The National Space Grant Office requires two annual reports, the Annual Performance Data Report (APD – this document) 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.

Wyoming Space Grant Consortium
Lead Institution: University of Wyoming
Director: Dr. Paul Johnson
Telephone Number: 307-766-2862
Consortium URL: http://wyomingspacegrant.uwyo.edu/
Grant Number: NNX10A095H

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 Wyoming Space Grant Consortium is a Capability Enhancement Consortium funded at a level of $430,000 for fiscal year 2014.

PROGRAM GOALS

Outcome 1a: Diversity

1. **Goal:** Achieve a level of diversity in WY NASA Space Grant Consortium (WSGC) that represents the demographics regarding diversity in Wyoming. **Objectives:** Maintain higher diversity levels than those of the State (12%) or college level (8%).
2. **Goal:** Further develop relationships with underrepresented minority groups and Minority Serving Institutions in WY and outside of the State. **Objectives:** Work with the University's Multicultural Affairs Office to create outreach opportunities. Develop a relationship with Wind River Tribal College through collaboration and communication to provide funding opportunities for Native American students and teachers. Promote WSGC programs and space science awareness through local Hispanic radio station. Develop a relationship with Winston-Salem State University (WSSU), a HBCU; this would benefit both organizations and increase research opportunities for students and faculty.

Outcome 1b: Fellowship/Scholarship

1. **Goal:** Increase and improve opportunities for research experience and internships for graduate and undergraduate students. **Objectives:** Provide internships and student research opportunities to WY students. Explore internship opportunities with additional aerospace, technology, and STEM-related industries in WY.
2. **Goal:** Encourage and retain college students in STEM majors. **Objectives:** Establish an annual symposium for faculty, fellows, interns, and scholarship recipients to connect, network, and discuss opportunities within STEM majors, graduate programs, fellowships, and careers.
3. **Goal:** Maintain the diversity in fellowship/scholarship programs to greater than or equal to the demographics of enrolled higher education students in the State of WY. **Objectives:** Encourage diversity within programs by instituting seminars in collaboration with the Multicultural Affairs Office and by establishing relationships with Minority Serving Institutions.
4. **Goal:** Recruit community college students to get involved in Undergraduate Research Fellowships and WSGC programs. **Objectives:** Provide access to fellowship and scholarship information for all students in WY by increasing the affiliates to include each institution of higher education. Advertise opportunities for students at the CC's, such as the CC STEM and CC Transfer Scholarships and Undergraduate Research Fellowships.
5. **Goal:** Support STEM workforce development in WY through real-life, hands-on experiences. **Objectives:** Provide internships and student research opportunities to WY students.

Outcome 1c: Research Infrastructure

1. **Goals:** Increase awareness of and continue to develop Research Infrastructure programs. **Objectives:** Provide infrastructure funding, especially seed grants, to faculty that have the potential to develop into larger funded research projects. Fund faculty research that will be likely to develop substantial projects of NASA interest. Inform researchers of available WSGC and external NASA opportunities by providing updates on NASA solicitations and other funding opportunities through e-blasts to students, faculty, and affiliates. Support Undergraduate Research Day in Laramie. Provide travel funding for faculty or students to present at NASA or other scientific conferences.
2. **Goals:** Build partnerships between industry, government, and academia. **Objectives:** Develop new and stronger partnerships with industry, government, and academia to create internships and hands-on research opportunities.
3. **Goals:** Develop the interdisciplinary nature of the Research Infrastructure program. **Objectives:** Bring speakers to WY to talk about their research in NASA supported areas. Emphasize focus on interdisciplinary proposals.

Outcome 1d: Higher Education

1. **Goals:** Increase opportunities in STEM education at the college level. **Objectives:** Increase the number of Faculty Education Enhancement Grants.
2. **Goals:** Expose students to scientific research and hands-on experiences to engage their interest and encourage workforce development. **Objectives:** Encourage development of new college-level courses and provide support for courses that provide hands-on student experiences, such as RockOn or BalloonSat courses.

3. **Goals:** Create additional opportunities for STEM teacher training and in-service professional development. **Objectives:** Provide funding for in-service teacher professional development related to RockOn or Balloon Sat programs. Encourage pre-service teacher training at the Casper Planetarium summer Astronomy Workshop and after-school teacher training program.
4. **Goals:** Further develop relationships with underrepresented students and Minority Serving Institutions. **Objectives:** Partner with the Multicultural Affairs Office to institute seminars and develop relationships with Minority Serving Institutions.

Outcome 2a: Precollege Education

1. **Goals:** Increase interest in STEM majors and careers. **Objectives:** Continue to support and grow Women in Science (WIS). Provide support to AstroCamp in Laramie, WY—a 10-day science and astronomy camp for middle-school students and teachers by providing teacher professional development. Encourage teacher involvement in robotics programs through funding opportunities. Provide support and funding for State Science Fair. If appropriate, WSGC will partner with various state entities to develop a NASA Aerospace Scholars program for WY.
2. **Goals:** Inform students and families about opportunities in STEM education and research. **Objectives:** Provide information about WSGC programs and activities to libraries, museums, science centers, WY Science Teacher Association, and online.
3. **Goals:** Distribute NASA and STEM resources to WY teachers and students. **Objectives:** Refurbish, update and create new Space Trunks. Increase awareness and support for the WY NASA Educator Resource Center (ERC) through funding & advertisement. Support teacher involvement in STEM-related events or workshops, and provide funding for classroom materials.

Outcome 3a: Informal Education

1. **Goals:** Increase museum outreach and partnerships. **Objectives:** Develop a portable Space Shuttle display for traveling exhibits. Provide funding for institutions to develop STEM-related displays. Encourage affiliates to create one program a year onsite for regional activities.
2. **Goals:** Establish new relationships with informal science education institutions in WY. **Objectives:** Establish relationships with Astronomy Clubs to offer support for events. Partner more closely with informal education facilities to offer hands-on space science activities.

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

OUTCOME 1

Graduate Research Fellowships – In 2014, five graduate fellowships were awarded.

Undergraduate Research Fellowships – Space Grant funded a total of 18 students for undergraduate research fellowships in 2014 (Spring, Fall; 2 awards went to engineering teams).

Community College STEM Scholarships – The number of community college student awardees in 2014 is 43: 29 women (67%) and two underrepresented minorities (5%).

Community College Transfer Scholarships – Six scholarships were awarded to STEM students transferring to the University of Wyoming (the only 4-year university in the state) from Wyoming community colleges.

Student Internships – In 2014, no students were placed in internships at NASA Centers.
Student NASA Rover Competition – The University of Wyoming did not compete in the NASA Rover Competition this year. In its place, we supported two senior design projects involved in team competitions: a NASA Robo Opps and Ebaja team. Seven students from UW worked on these projects this year for their senior design project and were very successful. These projects simulate a real-life scenarios, incorporating multiple aspects into a design. (Students included above under Undergraduate Research Fellowships.)
Faculty Research Initiation Grants - Three grants were awarded to faculty at the University of Wyoming, and one grant was awarded to a faculty member at Central Wyoming College. Two grants went to female faculty members.
Speaker Series – In 2014, WSGC helped sponsor several speakers at the University of Wyoming for UW Department of Physics & Astronomy Colloquia.
Undergraduate Research Day - WSGC co-sponsors this campus-wide event, which was held on May 2, 2015 to showcase undergraduate research done at UW and Wyoming community colleges. Most WSGC Undergraduate Research Fellows presented their research at the event. Attendance was close to 300 students. WSGC also hosts an event in partnership with the NIH INBRE program on campus the evening before UG Research Day for community college students and faculty attending. This year, 86 community college people attended the pizza dinner and science tour.
Travel Grants for Scientific Conferences – WSGC awarded 17 travel grants this year to students traveling to scientific conferences, science competitions, or engaged in research. This is great experience for students to present their work at national conferences or events.
Faculty Education Enhancement Grants - Two grants were provided to support faculty members in developing new college courses in STEM fields. Particular interest was given to interdisciplinary courses. This year all awards went to community college faculty, one faculty member at Casper College and one faculty member at Central Wyoming College.
Student Satellite Building - In 2014, Space Grant started a statewide balloon satellite program. To date we have completed 9 launces at schools across the state and have two more launches planned for this summer. For each launch students design their own payloads and YouTube videos are created of the events.
Astronomy Workshop for Pre-service Teachers – The astronomy workshop held at Casper College is a collaboration between Casper College and the Casper Planetarium. The workshop provides professional development opportunities for pre-service middle and high school STEM teachers. During the school year, pre-service teachers continue their training by participating in an afterschool science club. In 2014, two pre-service teachers were funded.
Student Organizations – Funding was provided to the new WiMSE RSO at UW for meeting expenses.
Minority Serving Institutions - During FY2014, WSGC partnered with JSU, a HBCU, to provide summer research fellowships for two students at UW.
OUTCOME 2
Teacher Educational Resources – In 2014, the Space Trunks were shipped out 14 times to schools throughout the State. Ten STEM-related events were sponsored for teachers in WY, including a NASA Lunar Certification Workshop for 30 teachers. Space Grant also

participated in the Wyoming Science Teacher Association meeting held in Casper, WY and participates in the Wyoming Afterschool Alliance programs. In addition, Space Grant provided a summer professional development workshop for close to 30 in-service teachers, led by NASA-STEM Educator Professional Development Specialist, Tony Leavitt in partnership with the UW Science Posse, an NSF GK-12 funded program, and the UW Art Museum.

Wyoming Astrocamp for Teachers – Space Grant supports the Exxon Mobile Bernard Harris Summer Science Camp (Wyoming Astrocamp) by providing administrative help and teacher stipends for middle and high school STEM teachers instructing at the camp. Teachers work with UW faculty to develop curriculum and learn about astronomy research during the camp. Two teachers were supported in FY2014.

Robotics Competition Support – In FY2014, WSGC supported 10 robotics teams/events from across the state. This support provided funding for the FIRST LEGO League State Competition, and travel and supplies for teams.

NASA Educator Resource Center Support – In FY2014, WSGC did not provide funding to the NASA ERC. All of the NASA materials available at the ERC are now available to teachers throughout WY through the UW Library system.

Women in Science - In May 2015, WSGC will host the 16th annual Women in Science Conference at the UW campus. The conference is designed to increase interest in science and technology careers and promote a positive image of science careers for youth. It also provides role models for young women and gives them information about college. Close to 475 students, 30 teachers, and 35 presenters will participate in this year's event.

State Science Fair - WSGC supports science fair and provides awards to NASA related projects. This year, close to 400 students attended State Science Fair and 11 NASA special awards were given out.

NASA Aerospace Scholars Program – WSGC has decided not to pursue a NASA Aerospace Scholars Program at this time. The Space Grant contact and partner at the WY Department of Education left his position, making organization and funding of the program more difficult.

OUTCOME 3

Museum/Library/Planetarium Support – In FY2014, WSGC provided funding for two programs at the Casper Planetarium, one of our informal education affiliates.

PROGRAM ACCOMPLISHMENTS

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

Goal: Increase and improve opportunities for research experience and internships for graduate and undergraduate students.

- Eighteen undergraduates were funded to work on research projects through Undergraduate Research Fellowships (Spring and Fall; two teams). Five graduate students were given graduate assistantships to work on research projects through Graduate Research Fellowships. Two students from HBCUs participated in summer research fellowships.

Goal: Encourage and retain college students in STEM majors.

- Information was distributed to encourage students to apply for fellowships and scholarships through e-mails, the website, public radio announcements, and posters. Longitudinal tracking of student awardees continues.
- Regular correspondence was maintained with all CC affiliates in addition to two consortium meetings this year. This year, one affiliate attended the National Space Grant meeting in DC and 8 affiliates attended the Western Regional Meeting in Boulder, CO with Space grant staff. Affiliates advertise programs at their colleges.
- Several networking lunches were held with undergraduate and graduate fellows, and transfer scholarship recipients.

Goal: Maintain the diversity in fellowship/scholarship programs to greater than or equal to the demographics of enrolled higher education students in the State of WY.

- The Multicultural Affairs Office and WiMSE listserv publicize our opportunities.
- Out of 74 fellowship and scholarship recipients awarded this year 51% were female and 8% were from underrepresented groups.
- Of the six Faculty Education and Research grant proposals funded, 50% of the awardees were female, and three awardees were community college faculty.

Goal: Recruit CC students to get involved in Undergraduate Research Fellowships and WSGC programs.

- In 2014, six CC Transfer Scholarships were given to students transferring from a CC to UW. Five of the CC Transfer Scholarship recipients had received previous WSGC awards.
- CC affiliates advertise all WSGC programs and run their own CC STEM Scholarship programs. All CC's in WY are members of the consortium.

Goal: Support STEM workforce development in WY through real-life, hands-on experiences.

- As mentioned above, 18 undergraduates received Undergraduate Research Fellowships, five graduate students received Graduate Research Fellowships, and two HBCU students participated in summer research fellowships. All of these students were involved in hands-on research and/or real-life engineering experiences.

Goals: Increase awareness of and continue to develop Research Infrastructure programs.

- Research grant opportunities were publicized through a variety of means, including: e-mail, webpage, social media, posters, and public radio announcements. Information on resulting publications and new proposals submitted is not available at this time.
- NASA Research Opportunities were publicized as they were received.
- 17 travel awards have been made to date in FY2014 to students presenting at scientific conferences, engaged in research, or attending student engineering competitions.

Goals: Build partnerships between industry, government, and academia.

- WSGC continues to work with WSSU and JSU, both HBCUs, to provide summer research fellowships for students underrepresented in science. UW and WSGC are also pursuing partnerships with Morehouse College, also an HBCU. Space Grant continues to partner with the WY Department of Education and WY

Afterschool Alliance, which has resulted in hands-on research and educational experiences for students and teachers.

Goals: Develop the interdisciplinary nature of the Research Infrastructure program.

- WSGC helped bring several speakers to Wyoming in FY2014.
- Research proposal reviewers were encouraged to rate projects that were highly interdisciplinary in nature as highest in the review process, and awards were made on that basis.

Goals: Increase opportunities in STEM education at the college level.

- Two Faculty Education Enhancement grants were made in 2014, which resulted in four updated courses.

Goals: Expose students to scientific research and hands-on experiences to engage their interest and encourage workforce development.

- Four updated courses were developed from Faculty Education Grants.

Goals: Create additional opportunities for STEM teacher training and in-service professional development.

- In FY2014, two pre-service teachers participated in the Astronomy Workshop at Casper College, which provides professional development opportunities for pre-service middle and high school STEM teachers. During the school year, the pre-service teachers continued their training by participating in an afterschool science club.
- In FY2014, WSGC supported teacher involvement in 10 STEM-related events, including a NASA Lunar Certification Workshop and pre-service teacher workshop at UW. WSGC also hosted a summer teacher workshop led by NASA-STEM Educator Professional Development Specialist, Tony Leavitt.

Goals: Further develop relationships with underrepresented students and Minority Serving Institutions.

- Space Grant has started a partnership with WSSU and JSU, both HBCUs. In summer 2010, five HBCU students participated in a summer research fellowship at the University of Wyoming under the mentorship of UW graduate students; 3 in summer 2011, 4 in summer 2012, and 2 in summer 2013, and 2 in summer 2014.
- WSGC continues to work with the Multicultural Affairs Office on campus and advertises all fellowship, scholarship, and grant opportunities in their weekly newsletter.
- WSGC continues to look for opportunities to partner with the Wind River Tribal College.
- Associate Director, Dr. Shawna McBride serves on the Strategic Diversity Initiatives Committee at UW, which promotes the goals listed above. WSGC has developed a new seminar series aimed at female students at UW, WiMSE. WiMSE has grown into a Recognized Student Organization (RSO) and Dr. Shawna McBride is the Faculty Advisor for the RSO.

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

Goals: Increase interest in STEM majors and careers.

- Attendance at the UW Women in Science Conference in May will be close to 475 students and 30 teachers. A Men in Science event will be held in Riverton, WY

with approximately 300 students and teachers (estimated 25% underrepresented from Wind River Reservation).

- WSGC also supports the Exxon Mobile Bernard Harris Summer Science Camp (Wyoming Astrocamp). The camp has grown to 48 student participants. WSGC supports teacher stipends for the camp.
- WSGC supported 10 robotics teams/events in 2014, providing teachers funding for supplies and travel.
- WSGC supported State Science Fair, giving out 11 NASA special awards.

Goals: Inform students and families about opportunities in STEM education and research.

- WSGC has a presence at many public events, including: State Science Fair, teacher conferences/workshops, and Women in Science conferences. All information about programs is available online. Through continued networking, several new partnerships have been developed (WY Afterschool Alliance, Tate Museum, Teton Raptor Center, and others) that will help to promote WSGC programs.

Goals: Distribute NASA and STEM resources to WY teachers and students.

- Use of the Space Trunks continues to be popular.
- In summer of 2014, WSGC hosted a teacher professional development workshop for close to30 in-service teachers led by NASA-STEM Educator Professional Development Specialist, Tony Leavitt, in partnership with the NSF GK-12 funded Science Posse and UW Art Museum.
- WSGC continues to support the NASA ERC on the UW campus. The collection of NASA materials is now cataloged, so people can search for items on the UW Library system. This resource is advertised at the Wyoming Science Teacher Association meeting.
- In FY2014, WSGC supported teacher involvement in 10 STEM-related events: 1) NASA workshop with Tony Leavitt, NASA ESP, for in-service teachers at the WSTA meeting ; 2) NASA workshop with Tony Leavitt, NASA ESP, for informal educators at the WYAA meeting; 3) NASA Lunar Certification workshop with Tony Leavitt, NASA ESP, at the University of Wyoming; 4) Casper Regional Science Fair; 5) Support for the NASA HUNCH team from Jackson, WY; 6) Support for a trip to Teton Science School for teachers and students from Beitel Elementary School; 7) Partial solar eclipse event at UW; 8) Workshops at Jackson WILD Science Festival; 9) Support for the Frontier Middle School STEM Club; and 10) Support for star gazing programs through WY Star Gazing in Jackson Hole, WY.
- NASA and STEM resources are also delivered through participation in the Wyoming Science Teacher Association Meeting and through the WY Afterschool Alliance.
- Associate Director, Dr. Shawna McBride is also now on the WYSTEM/UW P-16 STEM Advisory Committee, whose focus is to promote and coordinate all UW P-16 science outreach activities in Wyoming.

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***

Goals: Increase museum outreach and partnerships.

- WSGC supported two programs at the Casper Planetarium: 1) Support for an interactive workshop covering advanced visual effects in Blender at the Casper Planetarium, and 2) Travel support for the Casper Planetarium to provide professional development workshops through the American Planetarium Operators program. The Casper Planetarium won a "PlanIt" prize for their video "Exoplanets", which was used in the PD.

Goals: Establish new relationships with informal science education institutions in WY.

- WSGC Associate Director, Dr. Shawna McBride is on the Board of the Wyoming Afterschool Alliance. Through this partnership WSGC has direct access to afterschool programs in WY. As a result of this partnership, WSGC has developed an afterschool STEM program in Laramie, WY for k-12 students in partnership with the Greater WY Big Brothers Big Sisters and AmeriCorps program.
- We continue to work with the Casper Planetarium to support K-12 educational opportunities.
- Several informal education organizations participate in Women in Science, including the Teton Raptor Center, Denver Zoo, and Nature's Educators.

PROGRAM CONTRIBUTIONS TO NASA EDUCATION PERFORMANCE MEASURES

- **Diversity**: The members of our consortium include the University of Wyoming, all of the community colleges in Wyoming, industry partners, government partners, and K-12 educational partners. In addition, we have started partnerships with several HBCUs including Winston-Salem State University, Jackson State University, and Morehouse College. In FY 2014, we funded six faculty awards: 4 Faculty Research grants and 2 Faculty Education grants – 50% of the awardees were women and 50% of the awards went to community college faculty. No awards were given this year to faculty underrepresented in the sciences and this is due in large part to the lack of applicants who would fall into this category. In regards to the students funded in FY 2014, we provided funding for: 5 graduate students, 18 undergraduate research fellowships (Fall and Spring), 6 community college transfer students, 2 HBCU fellowships, and 43 STEM scholarships to students at community colleges, for a total of 74 awards. Of the 74 students funded, 51% were female and 8% were students underrepresented in the sciences.
- **Minority-Serving Institution Collaborations:** WSGC has started partnerships with WSSU and JSU, both historically black colleges and universities. In summer 2010, 5 HBCU students participated in a summer research fellowship at the University of Wyoming under the mentorship of UW graduate students. In summer 2011, 3 HBCU students came to WY, in summer 2012, 4 HBCU students came, in summer 2013 - 2 HBCU students participated in summer research fellowships, and in 2014 - 2 HBCU students participated in the program. In 2010 we developed a partnership with WSSU and in March 2013, Space Grant met with visitors from Jackson State University (JSU), including Dr. Pamala Heard, Director of the NASA Educators Resource Center at JSU. This expanded our HBCU partnerships, and we are now receiving summer fellowship applications from both WSSU and JSU students. The University of Wyoming has done several balloon satellite launch programs with students from

Morehouse College and we are working to bring undergraduate students from Morehouse to UW for summer research fellowships to follow up with these activities. This program is a collaboration among many organizations on campus, including WY NASA Space Grant, the UW School of Energy Resources, the UW Diversity Office, and NSF GK12 programs – it has been a great collaboration.

- **NASA Education Priorities:**
  - 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 level, WSGC provided several hands-on, research and engineering experiences for students in FY2014 related to NASA goals: 5 Graduate Research Fellowship, 18 Undergraduate Research Fellowship, and 2 HBCU Summer Research Fellowships.
    - At the K-12 level, WSGC also supports several activities that get students and teachers involved in hands-on activities including: our new balloon satellite program, State Science Fair, funding for robotics programs, Women in Science, AstroCamp, and by providing educational resources to teachers.
  - 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).
    - During FY2014, WSGC sent out Telescope, Rocket, GPS/GIS, and Alternative Energy Space Trunks containing NASA curriculum to K-12 STEM teacher in the state 14 times. WSGC also hosted several teacher professional development workshops with NASA-STEM Educator Professional Development Specialist, Tony Leavitt, reaching close to 150 pre-service, in-service, and informal educators. In total, WSGC supported 10 STEM activities for teachers in FY2014 to help teachers provide hands-on activities for students.
  - Summer opportunities for secondary students on college campuses with the objective of increased enrollment in STEM disciplines or interest in STEM careers.
    - On May 19, 2015, WSGC will host the 16th annual Women in Science conference at the University of Wyoming. This year we have close to 475 students (7-12th grade) registered to attend. This conference provides students the opportunity to visit a college campus and learn about careers in STEM.
    - In June 2015, WSGC will help with the Exxon Mobile Bernard Harris Summer Science Camp for middle school students. The 48 campers will stay in the UW dorms for 10 days and learn about research and careers in space-related areas. WSGC provides administrative help and teacher stipends for the camp.
  - Community Colleges – develop new relationships as well as sustain and strengthen existing institutional relationships with community colleges.

- All of the Wyoming community colleges are members of the WSGC. Each college has a representative that attends the WSGC Board Meeting in the Fall and Spring. The community colleges help to advertise WSGC programs to their students and faculty.
- Each college runs their own scholarship program for CC STEM students.
- In FY2014, 6 community college students received Community College Transfer Scholarships, 43 students received CC STEM scholarships, and 3 CC faculty members received Faculty Education Grants. One of our current undergraduate fellows was also a former recipient of a community college transfer scholarship.

- 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).
  - Three undergraduate research fellowship projects involved research into composite materials relevant to aeronautics.
- Environmental Science and Global Climate Change – research and activities to better understand Earth's environments.
  - In FY2014, WSGC supported 4 students and 2 faculty involved in environmental science and/or global climate change science: 1 undergraduate project, 3 graduate research projects, and 2 faculty research projects.
- Enhance the capacity of institutions to support innovative research infrastructure activities to enable early career faculty to focus their research toward NASA priorities.
  - In FY2014, WSGC provided 4 Faculty Research Initiation grants. These grants are intended as seed funding for early career faculty, faculty at community colleges, and faculty members making a dramatic departure from their current research. All of the research is directed at NASA goals and priorities. The seed funding is given to new faculty members or faculty changing their research direction to help them develop data that can then be used to apply for larger grants: NASA, NSF, NIH, etc.

IMPROVEMENTS MADE IN THE PAST YEAR

Associate Director, Dr. Shawna McBride serves on the Strategic Diversity Initiatives Committee at UW, which determines diversity goals for the University, helping to increase program diversity and diversity within the WY educational system. WSGC has partnering with the Science Posse, an NSF GK12 funded program, and the NASA-STEM Educator Professional Development Specialist program to provide several teacher professional development workshops, including a NASA Lunar Certification Workshop. Space Grant has started a new balloon satellite program for K-12 schools in the state and has completed 9 launches around the state in FY2014. Dr. Shawna McBride is helping to develop a WYSTEM K-14 STEM Engagement Office on campus to connect STEM, CTE, and afterschool programs throughout WY. Space Grant hosts a WiMSE seminar series to provide support and resources to undergraduate women in STEM at UW, which has expanded into a WiMSE Recognized Student Organization (RSO). Dr. Shawna McBride is the faculty advisor for the WiMSE RSO. Dr. Shawna McBride serves on the

planning committee for the Wyoming Science Teacher Association (WSTA) annual conference and Wyoming Afterschool Alliance conference planning committee. Dr. McBride has also organized precollege STEM outreach groups on campus to meet on a regular basis to discuss similar goals and needs, so programs can start to partner on marketing, evaluation, and other opportunities. Lastly, WSGC meets on a regular basis with other college-level STEM programs at UW who have similar goals, again so programs can develop collaborations. These programs include: NSF EPSCoR, NIH INBRE, the McNair Scholars Program, and MultiCultural Affairs.

PROGRAM PARTNERS AND ROLE OF PARTNERS IN PROJECT EXECUTION

- **University of Wyoming**: Four-year university. Location of the WSGC offices. Involved in Undergraduate and Graduate Fellowships, Faculty Research and Education Grants, NASA internships, and community college transfer scholarship.
- **Casper College**: 2-year community college. Involved in Undergraduate Fellowships, Faculty Research and Education Grants, community college transfer scholarships, and offer locally-run community college STEM scholarships.
- **Central Wyoming College**: 2-year community college. Involved in Undergraduate Fellowships, Faculty Research and Education Grants, community college transfer scholarships, and offer locally-run community college STEM scholarships.
- **Eastern Wyoming College**: 2-year community college. Involved in Undergraduate Fellowships, Faculty Research and Education Grants, community college transfer scholarships, and offer locally-run community college STEM scholarships.
- **Laramie County Community College – Laramie County Campus**: 2-year community college. Involved in Undergraduate Fellowships, Faculty Research and Education Grants, community college transfer scholarships, and offer locally-run community college STEM scholarships.
- **Laramie County Community College – Albany County Campus**: 2-year community college. Involved in Undergraduate Fellowships, Faculty Research and Education Grants, community college transfer scholarships, and offer locally-run community college STEM scholarships.
- **Northern Wyoming Community College District – Sheridan College**: 2-year community college. Involved in Undergraduate Fellowships, Faculty Research and Education Grants, community college transfer scholarships, and offer locally-run community college STEM scholarships.
- **Northern Wyoming Community College District – Gillette College**: 2-year community college. Involved in Undergraduate Fellowships, Faculty Research and Education Grants, community college transfer scholarships, and offer locally-run community college STEM scholarships.
- **Northwest College**: 2-year community college. Involved in Undergraduate Fellowships, Faculty Research and Education Grants, community college transfer scholarships, and offer locally-run community college STEM scholarships.
- **Western Wyoming Community College**: 2-year community college. Involved in Undergraduate Fellowships, Faculty Research and Education Grants, community college transfer scholarships, and offer locally-run community college STEM scholarships.

- **Embry-Riddle Aeronautical University**: military college, offers some undergraduate classes and some master's level classes. Involved in Faculty Research and Education Grants.
- **90th Space Wing, F.E. Warren Air Force Base**: air force command located in Wyoming, includes the Inter-Continental Ballistic Missile Museum and interest in rocketry informal education programs.
- **Wickman Spacecraft and Propulsion, Co.**: industry affiliate, they design and produce small solid rocket motors used in some defense missiles and other satellite programs.
- **Casper Planetarium**: informal education affiliate, associated with the K-12 school district in Casper, WY, hold astronomy events for the general public, workshops for teachers and students.