Welcome to the 2020 STEM/ STEAM Virtual Academy
Twitter: @STEMGeorgia

Instagram: @gadoe_stem_steam

Webpage: www.stemgeorgia.org
STEM/ STEAM is for All Students

**21st Century Thinking Skills:** STEM and STEAM schools support student growth by promoting the 21st Century Thinking Skills: Communication, Creativity, Critical Thinking, and Collaboration.

**Real World Problem Solving:** STEM and STEAM adds relevance to learning. Career exposure through real world problem solving increases student engagement.

**Arts and Design:** The arts teach creative problem solving, innovation, and empathy, connect to students’ interests and learning styles, and prepare students for future careers in the growing creative economy.
“Georgia is one of the top places to do business in the country, with quality employers in every career cluster. **We must take advantage of this and build relationships so that businesses are deeply involved in the educational system through CTAE.** By creating win-win partnerships, we can better align pathways to meet both student and industry needs.”
Partnership Levels

• Support Partner
• Interactive Partner
• Advocate Partner

Business/Community/Post-Secondary partnerships may exhibit any of the involvement levels depending upon the capacity of the partner to engage with schools.
Sasikala Babu
Gulfstream

Project Lead, G450/G550/FLC-87007, Flight Test, System Test Labs Planner, Engineering Labs

Allen Bell
Georgia Council for the Arts
Arts Education Manager

Kenton Meronard
Albany State University
Research Technician

Richard Whitfield
Club Car LLC
Custom Product Manager
Richard “Rick” Whitfield
Club Car, LLC
Custom Solutions
Custom Product Manager

- Customized Small Wheel Utility, Consumer and Golf Vehicles
- Power Productivity in Your Business
- Professional Problem Solvers
- Dedicated Cross Functional Team
- Safety and Regulatory Compliance
- Full Factory Warranty
What is Club Car?
What is Custom Solutions?
It all started with a Mouse…
Characteristics of STEM and STEAM Schools

Project- and problem-based learning
Students must be able to apply content from multiple disciplines to answer complex questions and develop solutions to real-world problems. Teacher takes on the role of facilitator in the classroom.

Integrated Math, Science, CTAE, and for STEAM,

Fine Arts Instruction
Students are able to analyze and articulate interdisciplinary connections that exist within math, science, CTAE, and fine arts context.

Strong business, college, community partners
Partners are involved in development of curricula and assist in making connections between classroom teaching and learning and business and industry applications.

Students conduct investigative research
Students identify and support claims related to a complex question or real-world problem by supplying relevant data as evidence.

Collaborative Planning Time
Time must be allocated for teachers to work collaboratively to plan purposeful, meaningful, and intentional interdisciplinary lessons.

STEM/STREAM for ALL Students

Prepping CTE and Career Ready Students in Georgia

Application of Academic Standards
Focus on

CTAE

Fine Arts for CTE/Academic integration approach

Preparing students for

Career

and Technical fields
Custom Solutions’ Design Process is similar to the STEM Design Process taught in schools:
Collapsible Van Box Design

Van boxes can have shelves, drawers, and even lights inside!

The current van box must be removed from the car before it ships...

...because cars are shipped double-stacked in the trailer.

Windshield Redesign

The current windshield folds down to allow for ventilation...

...but the hinge obscures the driver’s view.

Rear Step Design

Customers want to attach a rear receiver and trailer hitch...

...but the steps on the lift get in the way!
DRAW AN APPLE
Savannah Coastal Empire Society of Women Engineers

Sasikala (Sashi) Babu
A Little About Me – Sashi
Why Do We Care?

Alton (Al) Wright
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<table>
<thead>
<tr>
<th>Event Name</th>
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<tbody>
<tr>
<td>Student Success Expo</td>
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<tr>
<td>Lego League</td>
</tr>
<tr>
<td>Robot Dance Team</td>
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<tr>
<td>Girls Engineer It Day</td>
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<tr>
<td>Summer camp with GT</td>
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<tr>
<td>Science/STEM nights</td>
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<tr>
<td>Gulfstream Family Day</td>
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<td>STARBASE</td>
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<td>Robotics Badge</td>
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<td>Quest Fest</td>
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Questions?
MAA is a national, innovative activity designed to increase participation and retention of historically underserved and underrepresented K-12 youth in STEM. MAA funding affords MSIs the opportunity to develop exciting new avenues for inspiring students in STEM fields.

**MAA Scope**
- Increase participation and retention of historically underserved and underrepresented K-12 youth in STEM.
- Create NASA-unique experiential learning opportunities and challenges that inspire and encourage critical thinking and problem-solving skills required for our nation’s future STEM workforce.
- Develop a clear plan for engaging partners to increase scalability and replication of the MAA that results in sustainability of the activity beyond the initial three-year NASA funding.
NASA Minority Undergraduate Research Experience Program (MUREP)

OUR PARTNERS

- Albany State University
- Georgia Department of Education
- NASA
- Marshall Space Flight Center
- Museum of Aviation Foundation
- GPB
- girls who code
NASA Minority Undergraduate Research Experience Program (MUREP)

MUREP Aerospace Academy Grant Awardee 2018

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Strategies for Expanding Access to STEAM
How Do We Increase Access to STEAM?

- Funding
  - Arts Education Program Grant
  - Other GCA Grant Programs
  - Title Funds – I, II, and IV
  - Governor’s Office of Student Achievement

- Partnerships
  - Teaching Artists
  - Community Arts Organizations

- Strategic Resources
  - Department of Education
  - Georgia Partnership for Excellence in Education
  - Resources on Georgia Artists

- Research on STEAM

- Making the Case for STEAM
  - Emphasizing the Benefits of Arts Education
  - Employing Strategies to Support Expanded Arts Education
Georgia Teaching Artists Registry

The registry features artists representing a variety of disciplines and approaches

- Music
- Visual Art
- Dance
- Theatre
- Storytelling
- Literary Arts and Creative Writing
- Media Arts
- Arts Integration
- STEAM
- Special Populations (ESL Students, Students with Disabilities)
Community Arts Organizations

Variety of Community Arts Organizations Throughout the State

- Museums
- Orchestras and Chamber Groups
- Theatres
- Dance Companies
- Local Arts Councils
- Arts Centers
- Festivals
- Libraries
- Artist-built Environments
- Youth-based Arts Organizations
Community Arts Organizations

Community Arts Organizations May Offer:

- Field trip opportunities
- Assembly performances
- Residencies
- Other types of programs
- Curriculum resources
- Funding through grants or sponsorships

Contact Allen Bell, Arts Education Manager, to identify community arts organizations in your county or region: abell@gaarts.org
Arts Education Campaign Resources

- **Series of 16 Slides Highlighting the Benefits of Arts Learning**
  - PDF, PowerPoint, and JPG formats
  - Printable Classroom Posters (up to 11 x 17)
- **Series of 16 Adoptions Tips to Improve Access to Arts Learning**
  - PowerPoint
  - PDF
Teacher Effectiveness and Retention

Arts integration contributes to increased teacher effectiveness and teacher satisfaction, lowering teacher turnover rates.
Allen Bell
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