

Wisconsin Space Grant Consortium

Lead Institution: University of Wisconsin-Green Bay

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Affiliate Member list:

AIAA - Wisconsin Section	Spaceflight Fundamentals, LLC
Aerogel Technologies, LLC	University of Wisconsin-Fox Valley
Alverno College	University of Wisconsin-La Crosse
Astronautics Corporation of America	University of Wisconsin-Madison
BioPharmaceutical Technology Center Institute	University of Wisconsin-Milwaukee
Carroll College	University of Wisconsin-Oshkosh
Carthage College	University of Wisconsin-Parkside
College of Menominee Nation	University of Wisconsin-Sheboygan
Great Lakes Spaceport Education Fdn.	University of Wisconsin-Stout
KT Engineering	University of Wisconsin-Superior
Lawrence University	University of Wisconsin-Whitewater
Marquette University	Western Technical College
Medical College of Wisconsin	Wisconsin Association of CESA Administrators
Milwaukee School of Engineering	Wisconsin Department of Public Instruction
Orbital Technologies Corporation	Wisconsin Department of Transportation
PLANET LLC	Wisconsin Lutheran College
Ripon College	
Space Explorers, Inc.	

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 WI Space Grant Consortium is a Designated Consortium funded at a level of \$590,000 for fiscal year 2007.

Program Relevance to NASA

Space Grant consortia build human capital and research expertise to support NASA programs and missions, expand NASA's expertise and educational networks, and bring knowledge and awareness of space to a broad range of constituents in every state. Every dollar of funding is competitively awarded, and every proposal must demonstrate relevance to the goals of one or more NASA Mission Directorates. We have funded programs relevant to all Directorates.

Program Benefits to the State

The WSGC benefits the state by allowing the key stakeholders in Wisconsin aerospace to define their own needs and play primary roles in creating, executing and supporting programs that address those needs. This is done through our Advisory Council, comprised of Institutional Representatives representing each of our Affiliate Members (see Appendix A). To address these defined needs, the WSGC has created a suite of cohesive programs that enhance Wisconsin growth in aerospace by:

- Providing funding, opportunities for unique NASA-related research and experience, and other support to high-quality students to pursue aerospace fields;
- Recruiting and better retaining minority and female students in aerospace fields;
- Providing support to state academic and industry members to explore new, innovative lines of aerospace research and education methods;
- Seeking out effective ways to encourage Wisconsin precollege educators to learn and utilize space-related content in the classroom.

Program Goals

WSGC is dedicated to using the excitement and vision of space science and aerospace science to equip the students and citizens of Wisconsin with the math, science and technology tools they need to thrive in the next century. Our objectives for the next five years include:

- 1) Recruit and provide support for the education and training of students, especially women, under-represented minorities, and the developmentally challenged, for careers in space- and aerospace-related fields to meet the high technology needs of the state and the country.
- 2) Develop a comprehensive network of Wisconsin entities, with interests and capabilities in aerospace and space-related science, design and technology, and link this network with NASA centers and other national aerospace resources, in order to stimulate space and aerospace research, education, and outreach.
- 3) Work with universities, educators, industry, and government to promote strong space- and aerospace-related science, mathematics, design, and engineering education in Wisconsin at all levels.
- 4) Stimulate, support, and coordinate interdisciplinary, interuniversity and university/ industry research, training, and public service through a variety of research, educational, and outreach programs.

Program Accomplishments

Important accomplishments for the WSGC for the past year include:

- Successfully ran our Student Satellite Program. This includes (1) our fourth annual Rocket Competition, an opportunity for students to design, build and fly their own rockets in answer to an engineering challenge; and (2) the Elijah high-altitude balloon program, allowing students to design, build, fly and analyze the data from near-space balloon launches. These unique, hands-on, experiences are real science, real engineering experiences that are almost entirely student-driven.
- Successfully ran the annual Wisconsin Space Conference, the seventeenth, hosted in FY 2007 by one of our newer members, the University of Wisconsin-Superior. This conference gives all our funded students, faculty, education and industry members a forum in which to present their results.

- The Director, as Chair of the Great Midwest Regional Space Grant Consortium, led an eight-state Regional Space Grant workshop hosted by Indiana Space Grant and conducted with the goal of supporting and enhancing the study of land use in the Midwest using remote sensing. Through this workshop the WSGC released an Announcement of Opportunity to fund one or more one-year pilot projects that address one or more of the following major themes in land use: (1) land use patterns; (2) water quality and availability; and (3) the health and sustainability of agricultural systems. One proposal was chosen for funding through peer review.

- Five Research Seed grants were awarded to provide relatively new faculty or staff the opportunity to establish a space-related research project, or more experienced faculty or staff the opportunity to begin new space-related research programs.

- One professor was funded for 3 observing nights at the WIYN Consortium Telescope.

- Two new or continuing awards were made to college or university faculty or academic staff interested in developing a new course, minor, major, or curricular area related to space science, aerospace engineering, or any other space-related discipline.

- Five industry staff members were funded to receive additional training important to stay abreast important changes in the high-technology field of aerospace engineering.

- Inducted the University of Wisconsin-Sheboygan and Spaceflight Fundamentals as new members.

- Held a precollege educator workshop with self-defined interest in improving and streamlining high school astronomy content and produced updated curriculum based on that workshop.

Student Accomplishments

The WSGC is primarily focused on supporting higher education students.

Accomplishments for the past year include:

- Funding of 42 students on 9 rocket teams from seven WSGC Affiliates for our annual Rocket Competition; of these, about 40% students would be considered non-engineering majors.

- Funding of twelve students from three different WSGC Affiliates to be a part of the Elijah high-altitude balloon project.

- Direct awards to 40 students within three scholarship programs, including 13 awards to Undergraduate Scholars, 15 to Undergraduate Research Awards (research defined and conducted primarily by the student) and 11 to Graduate Fellows.

- Award of one Dr. Laurel Salton Clark Memorial Graduate Fellowship to a student from the Medical College of Wisconsin.

- Member institutions are supporting 10 additional undergraduate students with internal funding as match.

- Funding of two NASA internships, two microgravity teams and two internships at Wisconsin industries.