

South Carolina Space Grant Consortium Strategic Plan

April 4, 2008

Vision

The vision of the South Carolina Space Grant Consortium (SCSGC) is to expand opportunities for all South Carolinians through education, research, and public service in NASA-related science, technology, engineering and math (STEM) disciplines.

Mission

The consortium exists to implement the National Space Grant Act of 1988 in South Carolina. Within the larger context of national science and technology initiatives, we promote activity in research, education, and public service related to the NASA mission.

Values

The NASA SCSGC is committed to excellence in students and faculty research and to promoting STEM education and expanding outreach projects across the state of South Carolina. We specifically seek to include underrepresented groups in all of the programs and activities supported by the SCSGC.

Consortium Goals

The Consortium has six goals to accomplish its mission statement. All of our research, education, and public outreach programs fulfill one or more of the goals listed below.

GOAL 1. To increase access, understanding, development, and utilization of resources in four areas: space science, Earth system science, biological sciences and aeronautics.

GOAL 2. To encourage cooperative programs among colleges and universities, state organizations, business and industry, and pre-college interests.

GOAL 3. To enhance interdisciplinary research, education and public service activities.

GOAL 4. To recruit and train students, educators, and professionals, especially women and underrepresented groups.

GOAL 5. To promote a strong science, mathematics and technology base throughout all levels of South Carolina education.

GOAL 6. To facilitate statewide communication of NASA opportunities and programs.

1. Consortium Management

GOAL: To facilitate statewide communication of NASA opportunities and programs.

Objective 1.1: (Reporting) The Management Team will provide timely reporting and responses to NASA Headquarters regarding Consortium operations and finances.

***Outcome Indicator:** All reports will be submitted on time and in accordance with NASA guidelines.*

Objective 1.2: (National Network) The Management Team will work to strengthen relationships with NASA Centers, the national Space Grant network, and the state's NASA EPSCoR Program.

***Outcome Indicators:** Each year at least three students will participate in an internship program at a NASA Center and all faculty research projects are required to have a strong relationship with NASA scientists at one of the NASA Centers. The SCSGC Director and/or Program Manager will be present at biannual national Space Grant meetings. The SCSGC Director and Program Manager also serve as the Director and Program Manager for the SC NASA EPSCoR Program.*

Objective 1.3: (Consortium Network) The Management Team will faithfully represent the diverse interest and resources of the Consortium member institutions and affiliates.

***Outcome Indicators:** The roles and responsibilities of Consortium Management, member institutions, and all categories of affiliate organizations were established with the inception of the SCSGC and were updated in 2004 and then again in 2006. Relevant electronic communication sent to all member institutions, affiliates, and interested parties, as appropriate.*

Objective 1.4: (State government) The Management Team will ensure that Consortium programs are aligned with state and federal priorities.

Outcome Indicators: *Members of the Management Team provide annual reports to representatives of state and federal government on Consortium activities.*

Objective 1.5: (State industry) The Management Team will foster interaction between the Consortium and state industries involved in aerospace and related technologies.

Outcome indicator: *Facilitate at least one student or faculty project with an industry partner in South Carolina.*

Objective 1.6: (Link to public) The Management Team will seek to maintain and improve the effectiveness of the Consortium as the link between the public and NASA in the state.

Outcome indicator: *Consortium website was completely redesigned in 2005 and is updated on a weekly basis to reflect new opportunities within NASA.*

Objective 1.7: (Increase resources) The Management Team will pursue opportunities to increase the resources available to the Consortium, to broaden participation within the state, to collaborate with other state Consortia in areas of mutual interest and capability, and to assure long-term sustainability.

Outcome indicator: *Serve as a clearinghouse for information on funding opportunities from NASA and other agencies that support STEM-related research and education, especially in areas of aerospace and earth and space science. At least 50 targeted announcements of opportunity will be disseminated through electronic communication and website each year. Coordinate submission of proposals to NASA and other agencies on projects in STEM research and education. Encourage collaborative proposals each year to NASA or other agencies.*

Objective 1.8: (Diversity) The Management Team will ensure diversity in all Consortium programs and activities by seeking to include women, underrepresented minorities, and persons with disabilities.

Outcome indicator: *Diversity will be modeled in all aspects of the Consortium and participation by underrepresented groups will increase. NASA content or other STEM educational opportunities are expanded at these underrepresented institutions.*

Objective 1.9: (Evaluation) The Management Team will continually monitor and seek to improve the quality and effectiveness of the state program.

***Outcome indicator:** In consultation with the Campus Directors, the Management Team will continue to determine appropriate data collection and evaluation procedures that are consistent with available resources. The Consortium website was redesigned in 2005 so that evaluation data could be collected through online surveys and compiled for analysis by the Management Team.*

2. Fellowship/Scholarship Program

Goal: To recruit and train students, educators, and professionals, especially women and underrepresented groups.

Objective 2.1: (Competitiveness) Ensure the fair distribution of funds to member universities and educational affiliates.

***Outcome indicator:** Annual Call for Fellowship/Scholarship applications at all higher education members and affiliates, competitive review, and selection of awardees. Awards reflect the diversity of the Consortium's membership and statewide balance.*

Objective 2.2: (NASA Center ties) Offer hands-on, tangible research experiences to student research fellowship awardees at NASA Centers.

***Outcome indicators:** SCSGC will note an increase of SC students involved with NASA Center Internships. 100% will make a presentation at the SC Academy meeting or at a national meeting. 100% will provide feedback to their Campus Director and make campus presentations.*

Objective 2.3: (Industry ties) Offer hands-on, tangible research experiences to student research fellowship awardees at aerospace and related science and technology industries.

***Outcome indicator:** At least one student will receive supplemental funding through SCSGC each year.*

Objective 2.4: (Mentoring and professional development) Provide mentoring and professional development experiences to student researchers, which will develop skills that contribute to the future workforce.

Outcome indicator: 100% of awardees graduate from college, 100% make a presentation at the SC Academy of Science or at a National meeting within a year of receiving the award, 80% produce a paper or abstract with their mentors within a year of receiving the award, and 50% continue on to graduate school and pursue a NASA-related discipline.

Objective 2.5: (Diversity) Ensure funding for fellowships and scholarships to women, underrepresented minorities, and persons with disabilities by utilizing intensive marketing techniques (personal visits, direct faculty contacts, email) to encourage women and minority students to apply for funding.

Outcome indicator: Awards to women and minorities equal or exceed previous year applicants. At least 15 student awards awarded annually within underrepresented groups.

Objective 2.6: (Longitudinal tracking) All students who have received significant fellowship or scholarship assistance from SCSGC will be longitudinally tracked through first employment or beginning of advanced degrees.

Outcome indicator: Continue arrangements with National Space Grant Foundation to include SCSGC in the longitudinal tracking system so that students funded can continue to be tracked in subsequent years at least through first-employment.

Objective 2.7: (Evaluation) The Consortium will develop methods to document, measure, and assess the impact of the fellowship and scholarship programs in conjunction with its implementation of an overall evaluation strategy (see 1.9).

Outcome indicator: Adjustments are made to the fellowship and scholarship program to strengthen activities that are working and drop or improve activities that are not having the intended impact.

3. Research Infrastructure

Goal: To enhance interdisciplinary research, education and public service activities; to encourage cooperative programs among colleges and universities, state organizations, business and industry, and pre-college interests

Objective 3.1: (Research proposals) Increase the number of research proposals submitted by SCSGC institutions in fields aligned with NASA's mission.

Outcome indicator: At least eight research awards are distributed

among appropriate SCSGC institutions each year. 100% of the REAP recipients submit proposals to NASA or another federal agency within two years. 50% of the REAP recipients submit new proposals which are funded within two years. 100% of the REAP recipients give presentations and submit papers within a year after the end of the grant. 80% of the presentations and papers include students

Objective 3.2: (Research support) Support new and developing research, especially multidisciplinary and collaborative projects, in fields aligned with NASA's mission.

***Outcome indicator:** 50% submit proposals for a REAP Research Grant or similar program. 100% of the REAP recipients develop presentations and papers within two years. 80% of the presentations and papers include students.*

Objective 3.3: (Collaborations) Build research collaborations both within and outside the state.

***Outcome indicator:** At least one planning trip to a NASA Center supported each year from SCSGC. Submission of REAP Research Grant proposal within two years of the award.*

Objective 3.4: (Diversity) Increase the participation of women and underrepresented groups in statewide research programs and facilitate their subsequent entry into STEM careers.

***Outcome indicator:** SCSGC will sponsor activities that encourage women and students from underrepresented groups to enter STEM careers.*

Objective 3.5: (Evaluation) The Consortium will develop methods to document, measure, and assess the impact of the research infrastructure programs in conjunction with its implementation of an overall evaluation strategy (see 1.9).

***Outcome indicator:** Adjustments are made to the research infrastructure program to strengthen activities that are working and drop or improve activities that are not having the intended impact.*

4. Higher Education

Goal: To increase access, understanding, development, and utilization of resources in four areas: space science, Earth system science, biological sciences and aeronautics; to enhance interdisciplinary research, education and public service activities.

Objective 4.1: (Curriculum and NASA content) Contribute aerospace and space and earth science materials to the higher education community in South Carolina.

***Outcome indicator:** Distribute announcements of opportunities for education and curriculum enhancement in NASA-related fields to faculty at member institutions.*

Objective 4.2: (Student Research) Provide opportunities where students gain hands-on knowledge of scientific methods and processes, gain understanding of the importance of teamwork, experience the exhilarating feeling of discovery, spark an interest in continuing NASA-relevant research in graduate school, and enter the STEM workforce by working on NASA-related endeavors.

***Outcome indicator:** 100% of the participants are exposed to current NASA research and 100% make presentations about their research experience.*

Objective 4.3: (Industry involvement) Establish and maintain linkages between SCSGC and higher education and industry in South Carolina by encouraging educational partnerships between the state's academic institutions and private industry.

***Outcome indicator:** At least two collaborative proposals will be funded, promoting partnerships between industry and academic affiliates.*

Objective 4.4: (Diversity) Increase the participation of women and underrepresented groups in all aspects of SCSGC's higher education program.

***Outcome indicator:** SCSGC will sponsor activities that encourage women and students from underrepresented groups to enter STEM careers.*

Objective 4.5: (Evaluation) The Consortium will develop methods to document, measure, and assess the impact of the higher education programs in conjunction with its implementation of an overall evaluation strategy (see 1.9).

***Outcome indicator:** Adjustments are made to the higher education*

program to strengthen activities that are working and drop or improve activities that are not having the intended impact.

5. K-12 (Precollege) Education/Public Service

Goal: To promote a strong science, mathematics and technology base throughout all levels of South Carolina education

Objective 5.1: (NASA dissemination) Contribute aerospace and space and earth science materials to the formal and informal education communities in South Carolina.

***Outcome indicator:** Distribute announcements of opportunities for education and curriculum enhancement in NASA-related fields to formal and informal educators across the state; Maintain and update the SCSGC website to provide opportunities and information to formal and informal education groups as well as the general public*

Objective 5.2: (Pre-service Educators) To increase the number of quality educators pursuing STEM education degrees.

***Outcome indicator:** Pre-Service awardees will be tracked to see how many complete their degree programs and become science and math teachers in SC. At least two awardees will pursue a career teaching STEM fields. SCSGC will also inquire about their using NASA educational materials in their classrooms.*

Objective 5.3: (Science and education events) The SCSGC will support activities of scientific discovery across the state and will support NASA's commitment to renewing a spirit of exploration and discovery and will use the excitement of space exploration to promote this policy to the general public.

***Outcome indicator:** SCSGC staff will develop and host opportunities to promote NASA throughout the state of South Carolina. In 2008, the SCSGC will host several statewide events to celebrate NASA's 50th anniversary and will host a few talks promoting the launch of the international collaborative adventure, Moon Mineralogy Mapper.*

Objective 5.4: (Diversity) Increase the participation of women and underrepresented groups in all aspects of SCSGC's pre-college/general public program.

Outcome indicator: *SCSGC will sponsor activities that encourage women and students from underrepresented groups to enter STEM careers.*

Objective 5.5: (Evaluation) The Consortium will develop methods to document, measure, and assess the impact of the pre-college/public service programs in conjunction with its implementation of an overall evaluation strategy (see 1.9).

Outcome indicator: *Adjustments are made to the pre-college/public service program to strengthen activities that are working and drop or improve activities that are not having the intended impact.*