



GSGC Impact Summary



gasgc.org

gsgc@gatech.edu | 404-894-0521

About GSGC

The Georgia Space Grant Consortium (GSGC) was established in 1989 to develop a statewide network of academic, industry, and non-profit partners dedicated to... **Maximize 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.**

The GSGC has **21 affiliate** members and **10 partner** organizations serving both metropolitan and rural areas of the state. The GSGC team includes **six Historically Black Colleges and Universities and two women serving institutions**. Georgia ranks 8th in U.S. aerospace industry employment with more than 800 aerospace companies with operations in Georgia. GSGC uniquely prepares students in STEM disciplines with its affiliates training

and graduating thousands of students annually to meet this critical state need and the needs of NASA.

Summary of Programs

GSGC conducts research, internships, scholarships, fellowships, K-12 student and teacher training programs and public outreach. These program include:

Higher Ed/Workforce Development

- Fellowships, Scholarships
- NASA and Industry Internships
- Student & Faculty Research
- Hands-On Programs (K-12 and College)
- Faculty Research

Teacher Training

- Hands-On Workshops
- STEM Conference registrations

Public Outreach

- Museum & Planetarium Programs
- Camps and Science Programs
- Media Interaction

Program Impact

Substantial impact achieved in training future engineers, scientists, and STEM educators. The GSGC:

- Annually supports diverse set of more than **150 undergraduate and graduate students** per year in research projects, internships, scholarships and fellowships
- Annually provides STEM education and hands-on activities at schools and science centers to more than **30,000 Georgia residents**
- Annually supports K-12 teacher professional development to **approximately 4,000 educators**
- Has funded **115 Ph.D. recipients** in STEM fields over GSGC history

Contact Us: gsgc@gatech.edu

Dr. Stephen Ruffin, Director

Ms. Lori Skillings, Program Manager

Ms. Alysia Watson, Program Coordinator

Highlighted Affiliate Programs



Mercer University:

Undergraduate Research Program: Mercer University's High Altitude Research Project (HARP) is leading an effort to establish a center for high altitude research in Georgia where other universities and K-12 could access affordable high altitude ballooning and near space research. Mercer's multidisciplinary student teams (including 29 undergraduate students and 5 graduate students) have successfully developed a low cost, reusable payload delivery system. During the Fall 2018 semester, the HARP team successfully performed three test launches between 80,000 and 120,000 feet, including tracking and retrieving the balloon and its payloads. The HARP team also held two high altitude ballooning workshops for 40 local middle school teachers and plans to work with high school students and other universities to develop payload experiments to include in upcoming launches.



Fort Valley State University:

K-12 Program: The Mathematics Science & Engineering Academy (M-SEA) is a division the Cooperative Developmental Energy Program (CDEP) at Fort Valley State University. M-SEA provides a continuous pipeline for minority and female students from 9th grade through PhD, majoring in STEM disciplines. With GSGC support, M-SEA recently exposed 27 high school freshman to enhanced knowledge of STEM careers, as well as the development of research and team building skills via more than 20 student engagement activities throughout the year. Participants are mentored for careers in engineering and geosciences, and receive training in soft skills and preparation of professional oral presentations. M-SEA students receive mentoring from Fort Valley State undergraduate students, and are challenged by high level instruction from Fort Valley State professors.



Center for Sustainable Communities:

Informal Education Program: In Atlanta and many other parts of the country many children are born into poverty and will remain there for the majority of their lives unless there is outside intervention. The Cradle to Career Initiative is designed to provide direct engagement by parents, teachers and outside instructors to ensure the availability of STEM curriculum, teaching materials, educational software, and tools among other assistance. Teachers are often engaged in special "excursions" to ensure first hand participation in training and unique experiences. Science Centers are designed and built to ensure applicable STEM materials are readily available in classrooms. This initiative held 30 activities in 2018 impacting nearly 4,000 Georgia residents.



UGA Griffin Campus:

Graduate Research Program: A group of 5 graduate students are using satellite technology to resolve practical challenges and environmental solutions to enhance the capabilities of UAVs use in agricultural and landscape arenas. Student researchers work to independently measure the actual evapotranspiration of turf using the state-of-the-art eddy-covariance method and to relate quantitatively the drone-based spectral signature from the instrumented drone to actual water stress measured with the eddy-flux method. The goal is to develop a method to detect early water stress in vegetation using high resolution satellite maps of drought stress sensitive areas with a drone-based multispectral camera.