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GYSTC STEM TEACHER ACADEMY

“Renewable City Project”



Empowering Students for STEM Careers

GYSTC STEM Teacher Academy

The STEM Teacher Academy focuses on integrating STEM education content with business-industry practices to provide teachers with real-world experience that can be utilized in their classrooms. The Academy comprises four one-day sessions (approximately six hours in duration) on various current topics selected from subjects from the science, technology, engineering and mathematics disciplines. These sessions occur in the months of August, September, October and November and are scheduled at a location convenient for the majority of teachers who attend. This year the sessions were held at Georgia College Graduate Center in Macon, GA. The grade levels are 5th-8th, and separated by the cohorts. Content and pedagogy are integrated throughout the sessions. All curriculum materials are aligned to the current Georgia standards.

Each participant is expected to develop a lesson for his or her own class. A GYSTC Regional Coordinator visits each teacher at their school and provides them with one-on-one assistance. They help the teachers develop and teach their lesson developed as an assignment of the Academy. Teachers receive a book of the accumulated lessons from all Academy participants for their own use and to share with others teachers in their school.

This year's STEM Teacher Academy focused on Energy with an emphasis on Solar, making "*The Great American Eclipse*" a perfect day to begin the Academy. Southwire, the leading manufacturer of residential, commercial, and industrial utility electrical wire & cable, hosted this historical day. Teachers engaged in tours of the facility, participated in hands-on projects designed by Southwire personnel, toured Southwire's premiere 12 for Life cooperative education program and was afforded the opportunity to witness the solar eclipse.

The next three STEM Teacher Academy sessions focused on building math, science and engineering principles while incorporating the 3-D Framework for STEM. We were able to share various practical STEM activities with the teachers to be used in their classrooms. To apply the content they learned in each session, teachers began a STEM Design Challenge during the September meeting. The intent was to present a problem, and each session would allow the teachers to complete a step in the Engineering Design Process. This Year's challenge was the "Renewable City Challenge". Each grade-level cohort was charged with designing a community that uses 100% renewable energy. Teachers were informed that while the city will have several neighborhoods and community amenities, it required basic services to meet the needs of the community. These services include: (1) Fire/Police Department, (2) Hospital, (3) Grocery Store and (4) School House. Each building had unique design constraints which also required varying amounts of energy.

Overall, this year's cohort of teachers became well-versed in the 3-D Framework for STEM and learned how to incorporate standards-based activities into their instruction. They engaged in various hands-on activities at every session that could be replicated and shared at their schools across the state of Georgia. The graduation ceremony for this year's academy will be complimented by a Solar Park Tour in Plains, GA and visit to the Alternative Energy Program at South Georgia Technical College. This provides a noteworthy conclusion to our theme and allows our teachers to explore and discover new pathways towards solar energy in the state of Georgia.

PROGRAM
Monday, May 7, 2018
11:30 a.m. - 1:00 p.m.

WELCOME

Dr. David Kuipers, Vice President of Academic Affairs, South Georgia Technical College
Mrs. Tanya Blalock, Chair, GYSTC Inc. State Board

INVOCATION

Mrs. Joyce Carraker, Past Chair, Chatt-Flint GYSTC

LUNCH

GREETINGS

Ms. Michele McKie, Clinical Director, Georgia Southwestern School of Education
Ms. Marle C. Usry, Virtual Education Program Specialist, Georgia Department of Education

GUESTS RECOGNITION

Ms. Betsy Green, Executive Director, GYSTC, Inc.
Mr. Don Barbour, Vice Chair, GYSTC, Inc. State Board of Director
Mrs. Heidi Goodin, Regional Coordinator, Chatt-Flint GYSTC

PRESENTATION OF CERTIFICATES

Mrs. Tanya Blalock, GYSTC Inc.
Mrs. Betsy Green, GYSTC, Inc.
Dr. Michele McKie, Georgia Southwestern, University System of Georgia
Ms. Marle Usry, Jimmy Carter National Historic Site, Georgia Department of Education
Dr. David Kuipers, South Georgia Technical College, Technical College System of Georgia

SPONSOR

Mr. Victor Rundquist, Senior Development Engineer, Southwire

CLOSING REMARKS

The Honorable Freddie Powell-Sims, Georgia Senate (District 12)
Mr. Richard McCorkle, Director, Chatt-Flint RESA and Chatt-Flint GYSTC Board of Directors

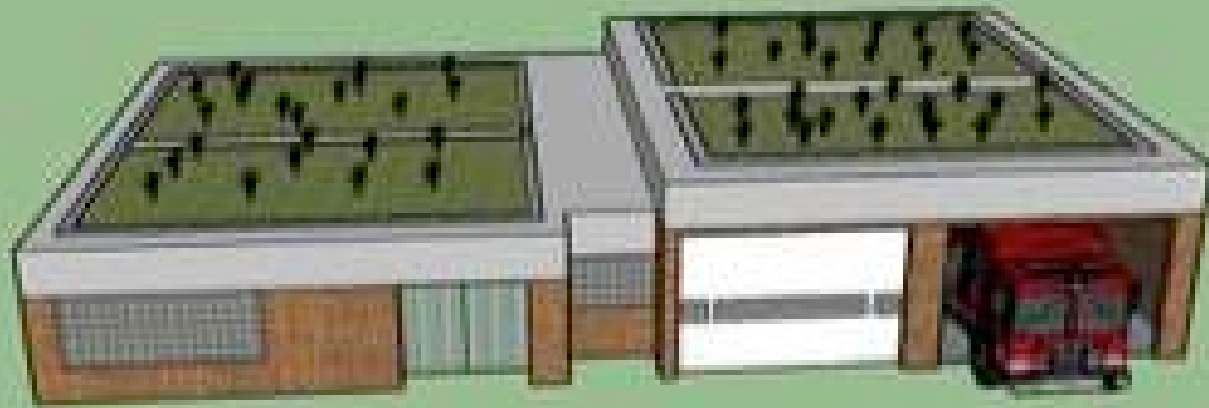
“There is a single light of science, and to brighten it anywhere is to brighten it everywhere.”

~ Isaac Asimov



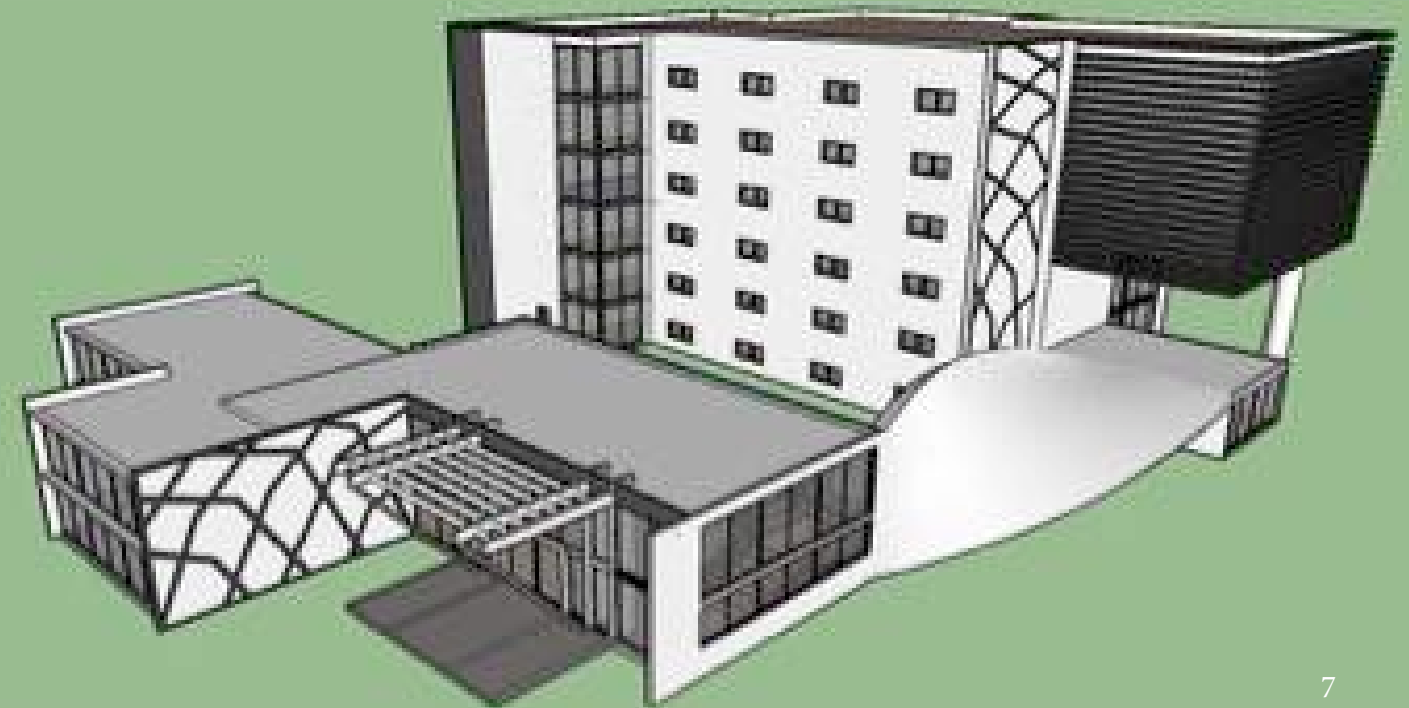
5th Grade

The 5th Grade Cohort was charged with designing a Fire or Police Station for the community. The station was designed to house a maximum of 200 people and encompassed the space of one city block. Teachers were provided with \$20.00 for materials to construct a three dimensional model of the station. Of note is the use of green infrastructure features to accompany the sustainable design features.



6th Grade

The 6th Grade Cohort was tasked with designing a Hospital for the community. This community service required the majority of occupants housed within the structure and spread across two city blocks. Teachers quickly discovered that with such a large capacity, a multi-floored building was required. The three dimensional model budget was \$100.00, making it the most costly structure within the Renewable City.



7th Grade

The 7th Grade Cohort designed the grocery store within the community. The store was required to house as many as 500 people but could only cover one city block. Similar to the 6th Grade Cohort, teachers discovered the need for a multi-floored design to house occupants within a small building footprint. With only \$50.00 to spend on model materials, this cohort created an innovative design presentation with minimum materials.



8th Grade

The 8th Grade Cohort was charged with designing the school house for the Renewable City. The school was designed to occupy as many as 300 people across two city blocks. With such a large footprint for a small capacity building, teachers used their creativity to design a contemporary structure with green space and additional parking. While this cohort had as much as \$30.00 to construct their model, minimum supplies were used.



Faculty Bios

Dr. Judy Awong-Taylor, Associate Dean and Professor of Biology, School of Science and Technology, Georgia Gwinnett College, GYSTC State Board Member

Ms. Amanda Buice, Science Program Manager Georgia Department of Education, GYSTC State Board Member

Mr. Will Berry, Senior Vice President International Southwire Company

Dr. Tom Brown, Director of Statewide Programs GYSTC, Inc., Kennesaw State University

Mr. Aubrey Crook, Program Specialist GYSTC, Inc., Kennesaw State University

“Technology is just a tool...getting the kids working together and motivating them, the teacher is most important.” ~ Bill Gates

Dr. Adrian Epps, Associate Dean and Director of ATOMS Center, College of Science and Mathematics, Kennesaw State University

Mrs. Cathy Fontenot, Regional Coordinator, West GYSTC, University of West Georgia

Heidi Goodin, Regional Coordinator Chattahoochee-Flint GYSTC, Chattahoochee-Flint RESA

Mrs. Cindy Greene, Regional Coordinator, Heart of Georgia YSTC, Middle Georgia State College

Dr. Kathryn Hornsby, Assistant Commissioner for Technical Education, Technical College System of Georgia, GYSTC State Board Member

Mr. Dean Laskey, Regional Coordinator, Gordon and Museum of Aviation GYSTC, Gordon State College

Dr. Judith Monsaas, Executive Director for Research and Assessment Board of Regents of the University System of Georgia, GYSTC State Board Member

Tammy Nowell, Regional Coordinator, Southwest GYSTC, Bainbridge State College

Mr. Victor Rundquist, Senior Development Engineer, Southwire Company, West GYSTC Regional Board Chair

Mrs. Jolaine Whitehead, Regional Coordinator, Oconee River GYSTC, Northeast Georgia RESA

Mr. Chris Wilson, Regional Coordinator, Etowah GYSTC, Georgia Highlands College

Dr. Roneisha Worthy, Assistant Professor of Civil Engineering Civil and Construction Engineering, Kennesaw State University

Mrs. Erin Youmans, Regional Coordinator, Magnolia Midlands GYSTC, East Georgia State College

Dr. Dorothy D. Zinsmeister, Retired Professor Emerita of Biology, Kennesaw State University, GYSTC State Board Member, Magnolia Midlands GYSTC Board of Directors

STEM Teacher Academy Bio

Name: Kenyatta Aldridge
School: Sumter County Middle School
Subject Taught: 6th - 8th Grade Mathematics
7th - 8th Grade English/Language Arts
Degree(s): Specialist in Curriculum and Instruction, Masters in Education, currently pursuing Doctorate in Curriculum and Instruction
Degree Institution(s): Piedmont College, Georgia Southwestern State University, and Columbus State University

Name: Samantha Benslay
School: Oak Hill Middle School
Subject Taught: ELA/Science
Degree(s): BS in Middle Grades ELA/SS/Sci
Degree Institution(s): University of North Georgia

Name: Teresa Cobble
School: Lovinggood Middle School
Subject Taught: 8th grade Science and High School Physical Science
Degree(s): Bachelor of Arts in History
Master of Science in Education
Degree Institution(s): Wichita State University
Fort Hays State University

Name: Lauren Ellington
School: Upson-Lee Elementary School
Subject Taught: Math and Science
Degree(s): Bachelors in Middle Grades Education
Masters in Educational Leadership
Degree Institution(s): Bachelors from Clayton State University; Masters from Columbus State University

Name: Antonio Ellis
School: Cowan Road Elementary
Subject Taught: All Subjects
Degree(s): Bachelor of Science
Degree Institution(s): Alabama State University

Name: Brenda Galbreath
School: McIntosh County Middle School
Subject Taught: Life Science, English, Reading
Degree(s): Bachelors of Science in Middle Grades Education; Masters in Technology in Education
Degree Institution(s): Armstrong Atlantic State University and Walden University

Name: Heidi Goodin
School: *Chattahoochee-Flint GYSTC*
Subject Taught: 25 years in Education K-12 in various classroom settings
Degree(s): Bachelor of Science in Education-Special Education; Masters of Education-Special Education Early Childhood Education Add on Endorsement Gifted Education Endorsement
Degree Institution(s): Georgia Southwestern State University; Georgia Southwestern State University

Name: Kevin Hammons
School: Wheeler County Elementary
Subject Taught: Science and Social Studies
Degree(s): Bachelor of Early Childhood Education
Degree Institution(s): Brewton-Parker College

Name: Lynn Hanson
School: GYSTC
Subject Taught: Science
Degree(s): B.S. Biology
Degree Institution(s): Valdosta State University

Name: Steve Harrison
School: Shiver Elementary
Subject Taught: 6th, 7th and 8th Grade Science
Degree(s): Bachelor of Science Middle Grades Education
Degree Institution(s): Valdosta State University

Name: Attallaha Harris-Williams
School: Toombs County High School
Subject Taught: Engineering, Technology Pathway
Degree(s): BS Printing Management
Certification Technology Ed.; M. Ed Teaching & Learning Tech. Education
Degree Institution(s): Georgia Southern

Name: LaTrina Howell
School: Lake Oconee Academy (Greensboro, GA)
Subject Taught: K-5 STEM and Science Lab
Degree(s): Bachelor's in Computer Information Systems and working on Master's of Education – Instructional Technology
Degree Institution(s): Georgia Southern University (undergrad); Georgia College & State University

Name: Shaqysha Johnson
School: Calhoun County Elementary School
Subject Taught: Math and Science
Degree(s): Pursuing Ed. Specialist; Masters of Science Education; Bachelors in Early Childhood Education
Degree Institution(s): Walden University (Master's and Ed. S.); Valdosta State University (Bachelor)

Name: Trey Kirkland
School: Reidsville Middle School
Subject Taught: 7th Grade Life Science
Degree(s): Bachelor's Degree: Middle Grades Education; Master's Degree: Middle Grades Education (Science)
Degree Institution(s): Bachelor's Degree: Georgia Southern University; Master's Degree: Georgia Southern University

Name: Bryan Little
School: Baker Middle School
Subject Taught: Technology Education
Degree(s): BS in International Business: Finance and Spanish; Masters in Middle Grades Education: Math and SS
Degree Institution(s): Auburn University; Columbus State University

Name: Christopher M. Lovelock
School: Double Churches Middle School
Subject Taught: Engineering and Technology
Degree(s): BS-Business Management; Masters of Arts Teaching-Middle Grades Math & Science
Degree Institution(s): Auburn University; Columbus State University

Name: Michael McCauley
School: Worth County Middle School
Subject Taught: 8th Grade Physical Science
Degree(s): Bachelors of Science in middle grades

(Science and Social Studies); Associates in applied Aircraft Technology
Degree Institution(s): Valdosta State University
Community College of the Airforce

Name: Tammy Nowell
School: Southwest GYSTC at Bainbridge State College
Degree(s): Bachelor of Arts: Interdisciplinary Studies
Master of Education: Instructional Design/Technology
Degree Institution(s): Pensacola Christian College, Pensacola, Florida; Western Governors University, Salt Lake City, Utah

Name: Alison Parker
School: Carrollton Junior High
Subject Taught: STEM 7: Invention and Innovation
STEM 8: Technological Systems
Degree(s): B.S. Science Education; M.A. Science Education
Degree Institution(s): University of Georgia; Piedmont College

Name: Mrs. Dolly Satharla Krupavaram
School: Sumter County Intermediate School
Subject Taught: Earth Science
Degree(s): Bachelor's of Science
Bachelor's of Education
Degree Institution(s): Osmania University

Name: Lenora Satharla Krupavaram
School: Sumter County Middle School
Subject Taught: Science
Degree(s): Bachelors in Science
Bachelors in Education; Masters in Arts
Degree Institution(s): Osmania University (INDIA)

Name: Scarlett Scoville
School: Clifton Ridge Middle School
Subject Taught: Earth Science
Degree(s): B.A. Communication; M.A.T. Special Education
Degree Institution(s): University of Alabama (BA)
Georgia College & State University (MAT)

Name: Lisa Sharp
School: Whigham School
Subject Taught: Science and Social Studies
Degree(s): BS, M.Ed
Degree Institution(s): Carson-Newman College
Jefferson, TN

Name: Teresa Simmon
School: Todd-Grant Elementary
Subject Taught: Math, Science, SS, ELA
Degree(s): Early Childhood K-5; Curriculum and Instruction (Masters) Gifted and ESOL
Degree Institution(s): Armstrong Atlantic University; University of Phoenix

Name: Emily Anne Strickland
School: Sumter County Intermediate
Subject Taught: 5th Grade Science and Social Studies
Degree(s): Masters in Education in Curriculum and Instruction; Bachelor of Science in Middle Grades Education; Associate of Science
Degree Institution(s): Columbus State University; Georgia Southwestern State University; Darton College

Name: Elliott D. Walker II
School: Eastside Elementary School
Subject Taught: Science and Social Studies
Degree(s): BA Political Science
Degree Institution(s): Georgia State University

Name: Shawn Woodward
School: Southside Elementary
Subject Taught: All Subject Areas
Degree(s): Bachelor of Science In Education; Masters of Education
Degree Institution(s): Bachelor of Science from Ball State University; Masters of Education from Thomas University



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GYSTC at Kennesaw State University
3201 Campus Loop Road NW
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www.gystc.org ● gystc@kennesaw.edu ● (470) 578-7592

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Empowering Students for STEM Careers

June 2018 - June 2019

VISION

The Georgia Youth Science and Technology Centers, Inc. (GYSTC) will be the organization of choice throughout the State of Georgia for promoting student interest and achievement in science, technology, engineering and mathematics from kindergarten through grade eight.

MISSION

GYSTC strives to provide quality programs for teachers of STEM subjects that improve the teaching and learning process at the K-8 levels. We present programs that change students' perceptions and inspire an appreciation for science, technology, engineering, and mathematics subjects.

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