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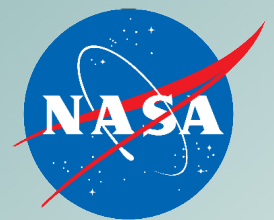
Anthony Gi...



Jonathan Yarbough



Chandler's Mac



Partner



# GSGC 2020 Annual Report



# WHO WE ARE

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.

## About:

- GSGC conducts research, awards internships, scholarships, fellowships, conducts K-12 student and teacher training programs, and public outreach.
- GSGC is actively engaged in preparing students in STEM to meet critical state and national needs with:
- 21 Affiliate Institutions
- 10 Partner Organizations
- 6 Historically Black Colleges and Universities
- 2 Women Serving Institutions

## Higher Ed/Workforce Development:

- Fellowships & Scholarships
- NASA and Industry Internships
- Student & Faculty Research

## Hands-On Programs:

- Faculty Research
- Teacher Training
- Hands-On Workshops
- Public Outreach
- Museum & Planetarium Programs
- Camps and Science Programs

## Partners:

- Atl. Metropolitan State College
- Center for Sustainable Communities
- Commodore Conyers College and Career Academy
- C-STAR
- GA Center for Innovation for Aerospace
- Hines Family Foundation
- PinkSTEM
- Scout Aerospace
- West Georgia Technical College
- Lets Go To Space

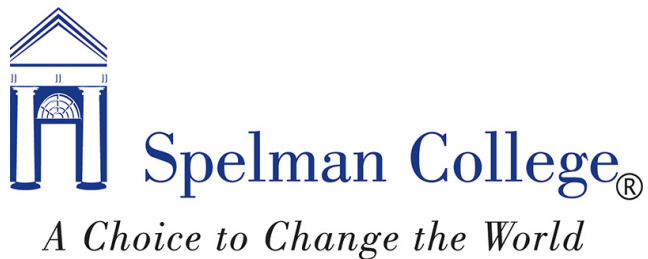
## Affiliates:

- Agnes Scott College
- Albany State University
- Clark Atlanta University
- Columbus State University
- Fort Valley State University
- Generation Orbit Launch Services, Inc
- Georgia Institute of Technology
- GA Southern Univ.-Armstrong
- GA Southern Univ.-Statesboro
- Georgia State University
- Kennesaw State University
- Mercer University
- Morehouse College
- Museum of Aviation
- Savannah State University
- SpaceWorks Enterprises, Inc.
- Spelman College
- University of Georgia- Athens
- University of Georgia- Griffin
- University of North Georgia
- University of West Georgia



# WHAT WE DO

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## Spelman College

For the past nine years, Spelman College has been invited by Massachusetts Institute of Technology (MIT) to bring high achieving students interested in pursuing STEM careers to its Quantitative Biology workshop. This is an intensive seven-day workshop to expose undergraduate students to quantitative methods used in data analysis. The workshop covers topics in biochemistry, genetics, biostatistics, neuroscience, systems biology and computational biology. Five Spelman students attended the MIT Quantitative Biology Conference in January 2020, offering several professional development opportunities (e.g. personal statement/resume workshop, graduate application assistance, etc.). Upon graduation, most students participating in this program continue on to pursue graduate degrees in STEM or attend medical school.

## Columbus State University

Seven undergraduate scholarships were awarded to CSU students during the Fall 2019-Spring 2020 academic year. Scholarship students engaged in one of three types of NASA-related projects. Students learned observation techniques in CSU's WestRock Observatory; designed and tested a prototype CubeSat for astronomical imaging; and carried out faculty-mentored research work relevant to NASA's mission and goals. Students learning hands-on observing or CubeSat instrumentation presented their observations at CSU's undergraduate research forum's virtual "Tower Day" in April 2020. Research students present results at academic conferences or in professional publications.



## Kennesaw State University

The Pre-college STEM Enrichment and Community Outreach Program has KSU students develop and lead STEM activities for local-area high school students. KSU has a long and successful track record of engaging students from Cobb County and Marietta City School Districts with both hands-on lab exercises in STEM fields as well as student-to-student discussions of scientific research. KSU students are teaching scientific fundamentals which encompass a variety of disciplines, relating scientific concepts to real applications, and promoting post-secondary education in STEM programs and careers. The majority of the students in the program not only did outreach with high school students, but were actively engaged in summer research and dissemination/presentations of their research. Nine students presented their work at national conferences and one presented at an international conference; six national or international conference presentations were published in peer-reviewed proceedings, another two conference presentations were submitted, and two students won top presentation awards in their respective fields.



# WHERE WE ARE GOING

My name is Hana Weinstein and I am in my senior year at Kennesaw State University. I am physics major, and have had the NASA Space Grant since the fall of 2019. I have been a part of a research group the last two years at KSU. We are trying to design and build a cosmic ray muon detector using parallel ionization plates. Traditionally muon detectors are more complex and expensive to build using wire chambers. However, we have found an easier and cheaper way to make it- with our parallel plates.

Every semester prior to the pandemic, we have been able to do local outreach and talk to high school students. We talk to them about our research, physics and encourage them to get involved after graduation. Talking to these students has ignited a passion I did not know I had. I really enjoy talking about STEM and advocating for it. I hope to go to graduate school to get my masters in physics; giving myself



**Hana Weinstein,**  
Kennesaw State  
University



**Zachary Welch,**  
University West Georgia

While a sophomore at UWG, the GSGC grant allowed me to pursue physics research regarding Alq3, an organic semiconducting compound famous for its applications as an electron transport and light emitting component used in OLED devices. More specifically, I studied the thin-film configuration of this compound to determine how different spin fabrication techniques affected its morphology.

This grant has allowed me to get hands-on research experience as an undergraduate in an experimental physics environment, provided me with the knowledge required to use a variety of very fascinating lab equipment, and resulted in a publication featured in Optical Materials. The experience itself was exciting and the contribution that I made to the scientific community was even better.

I am now currently a junior at the Georgia Institute of Technology pursuing a degree in nuclear and radiological engineering with a minor in physics. I have to give credit to the GSGC grant for helping me develop skills and a critical thinking mindset that both has helped me get to where I am today and will continue to help me throughout my career!





# WHERE WE ARE GOING

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As a student at Spelman College, a liberal arts college, my Physics Department is incredibly small, and lacks the support needed to fund all its students. By winning the GSGC Scholarship grant, I was able to pay off my Fall 2020 balance entirely. This gave me more time to focus on my studies without having to worry about how I would pay for the semester, which resulted in me earning a 4.0 GPA for Fall 2020.

This Spring, I am planning to achieve yet another 4.0. The GSGC Grant has given me the ability to immerse myself in physics more freely than I ever could before. I now have much more confidence in my ability to achieve my ultimate goal of becoming a Theoretical Astrophysicist.



**Erin Wilson,**  
Spelman College



**Sophia Gooch,**  
Agnes Scott College

When I started college, I was on my own for the first time and had only a faint idea of what I wanted to do. I found a new family with the students and professors in the astrophysics department, but the observatory's outreach department was where I truly felt at home. As a tour guide, I learned every nook and cranny and discovered a love of nurturing kids curiosity about space. I declared astrophysics my major and began researching careers that combined astrophysics and outreach.

Then, Covid-19 struck. I have been completely remote for a year and struggle with feeling isolated and unmotivated. My lifeline has been the outreach program where I have found new ways to connect to my school, classmates, and my local community. I have even returned to campus (safely and socially distant) to film tours inside the observatory to accompany our videos. All of this was possible thanks to the GSGC, who supports our outreach efforts. From the beginning of my college experience, GSGC helped me find my path and gave me the push I needed to reach for it.



## BY THE NUMBERS

The following numbers represent the direct student and community engagement throughout the state for the 2019-2020 academic year. All of the students, educators, and community members participated in a GSGC funded program.

**9,704** K-12 Students

**697** K-12 Educators

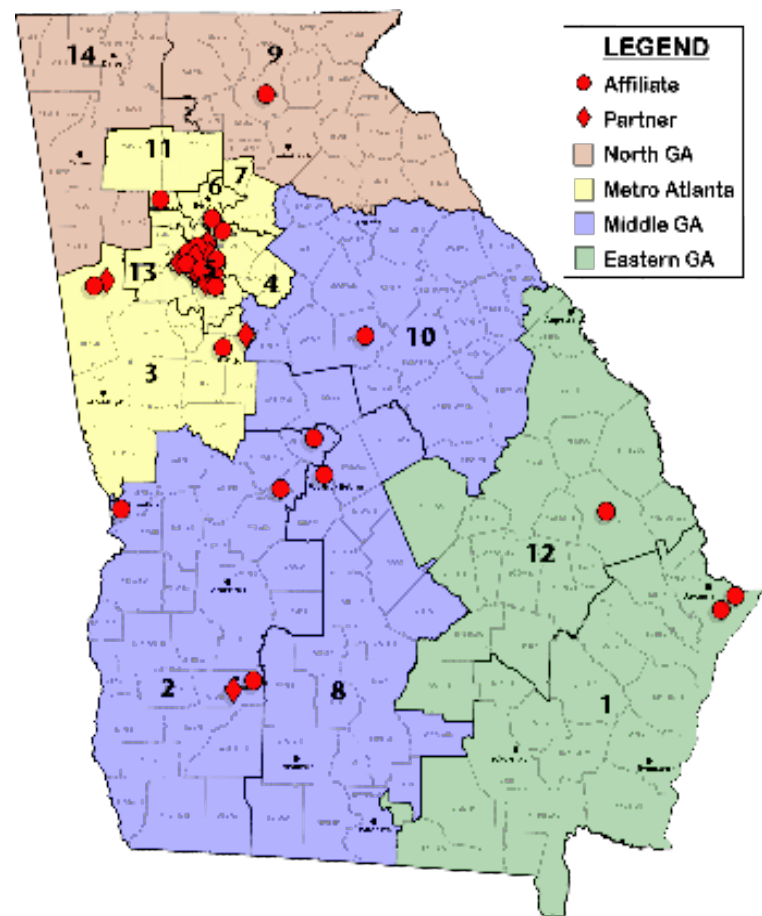
**1,204** Undergraduate  
Students

**117** Graduate Students

**2,338** People Reached via  
Community Events

**60** Fellowships, Scholarships,  
& Internships Awarded

## BY THE NETWORK



GSGC has a robust statewide network, that continues to expand.

**14,911**

Georgia Residents  
Impacted

**45%**

Female  
Student Participants

**37%**

Under-Represented  
Minority Student  
Participants

The sky is no longer the limit.  
Reach for the moon, Mars, and beyond!

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