GEORGIA SPACE GRANT CONSORTIUM

STRATEGIC PLAN
2010 - 2014

Vision:

The GSGC is a statewide network of academia, private industry and non-profit organizations which maximizes the number of Georgia students from all backgrounds who are well-prepared in science, technology, engineering, and mathematics (STEM) fields and who are motivated to support space and aeronautics programs vital to this nation.

Mission:

The GSGC exists as a result of the 1989 National Space Grant College and Fellowship Act. The GSGC supports STEM education, research, and public engagement programs. It is a catalyst to help produce a highly trained and diverse technical workforce that will include scientists, engineers, technology professionals and educators and fully engage underrepresented groups and women. The GSGC actively collaborates with the national network of Space Grant consortia and NASA to achieve its mission.

Goals:

1. Fellowships and Scholarships
   - Deliver a competitive scholarship/fellowship program that promotes STEM excellence in students and faculty.
2. Research
   - Support customer-focused research activities that develop innovative technologies, knowledge and infrastructures to advance NASA's space and aeronautics objectives.
3. Education
   - Provide opportunities for students and educators in STEM disciplines through a progression of programs that immerse them in authentic science and engineering experiences to support the NASA mission and its human capital goals.
4. Informal Education
   - Increase the general public's and students' awareness and knowledge of NASA related technologies through collaborations with informal STEM education providers, NASA, private industry, and consortium members.
5. Consortium Management
   - Promote GSGC and manage its operations in a way which results in effective and collaborative programs that maximize the impact of each affiliate in achieving the GSGC mission.

Values:

The GSGC is committed to integrating the following values into its goals:

- The competitiveness of the State of Georgia and the United States depends heavily on ensuring that men and women and those from traditionally under-represented populations are actively engaged in aerospace fields and STEM disciplines in general. The GSGC will use its 6 Historically Black Colleges and Universities and other consortium affiliates and programs to help ensure a diverse set of students are recruited and trained.
- It is important that GSGC conduct a balanced program of Fellowships and Scholarships, Research, Higher Education, and Informal Education. The Education programs include undergraduate and graduate levels, K-12 activities, and informal education programs such as those at science centers, museums, and summer enrichment activities. The GSGC will work with NASA to ensure that our combined efforts have appropriate program balance.
- The GSGC should recognize and address key touch points in the students career choice development that: 1) inspire students at an early age to pursue STEM careers, 2) nurture their interests and provide needed skills and 3) create opportunities such as internships at NASA and industry, research, etc. that help point them toward STEM employment in space and aeronautics fields upon graduation. This process gives students opportunities to be inspired and knowledgeable and seeks to give them experiences of what it is like to work in STEM careers.

Fellowships and Scholarships

Goal 1: Deliver a competitive scholarship/fellowship program that promotes STEM excellence in students and faculty.

Objective 1.1
Ensure competitive distribution of scholarship/fellowship funds.

Action 1.1.1: Institute a centralized statewide application process to ensure equitable distribution of awards.

Action 1.1.2: Engage women and underrepresented populations (consistent with their higher education enrollment according to the National Center for Education Statistics for the State of Georgia) with scholarship/fellowships in STEM disciplines.

Action 1.1.3: Utilize the GSGC advisory board for oversight of awards to ensure equitable distribution.

Objective 1.2
Create partnerships among student fellowships awardees and mentors involved in NASA's missions and at NASA centers

Action 1.2.1: Increase number of students placed at NASA Academies and other NASA programs.

Action 1.2.2: Pair students with faculty mentors.

Research

Goal 2: Support customer-focused research activities that develop innovative technologies, knowledge and infrastructures to advance NASA's space and aeronautics objectives.

Objective 2.1
Integrate research efforts with those of NASA and other stakeholders, with emphasis on research with direct applications to the state of Georgia.

Action 2.1.1: Facilitate researcher ties with aerospace industry.
Action 2.1.2: Connect NASA personnel, technology and resources to state programs.
Action 2.1.3: Award travel grants to encourage faculty to interact with NASA researchers at NASA field centers or other Federal labs.
Action 2.1.4: Leverage and support Georgia's expertise in Earth sciences, agricultural sciences and remote sensing to support NASA's environmental goals.

Objective 2.2
Provide authentic experiences for students to identify current and potential uses of NASA technologies.

Action 2.2.1: Expand existing collaborations with NASA Centers and Space Academies, NASA C-9 Microgravity aircraft, High Altitude Student Platform (HASP), sounding rockets, and other opportunities

Objective 2.3
Emphasize support for Space Grant Fellows opportunities.

Action 2.3.1: Create new initiatives among consortium members to give Space Grant Fellows opportunities to work at GSGC member institutions.
Action 2.3.2: Provide seed money for young faculty members to write proposals and start-up money for small research projects, with priority to young faculty members who mentor dual degree students or who have been space grant fellows and are currently working in the State of Georgia.

Objective 2.4
Ensure competitive distribution of research funds.

Action 2.4.1: Release an annual statewide call for proposals to all affiliates.
Action 2.4.2: Utilize a selection process that places emphasis on collaboration at HBCUs.
Action 2.4.3: Target strong participation from underrepresented populations in research projects.

Objective 2.5
Disseminate research results to NASA, stakeholders, and national audience.

Strategy 2.5.1: Require research award recipients to submit research outcomes for publication in conference proceedings and referred journals.

Education

Goal 3: Provide opportunities for students and educators in STEM disciplines through a progression of programs that immerse them in authentic science and engineering experiences to support the NASA mission and its human capital goals.

Pre-College

Objective 3.1
Provide STEM professional development programs using NASA's content and resources to provide pre-service and in-service teachers with learning experiences that build critical instructional STEM skills to better prepare their students for STEM careers.

Action 3.1.1: Provide short-term and long-term professional development workshops for K-12 educators. For example, these may include providing speakers, NASA educational materials sources, rocket launch assistance, etc.
Action 3.1.2: Provide stipends, scholarships, internships for educators to participate in professional development opportunities.
Action 3.1.3: Use social network tools, real-time videoconferencing, Internet multimedia, handheld devices, and other dissemination infrastructures to immerse educators in NASA science and technology.
Action 3.1.4: Create a NASA Community of Learners in the state of Georgia for collaboration, networking and support that will establish an affinity among their students to pursue careers in STEM fields.

Objective 3.2
Support Georgia's informal STEM education organizations that use NASA content to promote STEM literacy and support the development of innovative programs that help promote NASA's exploration mission.

Action 3.2.1: Establish a collaborative with informal education providers to develop a cadre of qualified presenters with experience in NASA missions and related content.
Action 3.2.2: Establish a network with informal education providers for accessing NASA materials that will enhance participant's skills in STEM disciplines and inform them of STEM career opportunities.

Objective 3.3
Engage pre-college students in hands-on research and engineering experiences which lead to an increased knowledge of NASA science and technology disciplines, missions, and exploration programs.

Action 3.3.1: Link students to NASA mission opportunities through the Internet, NASA social networks, and other interactive technologies.

Action 3.3.2: Support middle and high school students engaged in NASA challenges and competitions and other research applications that inspire and motivate them to pursue studies in STEM disciplines. Sample programs include Student Launch Initiative (SLI), Team America Rocketry Challenge, Fundamental Aeronautics Challenge, Great Moonbuggy Rage, and the Waste Limitation Management and Recycling Design Challenge.

Action 3.3.3: Connect students to mentors and interns through social networking technologies to promote collaboration.

Action 3.3.4: Identify and publicize on GSGC website NASA and aerospace industry internships and outreach activities.

Objective 3.4
Recruit students and educators in NASA's missions, research, and innovations by engaging a diverse audience including women, under-represented minorities, and persons with disabilities through every part of the state of Georgia.

Action 3.4.1: Support the participation of students and teachers from underrepresented and underserved communities in all GSGC Pre-College activities.

Higher Education including Post Secondary Education.

Objective 3.5
Provide mentoring opportunities to increase the enrollment and retention of undergraduate STEM students and to increase the number of students in STEM graduate programs.

Action 3.5.1: Research existing mentoring programs and identify the most effective strategies for the GSGC. If one or more can be identified which matches the capabilities of the GSGC, implement at least one, including quantitative metrics.

Objective 3.6
Provide higher education and post secondary education students with enriched STEM-related resources and activities.

Action 3.6.1: Find and evaluate available opportunities such as undergraduate summer research at universities and NASA centers, COOP programs, field trips, team activities such as the microgravity and balloon programs, the concrete canoe competition, etc.; and steer STEM students into these opportunities. Establish a central clearinghouse of opportunities at the GSGC level. Conduct follow-up interviews and/or surveys to better advise the next students in the pipeline. Continually seek and exploit new opportunities to place in the clearinghouse.

Action 3.6.2: Encourage undergraduate research by providing travel funds for students to present project results at conferences such as the Georgia Academy of Science and a competitive undergraduate research Request for Proposals program.

Objective 3.7
Maximize opportunities for underrepresented groups pursuing higher education.

Action 3.7.1: Collaborate with HBCUs to design programs to engage and recruit underrepresented populations in the STEM fields.

Action 3.7.2: Utilize facilities such as the NASA-funded Optics Lab at Morehouse College to support research conducted by students of underrepresented groups.

Action 3.7.3: Conduct GRE prep sessions at HBCUs for underrepresented students pursuing STEM disciplines.

Action 3.7.4: Sponsor student organizations supporting STEM disciplines.

Objective 3.8
Collaborate with private industry to maximize and integrate resources into GSGC higher education and post-secondary education efforts in order to address the STEM workforce needs of Georgia.

Action 3.8.1: Establish links with aerospace industry. For example, each affiliate may recommend an corporation to participate in an introductory meeting of affiliates and representatives from each corporation. Conduct follow-up meetings and a publicize interactions to maintain and strengthen ties.

Objective 3.9
Recruit technical and community college members for the GSGC.

Action 3.9.1: Prepare a document outlining the advantages to a technical/community college to becoming a consortium member and the necessary steps to joining the consortium.

Action 3.9.2: Designate at least one current consortium member to recruit a technical-community college.

Informal Education

Goal 4: Increase the general public's and students' awareness and knowledge of NASA related technologies through collaborations with informal STEM education providers, NASA, private industry, and consortium members.

Objective 4.1
Provide unique opportunities to engage students, educators, families, and the general public, in inspiring authentic aerospace experiences that are derived from NASA's exploration plans.

Action 4.1.1: Offer programs for the public at consortium members' institutions on STEM-related topics that highlight NASA's activities and missions.

Objective 4.2
Implement public engagement activities by leveraging the infrastructure of the informal education community in the state.

Action 4.2.1: Coordinate informal education activities with museums and science centers in Georgia to more effectively reach and engage the public in NASA experiences.

Action 4.2.2: Designate a GSGC member near each informal education center, such as Fernbank, to establish a strategic partnership for collaboration and resource sharing.

Objective 4.3:
Promote public astronomical viewing sessions and planetarium programs that focus on NASA space science activities and missions such as Hubble Space Telescope findings .

Action 4.3.1: Provide viewing session/planetarium program providers with links to NASA resources and materials.

Action 4.3.2: Establish a mini-grant program for support of public viewing sessions and programs by the astronomy/physics departments of colleges, astronomy clubs, and planetaria around the state.

Action 4.3.4: Establish a blog for information sharing for the viewing session/planetarium program providers.

Consortium Management

Goal 5: Promote GSGC and manage its operations in a way which results in effective and collaborative programs that maximize the impact of each affiliate in achieving the GSGC mission.

Objective 5.1
Promote the accomplishments and capabilities of the GSGC within the state and nationally with public officials, NASA, industry, students and the general public.

Action 5.1.1: Develop and maintain a current, attractive, and effective GSGC website which promotes the vision, accomplishments, and capability of the consortium.

Action 5.2.3: Develop and maintain a contact list of GSGC stakeholders which includes the following: current and prior funded organizations and students, NASA and industry personnel who may support GSGC activities, public officials with influence in Space Grant, External Advisory Board members, and Affiliates.

Action 5.2.2: Produce a quarterly newsletter, post and disseminate to all GSGC stakeholders.

Action 5.2.3: Visit state and national public officials to communicate the accomplishments and capabilities of the GSGC.

Action 5.2.4: Promote presentations of student and faculty GSGC accomplishments at state and national meetings.

Objective 5.2
Ensure effective communication between the External Advisory Board, Affiliates and Directors office in regard to new funding opportunities, national initiatives, accomplishments and decision making activities.

Action 5.2.1: Hold semi-annual consortium meetings including External Advisory Board, Affiliates and the Directors Office to discuss GSGC operations, new opportunities, and to make recommendations and decisions. Produce and disseminate minutes of the meetings to all participants.

Action 5.2.2: Hold quarterly Advisory Board Meetings during the first 18 months and semi-annual meetings thereafter to review GSGC progress and policies.

Action 5.2.3: Acquire and disseminate feedback on GSGC operations from External Advisory board to all Affiliates

Action 5.2.4: Provide timely disseminate funding opportunity information to Affiliates and promote effective collaboration in new initiatives.

Objective 5.3
Implement, refine, and automate the proposal announcement, review and selection process

Action 5.3.1: Develop an efficient web-based proposal submission process for affiliates and others requesting funding

Action 5.3.3: Conduct systematic reviews and provide feedback on funding requests based on the following criteria: Relevance to Space Grant, Merit and Soundness of Proposal, Reasonableness of Budget and Reporting Success of Investigators.

Action 5.3.2: Develop an efficient web-based Fellowship and Scholarship application processes.

Action 5.3.3: Develop and implement a process for systematic review of Fellowship and Scholarship applications.

Objective 5.4
Ensure effective participation, fiscal accountability and data reporting responsibility by the GSGC Director's office and the GSGC Affiliates.

Action 5.4.1: Collect and disseminate progress reports which provide tracking data and status reports from each Affiliate and other funded organizations. Progress reports will be required every 90 days for the first two years. For the subsequent years, progress reports will be required every 6 months.

Action 5.4.2: Develop and implement an efficient and accurate longitudinal tracking process for all GSGC students. Automate this system using either a GSGC based web server or through the services of the National Space Grant Foundation.

Action 5.4.3: Accurately and communicate spending and tracking data to GSGC Affiliates, Advisory Board and to NASA

Action 5.4.4: Ensure that prior data reporting accuracy is a significant factor in consideration of funding for all entities requesting funding.