



## **NASA West Virginia Space Grant Consortium**

### **Strategic Plan**

**College of Engineering and Mineral Resources  
West Virginia University  
P.O. Box 6070  
G-68 Engineering Sciences Building  
Morgantown, WV 26506-6070  
WWW.NASA.WVU.EDU**

## **Introduction**

The NASA West Virginia Space Grant Consortium is a group of West Virginia academic institutions, with industrial partners, which have joined together under the sponsorship of NASA in order to encourage and support West Virginia's participation in science and engineering. The consortium's programs focus on research, fellowships, K-12 Outreach, and a strategic vision for the state's involvement with the nation's future endeavors in science and technology.

The Consortium consists of Bethany College, Fairmont State College, Marshall University, Salem International University, Shepherd College, West Liberty State College, West Virginia University Institute of Technology, West Virginia High Technology Consortium Foundation, West Virginia State College, West Virginia University, West Virginia Wesleyan College, Bluefield State College, and Wheeling-Jesuit University. The Consortium is housed in the College of Engineering and Mineral Resources at West Virginia University.

This document contains the strategic plan developed by the Board of Directors to serve as a guide for our current programs and future activities.

## Mission Statement

The overall goal of the NASA West Virginia Space Grant Consortium will be to capture, channel, and enhance the activities of the current and potential scientists and engineers throughout the Consortium institutions. Three approaches to this mission are described in this document:

**Goal 1:** Promote and support research efforts of Consortium faculty and students on areas of interest to NASA.

**Goal 2:** Increase community support through effective communication of the Consortium's mission in regard to the importance of science, engineering, and space-related education and research activities to the economic climate of West Virginia.

**Goal 3:** Enhance the interests and enthusiasm of K-12 students in West Virginia in science, engineering, mathematics, and space-related disciplines.

This mission is consistent with the plans of NASA's Education Division, which provides the base support for the Consortium. To capture the faculty and student attention, the Consortium will develop a process of bringing individuals into dynamic contact and involving them with personnel and facilities where aerospace and space-related research is already in progress. To channel the interests of current and potential scientists and engineers to initiate research in space related and science fields, the Consortium will facilitate connections between the academic, corporate, and NASA environments. Finally, to enhance the activities of faculty and students so that they can take advantage of the fast breaking opportunities offered by NASA and NASA contractors to increase their understanding, evaluation, development, and utilization of space resources, the Consortium will provide access to resources for proposal development and project management that may not be available to researchers through their respective institutions.

## **Target Audience**

The Consortium serves a variety of target audiences in addition to the community of scholars on each campus. If we are to stimulate future scientists and engineers, the general public must be educated. If basic knowledge is to be applied in a meaningful way, the corporate community must be involved. These diverse audiences derive a variety of benefits from various opportunities for participation. The most valuable benefits include informed, facilitated access to human resources at the Consortium institutions, access to facilities and prepublication results of specific research projects, and increased community visibility.

## **Internal Assessment**

### **Strengths**

Member institutions have degree programs in a variety of science and engineering disciplines such as Biology, Chemistry, Computer Engineering and/or Computer Science, Electrical Engineering, Math, Aerospace Engineering, Mechanical Engineering, and Physics which allows for compatible and overlapping faculty interactions.

Each institution has access to high speed Internet, through which they can communicate with each other and other entities.

The Consortium is housed at West Virginia University, where indirect costs for the Consortium are waived.

The Consortium budget will be maintained at a stable or increasing level, allowing staff to focus on program issues.

### **Weaknesses**

The focus of the majority of member institutions is on teaching, rather than on research. As a result, the infrastructure needed to help faculty members in securing funding for research is inadequate or non-existent.

Faculty may not be motivated to pursue collaborations with other researchers outside their discipline or institution.

Interested investigators may not be able to respond in time to pursue funding opportunities.

Faculty at member institutions are intimidated by the seemingly complex structure of NASA Centers and Enterprises. Hence, they are reluctant to initiate contacts with NASA scientists or to write grant proposals.

## Goals and Strategies

The following section describes the means of achieving the Consortium goals as mentioned previously in the Mission Statement.

**Goal 1:** Promote and support research efforts of Consortium faculty and students on areas of interest to NASA.

**Objective 1:** To capture undergraduate/graduate student interest.

### *Strategies*

Publicize undergraduate and graduate fellowship opportunities available at the Consortium and the various NASA Centers.

Increase awareness of opportunities available to students at NASA Centers.

Provide extracurricular experiences that contribute to the enhancement of general interest in space exploration and space education.

### *Tactics*

Obtain fliers, brochures or other literature that outline the various opportunities for students at NASA Centers. Distribute this literature to every Board member for dissemination of this information to students at all member institutions.

Announce scholarship and fellowship opportunities to every Department in science, engineering, and mathematics. Follow up with a telephone call to be sure the announcements have been posted.

Support the West Virginia University chapter of the American Astronautical Society (AAS) and AIAA by providing them with office space and general support for their activities.

**Assessment Measure:** Increase in the quality of student fellowship applications and awards. Number of students impacted by the outreach efforts of the AAS and the AIAA.

**Objective 2:** To enhance faculty research capability.

### *Strategies:*

Familiarize campuses with interests of NASA Centers and corporate aerospace community through faculty forums.

Allocate funds for faculty development in the form of fellowships and travel grants to allow for the exploration of new problems of interest to the investigator, NASA and the aerospace community.

Increase awareness of faculty opportunities at NASA Centers.

Promote basic research by faculty in collaboration with NASA scientists.

### *Tactics*

Obtain Research and Technology Annual Reports from NASA Centers and distribute them to member institutions.

Develop faculty interest database.

Utilize knowledge of the Consortium's Board of Directors to organize forums, which allow for multidisciplinary discussion of technical problem/solution development and provide follow-up with NASA researchers for potential government contracted joint research projects.

Allocate funds for Research Initiation Grants open to all faculty on a competitive basis.

**Assessment Measure:** Increase in the amount of faculty involvement with NASA Centers and number of proposals generated.

**Objective 3:** To encourage and support the development of curriculum offerings, which emphasize interdisciplinary and global integration of themes in the study of aerospace and space, related fields.

### *Strategies*

Utilize capstone design courses, Honors, and other special topic courses to stimulate student interest, particularly in the development of projects and thesis subjects.

Investigate the development of new courses.

### *Tactics*

Institute a curriculum development fund to be open on a competitive basis to all faculty.

**Assessment Measure:** The number of courses developed and offered.

**Goal 2:** Increase community support through effective communication of the Consortium's mission in regard to the importance of science, engineering, and space-related education and research activities to the economic climate of West Virginia.

**Objective 1:** To take an active role at the state government level to encourage science infrastructure development as compatible with Consortium goals.

*Strategies*

Inform and work with WV Development Office, Governor's Office of Technology, and WV Science and Technology Council and other relevant government agencies of Consortium activities and what other states are doing.

*Tactics*

Encourage the participation of the state of West Virginia in the Aerospace States Association.

Work with various state agencies to provide more opportunities with present funding levels for science and space-related focused activities.

**Assessment Measure:** Number of requests for assistance and events attended.

**Goal 3:** Enhance the interests and enthusiasm of K-12 students in West Virginia in science, engineering, mathematics, and space-related disciplines.

**Objective 1:** to promote interest in science among elementary and secondary school students.

*Strategies*

To sponsor outreach activities at elementary and secondary schools throughout West Virginia.

*Tactics*

To administer the West Virginia Space Grant Outreach Programs at as many schools as possible throughout West Virginia.

To identify schools throughout West Virginia that are interested in having university students visit their schools to talk about science and engineering. Assist the local chapter of AAS in organizing these speaking events.

**Assessment Measure:** The number of students impacted by this outreach program.

**Objective 2:** to design, fund and disseminate information in continuing education opportunities and programs for math and science teachers in West Virginia.

*Strategies*

To help ensure that math and science teachers in West Virginia are given the opportunity to advance their knowledge of space related fields such as remote sensing and environmental issues.

*Tactics*

To administer the West Virginia Space Grant Outreach Programs that provides funding for teachers to attend regional and national continuing education programs.

To maintain an up to date list of teachers who are interested in professional development opportunities provided by the Consortium.

To work with other Space Grant Consortia to design and implement workshops for teachers in West Virginia and other states.

**Assessment Measure:** The number of teachers impacted by our programs.