Wyoming NASA Space Grant Consortium
University of Wyoming
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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 Wyoming NASA Space Grant Consortium is a Capability Enhancement Consortium funded at a level of $660,000 for fiscal year 2010.

## 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, OR 3)

***OUTCOME 1***

**Graduate Research Fellowships** – In 2010, seven graduate fellowships were awarded (plus one from NASA EPSCoR). Trent Mankowski, one of the fellows, is also the NASA Student Ambassador for WY this year and has done several talks about space science around the State. Trent was also funded as an undergraduate through an Undergraduate Research Fellowship in 2008. Levi Lowder, another graduate fellow, has had great success in his space grant funded research. His work has resulted in two patent applications and meetings with the National Renewable Energy Laboratories (NREL) to discuss the use of his techniques in biofuel technology.

**Undergraduate Research Fellowships** – Space Grant funded a total of 13 undergraduate research fellowships in 2010 (Spring and Fall). Tracey Wilcox, a student at Central Wyoming Community College, was awarded an Undergraduate Research Fellowship this year for her work on extremophiles (bacteria living in hot springs). She presented her research at the Geological Society of America annual meeting. Tracey plans to transfer to the University of Wyoming next fall to complete her degree. Noah Hull has been supported by WSGC for several years. His work in studying photosynthetic bacterium for long-term space flight is very topical. Noah has spent the last two summers at the NIH campus doing student internships and plans to pursue his Ph.D. upon graduation. Several other undergraduate fellows have been accepted into graduate school for Fall 2011 – Eben Johnson, Andrea Noakes, Joe Reed, and Bob Shriver.

**Community College STEM Scholarships** – The number of community college student awardees in 2010 was 44 total: 22 were women (50%) and three were underrepresented minorities (7%).

**Community College Transfer Scholarships** – Five scholarships were awarded to STEM students transferring to the University of Wyoming (the only 4-year university in the State) from Wyoming community colleges. Shana Wolff received a transfer scholarship and was also the recipient of a CC STEM Scholarship from Laramie County CC in 2007, 2008, and 2009 before transferring to UW.

**Student Internships** – Five Wyoming students participated in internships at NASA Centers in 2010 – two at JSC, one at JPL, one at MSFC, and one at the NASA Academies. Jamie Comrie (JSC) was also awarded an Undergraduate Research Fellowship this fall to complete his senior engineering design project. Charles Galey (JPL) participated in the Rocket Science Class and launched a rocket in 2009 at Wallops.

**Student Moonbuggy Competition** - Five students from UW participated in the Moonbuggy competition this year. The Moonbuggy was constructed for their Engineering Senior Design class and UW placed in the top 20 at the competition in April.

**Faculty Research Initiation Grants** - Five grants were awarded to faculty at the university or community college level to conduct new research.

**Speaker Series** – In 2010, WSGC helped sponsor three speakers: 1) Jeff Shields from the University of Nebraska spoke at the UW Department of Physics & Astronomy Colloquia in March 2011; his talk was entitled *Welcome to the Small Time: Structure and Properties of Nanoclusters;* 2) Kenneth Chang from the New York Times spoke on *The Future of US Space Exploration*, for the UW Readership Program in Oct. 2010, and 3) Joyce Winterton (NASA) spoke at the Wyoming's Women Expo in Gillette, WY in Fall 2010.

**Undergraduate Research Day** - WSGC co-sponsors this campus-wide event, which will be held on April 30th, 2011 to showcase undergraduate research done at UW and Wyoming community colleges. Most WSGC Undergraduate Research Fellows will present their research at the event. Attendance is usually around 300 students.

**Travel Grants for Scientific Conferences** – Nine travel grants have been awarded this year to students traveling to scientific conferences or science competitions. This is great experience for students to present their work at national conferences or event.

**Faculty Education Enhancement Grants** - Three grants were provided to support faculty members at UW and Wyoming community colleges to develop new college courses in STEM fields. Particular interest was given to interdisciplinary courses.

**Student Satellite Building – Rocket Class** - In 2010, Space Grant Director Paul Johnson, hosted a year-long Rocket Science class with eight enrolled students. Students designed a rocket payload that will be launched at Wallops in summer 2011.

**Astronomy Workshop for Pre-service Teachers** – The astronomy workshop held at Casper College is a collaboration between the college and 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 2010, two pre-service teachers were funded.

**Student Organizations** – No funding has been given to student organizations as of yet.

**Minority Serving Institutions** - During FY2010, WSGC partnered with WSSU, a HBCU to provide summer research fellowships for five WSSU students at UW. Funding was provided by the no-cost extension of NASA Space Grant funds from FY2009, so students were reported in FY2009.

***OUTCOME 2***

**Teacher Educational Resources** – In 2010, the Space Trunks were shipped out 16 times to schools throughout the State. Space Grant has developed a new Telescope Trunk and is working on a new Wind Energy Trunk. In addition, Space Grant provided 14 in-service middle and high school STEM teachers

with scholarships for tuition for a M.S. in Teaching course with a focus in astronomy through UW's College of Education. Five STEM-related events were sponsored for teachers in WY.

**Wyoming Astrocamp for Teachers** – Space Grant supports the Exxon Mobile Bernard Harris Summer Science Camp (Wyoming Astrocamp) by providing 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.

**Robotics Competition Support** – In FY2010, WSGC supported two robotics teams from Casper, WY and one team from Laramie, WY. One of the Casper teams is going to the International FIRST Tech Challenge competition and the Laramie team is going to the National LEGO League competition in May at LEGOLAND.

**NASA Educator Resource Center Support** – In FY2010, WSGC provided funding to the NASA ERC to update some of their materials, including DVDs. During 2010, the ERC cataloged all of their NASA curriculum holdings and made them available to teachers throughout WY through the UW Library system.

**Women in Science** - In May 2011, WSGC will host the 12th 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. There are currently around 350 students registered for this year's event.

**State Science Fair** - WSGC supports science fair and provides awards to NASA related projects. This year, 357 students attended State Science Fair and 14 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 FY2010, WSGC obtained a Space Shuttle tile and will continue to acquire Space Shuttle artifacts for a traveling NASA display. We are currently working with the Rocket Science Team to install a Rocket – Space Science display in the UW Geology Museum and update a meteorite display. WSGC also provided funding to the Casper Planetarium for a technology update to their system. WSGC purchased a telescope for the Fremont Co. Public Library in Riverton, WY to start a telescope lending program with associated activities (star parties, etc.).

## PROGRAM ACCOMPLISHMENTS

***OUTCOME 1***

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

- Thirteen undergraduates were funded to work on research projects through Undergraduate Research Fellowships (Spring and Fall). Seven graduate students were given graduate assistantships to work on research projects through Graduate Research Fellowships (plus one from NASA EPSCoR).
- Five students spent the summer at a NASA Center for an internship: two at JSC, one at JPL, one at MSFC, and one in the NASA Academy program. An additional four students participated in internships at a local software engineering company, Firehole Composites, funded through an ESMD grant.
- Five students received fellowships to design and fabricate this year's Moonbuggy and eight students enrolled in the Rocket Science course at UW, designing a rocket payload.

**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, posters, and career fairs. Longitudinal tracking of student awardees continues.
- Regular correspondence was maintained with all CC affiliates in addition to two consortium meetings per year. This year, three affiliates attended National Space Grant meetings. Affiliates advertise programs at their colleges.
- Several networking lunches were held with undergraduate and graduate fellows, transfer scholarship recipients, Moonbuggy and Rocket teams, and student interns.
- A luncheon during Undergraduate Research Day has been discussed.

**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 publicizes our opportunities in their newsletter.
- Out of 74 fellowship and scholarship recipients 32 were female (43%) and six were from underrepresented groups, including disabled students (8%). Out of five student interns, one was female (20%).
- Of the 18 Faculty Education and Research grant proposals we received, one was from a female faculty member (6%), two were from underrepresented groups (11%), and two were Asian (11%). Of the eight recipients of the Faculty Education and Research grants there was one underrepresented faculty member (13%) and one Asian faculty member (13%).

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

- In 2010, WSGC had a student from Central Wyoming College receive an Undergraduate Research Fellowship. A student from Western Wyoming Community College completed an internship at JSC. Five CC Transfer Scholarships were given to students transferring from a CC to UW.
- CC affiliates advertise all WSGC programs and run their own CC STEM Scholarship programs. This year WSGC added Northwest College to the Consortium, so now 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, 13 undergraduates received Undergraduate Research Fellowships, seven graduate students received Graduate Research Fellowships, five students did internships at NASA Centers, four students participated in local internships (funded by ESMD), five students were part of the Moonbuggy Team, and eight students were enrolled in the Rocket Science Course. 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, posters, and public radio announcements. A total of 14 proposals were received in FY2010 (up from nine in 2009) and five awards were made. Information on resulting publications and new proposals submitted is not available at this time.
- NASA Research Opportunities were publicized as they were received.
- Nine travel awards have been made to date in FY 2010 to students presenting at scientific conferences or attending student engineering competitions.

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

- Space Grant continues to work with Firehole Composites, a local software engineering company based in Laramie, WY. A new relationship with WSSU, a HBCU, has been developed which has been very productive. During the 2010 Summer of Innovation, Space Grant partnered with the WY Department of Education and are continuing that partnerships to develop programs for 2011. All of these partnerships have resulted in hands-on research and educational experiences for students and teachers.

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

- WSGC has helped bring three speakers to Wyoming in FY2010 thus far.
- Research proposal reviewers felt that 40% of faculty research proposals funded in FY2010 were interdisciplinary in nature.

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

- Three Faculty Education Enhancement grants were made in 2010, which resulted in three new or updated courses.

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

- Three new courses were developed from Faculty Education Grants and the Rocket Science course continues to be a popular class.

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

- WSGC has been in contact with StratoStar, a company that provides training to start balloon satellite programs, and plans to invite them to WY in Fall 2011 for a balloon satellite workshop.
- In 2010, 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.

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

- Space Grant has started a partnership with WSSU, a historically black college in North Carolina. In summer 2010, five WSSU students participated in a summer research fellowship at the University of Wyoming under the mentorship of UW graduate students.
- WSGC continues to work with the Multicultural Affairs Office on campus and advertises all fellowship, scholarship, and grant opportunities in their weekly newsletter.
- WSGC has planned a trip to the Wind River Tribal College in late Spring.

***OUTCOME 2***

**Goals:** Increase interest in STEM majors and careers.

- Attendance at the UW Women in Science Conference in May is expected to be 350 students and 35 teachers. Of the student registrations, 95% are female and 15% are from underrepresented groups. A Women in Science event was also held in Riverton, WY with approximately 300 students and teachers (estimated 25% underrepresented).
- WSGC also supports the Exxon Mobile Bernard Harris Summer Science Camp (Wyoming Astrocamp). The camp has grown from around 20 students to 48 students in summer 2010 (50% female, 15% underrepresented). WSGC supports teacher stipends for the camp.
- WSGC supported three robotics teams in 2010, providing teachers funding for supplies and travel.
- WSGC supported State Science Fair, giving out 14 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, career fairs, teacher conferences/workshops, and Women in Science Conferences. All information about programs is available online. Through continued networking, several new partnerships have been developed (Fremont Co. Library, UW Geology Museum, and Challenger Learning Center).

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

- Use of the Space Trunks has increased by over 50% from FY2009-FY2010. WSGC has added an additional Telescope Trunk and is developing a Wind Energy Trunk to be sent around the State.
- In Fall of 2010, WSGC provided scholarships to 14 middle and high school teachers pursuing their MS in Teaching in Astronomy through a program at UW.
- WSGC continues to support the NASA ERC on the UW campus. This year, WSGC helped update their collection by purchasing DVDs and new materials. 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 FY 2010, WSGC supported teacher involvement in five STEM-related events: 1) Astro-Science camp near the Wind River Reservation, one teacher, 10 students (70% underrepresented); 2) Cardio Talk for Sci Fri in Sheridan, WY, three teachers, ~40 students – research talk and hands-on dissections and EKG readings; 3) STEMtech On-line conference participation for teacher in Rock Springs, WY; 4) UW Planetarium show for teacher and 6$^{th}$ grade students from Indian Paintbrush school in Laramie, WY; and 5) Pre-service teacher workshop at UW with NASA Education Specialist, Tony Leavitt.

***OUTCOME 3***

**Goals:** Increase museum outreach and partnerships.

- WSGC is working with the UW Geology Museum to incorporate Space Science displays into their collection. Currently there is a meteorite display, which we plan to update/expand this summer. Students in this year's Rocket Science class are also planning a Rocket – Space Science display in the museum.
- We have acquired a Space Shuttle tile and would like to get more memorabilia to put together a Space Shuttle traveling display that can be sent around the State.

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

- WSGC is working with the Fremont Co. Library to develop a telescope lending program with space-related activities for the public.
- We continue to work with the Casper Planetarium to support K-12 educational opportunities.
- A Challenger Learning Center is being developed in Gillette, WY and we have invited them to attend our WSGC Board Meetings.

## PROGRAM CONTRIBUTIONS TO PART MEASURES

- **Longitudinal Tracking:** Total awards = 159 (FY2006-2010); Fellowship/Scholarship = 138, Higher Education/Research Infrastructure = 21; 17 of the total awards represent underrepresented minority (13) or disabled (4). Two students have accepted STEM positions in an aerospace industry, 30 students have accepted STEM positions in non-aerospace fields (including academic fields), while 40 have graduated and are pursuing advanced STEM degrees.
- **Course Development:** During 2010, WSGC funded three Education Enhancement Grants to faculty developing new STEM courses. New or updated courses include: *Advanced Finite Element Analysis* – Mechanical Engineering, *Cloud Forest Ecology in Ecuador* – Renewable Resources, and *Map Use and Analysis* – Geography.
- **Matching Funds:** Currently, WSGC is close to meeting the required $530,000 in matching funds. The departmental match contribution is currently over $80,000 and is generally the most difficult category to collect. As for the remainder of the categories, graduate tuition, affiliate and nonprofit matches, Space Grant is on track. Indirect costs are also within normal ranges. Based on the current amount of match collected, $494,000, WSGC is on track to collect the required balance of matching funds for FY2010 by the end of the grant period.
- **Minority-Serving Institutions:** WSGC has started a partnership with WSSU, a historically black college in North Carolina. In summer 2010, five WSSU students participated in a summer research fellowship at the University of Wyoming under the mentorship of UW graduate students. Recruitment for summer 2011 is ongoing.

## IMPROVEMENTS MADE IN THE PAST YEAR

Space Grant has continued to develop its management strategy and network by adding another affiliate community college to the consortium, Northwest College. All community colleges in the State are now part of the Space Grant Consortium. In the Fall, WSGC added an Office Associate who will work 2/3 time for Space Grant and 1/3 time for NASA EPSCoR, facilitating cooperation between those two programs. In the summer of 2010, WSGC developed a partnership with WSSU, a HBCU, to help increase program diversity and diversity within the educational system in WY. Space Grant will continue this program. In summer 2010, WSGC received a Summer of Innovation grant that supported 10 four-week summer camps focused on climate, climate change, and alternative energy – specifically wind energy. Space Grant will continue this program on a smaller scale in summer 2011 with internal funding and hope to grow the program in the future.

## PROGRAM PARTNERS AND ROLE OF PARTNERS IN PROJECT EXECUTION

- **University of Wyoming**: 4-year university. Location of the WSGC offices. Involved in Undergraduate and Graduate Fellowships, Faculty Research and Education Grants, NASA internships, and community college transfer scholarships;
- **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.