OSGC Scholarship and Internship Programs. Affiliate representative: Science and geology.
- **Portland Community College Sylvania Campus (PCC)** - PCC Sylvania is the largest of the PCC campuses, located on a wooded hillside between Tigard and Lake Oswego, just 10 minutes from downtown Portland. PCC Sylvania is known for its performing arts center, nationally recognized nursing and dental programs, and its machine manufacturing technology program. PCC Sylvania participates in the OSGC Scholarship and Internship Programs. Affiliate representative: Physics.
- **Portland State University (PSU)** - PSU is an urban campus located right in the heart of downtown Portland. PSU is internationally recognized for its urban planning, social work, and environmental studies programs. PSU gains great attention for their microgravity drop tower research and collaborations with NASA and the International

Space Station. PSU participates in the OSGC Scholarship, Internship, and Undergraduate Research Award Programs. Affiliate representative: Geology.

- **Southern Oregon University (SOU)** - Located in Ashland, Oregon in the southern part of the state, SOU offers smaller classes, deep cultural resources, and unique surroundings for a challenging, creative, and practical experience. SOU focuses on liberal arts including criminology, natural sciences, and environmental science. SOU participates in the OSGC Scholarship and Internship Programs. Affiliate representative: Physics.
- **University of Oregon (UO)** - Oregon's flagship institution, UO is a teaching and research university located in Eugene, Oregon. UO offers more than 200 academic programs and manages the Pine Mountain Observatory in Bend OR. UO participates in the OSGC Scholarship, Internship, and Undergraduate Research Award Programs. Affiliate representative: Physics.
- **University of Portland (UP)** - UP is a top-ranked, small independently governed Catholic university located in Portland. UP has a focus on education and engineering. UP participates in the OSGC Scholarship, Internship, and Undergraduate Research Award Programs. Participates in the NASA Robotic Mining Competition. Affiliate Representative: Mechanical Engineering.
- **Western Oregon University (WOU)** – Located in Monmouth, Oregon, WOU is home to the nationally renowned Teaching Research Institute, engaged in community-based projects. As an affiliate, WOU's focus is on science and math education and participates in the OSGC Scholarship Program. WOU participates in the OSGC Scholarship and Internship Programs and a partner in the SMS STEM Center collaboration. Affiliate representative: Physics.

Informal Education Affiliates:

- **Evergreen Aviation & Space Museum** – Home of the Spruce Goose, located in McMinnville, Oregon, Evergreen museum's mission is to inspire, educate, promote, and preserve aviation and space history. Evergreen participates in OSGC Higher Education Programs and is a partner in the SMS Stem Center collaboration.
- **Oregon Museum of Science and Industry (OMSI)** – Located in Portland, OMSI is Oregon's premier hands-on science and technology museum. OMSI has three theatres, a planetarium, and exhibit halls with a focus on natural science, industry, and technology. OMSI is also the Oregon NASA Education Resource Center, and houses the states 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.
- **ScienceWorks Hands-On Museum** – Located in the southern part of the state, in Ashland, Oregon, ScienceWorks is a center with educational programs for both students and educators including workshops, lectures, and science camps.
- **The Museum at Warm Springs** – Located in central Oregon, bringing three tribal communities together, the Museum at Warm Springs is a tribal museum that partners with the local school district to offer hands-on science education utilizing expertise from within the community and around the state.

- **The National Space Grant Office requires two annual reports, the Annual Performance Data Report (APD) and the Office of Education Performance Measurement System (OEPM) report. The former is primarily narrative and the latter data intensive. Because the reporting timeline cycles are different, data in the two reports may not necessarily agree at the time of report submission. OEPM data are used for official reporting.**