

| Session Time           | Room         | Title   | Description   | Presenter |           | Track   | Audience  | Level        |
|------------------------|--------------|---|---|-----------|-----------|---|---|--------------|
| Monday: 10:20-11:10 AM | Athena A     | Community and Business Partnerships Big and Small   | In this session, we will look at how Coleman Middle School, a Georgia Department of Education STEAM Certified School, in Duluth, GA has established relationships with the community and businesses to benefit the students and teachers with successful partnerships and how you can develop this at your school. We will also look at how to secure grant funding for your school with these partnerships.  | Sheila    | Harmony   | Community and Business Partnerships                           | K-2 teachers, 3-5 teachers, 6-8 teachers, 9-12 teachers, Administrators | All Levels   |
| Monday: 10:20-11:10 AM | Athena B     | Hands-On Nanotechnology Lessons for Middle and High School Classrooms   | We will demonstrate how nanotechnology can fit into secondary science classrooms (physical science, physics, chemistry, and biology) by using standards-based hands-on activities. All of the lessons have been tested in classrooms and use relatively inexpensive materials.  | Quinn     | Spadola   | Emerging Technologies   | 6-8 teachers, 9-12 teachers   | All Levels   |
| Monday: 10:20-11:10 AM | Athena D     | Preparing Students to be Innovators   | Are we preparing our students to be innovators or imitators? CEO's voted the skill of 'creativity' to be the 3rd most important skill for graduates. How can it be taught? Should Design Thinking should be required curriculum? Discover if the ability to innovate is a muscle that needs practice!   | Gail      | Tate      | Community and Business Partnerships                           | K-2 teachers, 3-5 teachers, 6-8 teachers, 9-12 teachers, Administrators | Introductory |
| Monday: 10:20-11:10 AM | Athena E     | STEAM Game of Games(Using Game Design to integrate ART, spark Creative Thinking and develop Problem Solving skills) | Do your students love digital games, but you are not sure where to begin? There are a variety of free game design programs that are easy to scaffold from your beginning designer to the professional! This is a great way to get your students using their ART skills through digital design as well as learning programming. I love teaching through Game Design as much as my students love learning about it. Game Design is the "Game of Games" in the STEAM Classroom.  | Amy       | Smith     | Integrating Fine Arts with Fidelity: STEAM                    | 3-5 teachers, 6-8 teachers  | Introductory |
| Monday: 10:20-11:10 AM | Athena F     | Introduction to the Electromagnetic Spectrum  | Explore how animals utilize ultraviolet and infrared radiation as an introduction to teaching the electromagnetic spectrum.   | Jade      | Ricketts  | Interdisciplinary Teaching of Georgia Standards of Excellence | 3-5 teachers, 6-8 teachers, 9-12 teachers                               | Introductory |
| Monday: 10:20-11:10 AM | Athena G     | STEAMing Through the Curriculum   | Experience how students work as scientists, technologists, engineers, makers and poets through a global perspective that enhances existing core curricular courses. Attendees will participate in classroom-tested projects to learn how they challenge students to apply the core curriculum in real-world situations.   | Brad      | Fountain  | Integrating Fine Arts with Fidelity: STEAM                    | K-2 teachers, 3-5 teachers, 6-8 teachers                                | Introductory |
| Monday: 10:20-11:10 AM | Olympia 1    |   |   |           |           |   |   |              |
| Monday: 10:20-11:10 AM | Parthenon 1  | STEM in the Classroom with Children's Literature!   | Are you new to STEM? Or do you just want to incorporate more STEM lessons and concepts into your daily classroom routines? If so, this is the session for you! This session is for both classroom teachers and STEM lab teachers. We will show you how to take children's books and turn your literacy block into a STEM lesson as well. Social Studies, Science, and Math lessons can start with a children's book and quickly become an engaging, hands-on STEM lesson. Ex: Room on the Broom - Great story for retelling, characters, and main idea. However, we can add engineering, math, and science to turn this literacy lesson into a STEM lesson as well! Perfect for those just starting out with STEM or if you are looking for more engaging ways to teach your other core subjects using STEM!                                  | Jenny     | Hendrix   | Interdisciplinary Teaching of Georgia Standards of Excellence | K-2 teachers, 3-5 teachers, Administrators                              | All Levels   |
| Monday: 10:20-11:10 AM | Partnenon 2  | A School that Meets the Need  | How can we make our school sustainable? Focusing on the increasing population in our community, we will determine what adjustments we could make to our school to make it sustainable for generations to come. Students will design a blueprint for renovations and create a scale model of their ideas to present to the administration team.  | LeShea    | Hermansen | Integrating Fine Arts with Fidelity: STEAM                    | 9-12 teachers, Administrators   | Introductory |
| Monday: 10:20-11:10 AM | Grand Hall 2 | Inclusive Practices in STEAM  | This presentation will highlight the processing skills needed for mixed ability students to access STEAM activities and instructional tasks. Educators will be given strategies and bypass functions that will allow for students to not only engage in STEAM activities, but feel empowered to participate in inquiry-based activities.  | Kimberly  | Gregory   | Planning for Equity: STE(A)M for All Students                 | K-2 teachers, 3-5 teachers, 6-8 teachers, 9-12 teachers, Administrators | Introductory |
| Monday: 10:20-11:10 AM | Grand Hall 3 | Strategic Planning for STEM Success   | Achieving STEM or STEAM certification can be a challenging effort. Why work harder when you can work smarter. This session will present a strategic planning process that can be used by districts, schools, or programs within a school to help, not only with certification, but developing a customized, quality STEM initiative.  | Brene     | Bradley   | Planning for Equity: STE(A)M for All Students                 | Administrators  | Introductory |
| Monday: 10:20-11:10 AM | Grand Hall 4 | STE(A)Ming is Success for All   | All students deserve a quality STE(A)M education. STE(A)M not only makes learning relevant and engaging but provides an avenue for all students to one day be successful in college and careers. All students regardless of race, ethnicity, gender and/or disabilities can thrive in a STE(A)M focused environment. M. Agnes Jones Elementary School in Atlanta Public Schools has a testimony and journey to share with you! M. Agnes Jones Elementary School will share how STE(A)M has leveled the playing field for ALL of the students they serve. The shared testimonies will tell how a high poverty school with a high special education population became STEM AND STEAM GADOE certified by ensuring ALL students were engaged in a quality school-wide STE(A)M integrated curriculum. We are POWERED by STEAM and Led by STUDENTS! | Margul    | Woolfolk  | Planning for Equity: STE(A)M for All Students                 | K-2 teachers, 3-5 teachers, 6-8 teachers, Administrators                | Introductory |
| Monday: 10:20-11:10 AM | Grand Hall 5 | Using a Horizontal Alignment Team for Interdisciplinary STEM in 9th grade   | Our 9th grade Horizontal Alignment Team (HAT) formed three years ago to better support interdisciplinary teaching. HAT consists of 9th grade CTAE, ELA, Math, Environmental Science, and Research teachers collaborating together for student success. Meeting every other week, teachers have successfully built three signature interdisciplinary learning experiences for our students with the Fall Water Symposium, Winter Apps for Good Showcase, and the Spring Research Poster Competition. The design and lessons learned from each of these interdisciplinary projects will be shared.  | Amanda    | Baskett   | Interdisciplinary Teaching of Georgia Standards of Excellence | 9-12 teachers, Administrators   | Advanced     |
| Monday: 10:20-11:10 AM | Oconee 1     | STEM SMART START  | Do you have new teachers in your building? Are you wondering how to get them caught up? Come and see how Evoline C. West engages new staff members in STEM SMART START.   | Jennifer  | Burton    | Planning for Equity: STE(A)M for All Students                 | K-2 teachers, 3-5 teachers, 6-8 teachers, 9-12 teachers, Administrators | All Levels   |
| Monday: 10:20-11:10 AM | Oconee 2     |   |   |           |           |   |   |              |
| Monday: 10:20-11:10 AM | Cypress 1    |   |   |           |           |   |   |              |

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| Monday: 10:20-11:10 AM | Empire 1    |  |   |                  |          |   |   |              |  |
| Monday: 10:20-12:10 AM | Athena C    | The Outbreak-Purposeful Planning and Integration of PBLs in Elementary Classrooms            | The goal of this session is to provide participants with a practical approach to mapping out integrated lessons using exciting and relevant phenomena, that are aligned to the Georgia Standards of Excellence. Participants will leave this session with a toolbox of collaborative planning tool that serves as an efficient model for integration and producing a "good" STEM/STEAM PBL or lesson.   | Kassidy          | Moore    | Interdisciplinary Teaching of Georgia Standards of Excellence | K-2 teachers, 3-5 teachers  | Introductory |  |
| Monday: 10:20-12:10 AM | Athena H    | Leveraging Community Based Stakeholders  | The involvement of key multi-based community stakeholders and partnerships can dramatically improve the success of any funding program. This workshop was created primarily to introduce a set of practices to activate a meaningful stakeholder body. Our workshop provides valuable insight on how to engage, involve, sustain and evaluate your local community stakeholders.  | Commissioner Dee | Clemmons | Community and Business Partnerships                           | K-2 teachers, 3-5 teachers, 6-8 teachers, 9-12 teachers, Administrators | All Levels   |  |
| Monday: 10:20-12:10 AM | Athena I    | STEMart  | Extend learning using whole-brain activities in your science classroom. Allow your students to make more meaningful connections by tapping into both hemispheres of the brain. We will learn about using foldables and art to enhance science learning through make-and-take lessons and centers.   | Valerie          | Sellers  | Integrating Fine Arts with Fidelity: STEAM                    | K-2 teachers, 3-5 teachers, 6-8 teachers, 9-12 teachers                 | All Levels   |  |
| Monday: 10:20-12:10 AM | Olympia 2   | Costume Design on a Budget: Versatile Tools and Creative Solutions                           | A workshop with April Andrew, Costume Designer and the Assistant Costume Shop Manager at the Alliance Theatre for an introduction to basic costume design principles and practical applications (on a budget) for classroom, school, and community based productions. Learn to stretch your budget by looking at ordinary objects and seeing their creative potential, while effectively communicating with your audience. No previous costuming experience or sewing skills required!  | April            | Andrews  | Integrating Fine Arts with Fidelity: STEAM                    | 3-5 teachers, 6-8 teachers, 9-12 teachers                               | All Levels   |  |
| Monday: 10:20-12:10 AM | Cypress 2   | Planning for the Integration of Math and Science   | The integration Math and Science instruction is a cornerstone to the success of the school's STE(A)M program. Nonetheless, the planning for the integration of Math and Science sets the standard for how the instruction will be executed. Through a well designed approach that leads from the analysis of Standards, the creation of a Standards Cross Walks, and the development of lessons/ common assessments, we, at Chesney Elementary, have placed our grade levels on the course to highly functioning Math and Science integrated instruction through highly effective planning.   | Tony             | Patino   | Interdisciplinary Teaching of Georgia Standards of Excellence | K-2 teachers, 3-5 teachers  | All Levels   |  |
| Monday: 10:20-12:10 AM | Willow      | Become a National Geographic Certified Educator  | Join us to learn about National Geographic's free Educator Certification Program. Complete Phase 1 in this session, diving into resources that will fit into your planned curriculum. Certified educators receive special access to National Geographic education resources, including travel fellowships, leadership opportunities, and an online community of like-minded peers.  | Carley           | Lovorn   | Interdisciplinary Teaching of Georgia Standards of Excellence | K-2 teachers, 3-5 teachers, 6-8 teachers, 9-12 teachers, Administrators | Introductory |  |
| Monday: 10:20-12:10 AM | Empire 2    | What Research Tell Us about English Learners in STEM Subjects                                | This presentation will be based on the recently published National Academy of Science consensus report on supporting English learners in STEM subjects. Participants will have the opportunity to discuss the findings and recommendations of the report and brainstorm on how to use those insights to support English language learners in their communities.   | Juan-Carlos      | Aguiar   | Planning for Equity: STE(A)M for All Students                 | K-2 teachers, 3-5 teachers, 6-8 teachers, 9-12 teachers, Administrators | All Levels   |  |
| Monday: 11:20-12:10 PM | Athena A    |  |   |                  |          |   |   |              |  |
| Monday: 11:20-12:10 PM | Athena B    |  |   |                  |          |   |   |              |  |
| Monday: 11:20-12:10 PM | Athena D    | Teaching Empathy Through STEM/STEAM  | In this session we will answer the question, " how do we teach our students to think about someone other than themselves?"  | Chandra          | Brandel  | Think Globally, Act Locally-Project Based Learning            | K-2 teachers, 3-5 teachers, 6-8 teachers, 9-12 teachers, Administrators | All Levels   |  |
| Monday: 11:20-12:10 PM | Athena E    | History for All: Building Equitable Access to Learning in STE(A)M Classes                    | Participants in the "History for All" workshop will learn and apply the principles of blended-learning and personalization to foster equitable student access to learning and assessments. Emphasis will be placed on how to employ technology to scaffold appropriate measures of choice and assistance for a diverse range of learners. Participants will use the tools provided within the workshop to design one or more lesson plans that they can use in their own classes. Workshop resources will be shared via a website that features a pedagogical overview of research supporting blended learning, personalization, and STE(A)M projects, along with rubrics and a modifiable lesson template for ongoing use. A range of STE(A)M project exemplars will be featured to highlight the improved learning outcomes that are possible when content is made more accessible to all students. | Kerry            | Smith    | Planning for Equity: STE(A)M for All Students                 | 9-12 teachers   | Introductory |  |
| Monday: 11:20-12:10 PM | Athena F    |  |   |                  |          |   |   |              |  |
| Monday: 11:20-12:10 PM | Athena G    | Making Waves in Middle School: Information Transfer  | Focus on getting started with STEM education while effectively teaching the Georgia Standards of Excellence through inquiry-based practices. Experience lessons that demonstrate the learning progression.  | Terri            | George   | Interdisciplinary Teaching of Georgia Standards of Excellence | 6-8 teachers  | Introductory |  |
| Monday: 11:20-12:10 PM | Olympia 1   |  |   |                  |          |   |   |              |  |
| Monday: 11:20-12:10 PM | Parthenon 1 | Using STEM with Real World Connections to Teach Georgia Science and Social Studies Standards | This session will help turn your average, ordinary science and social studies lessons into fun and exciting real-world STEM lessons that engage all learners. Learn fun new ways to help teach Georgia Science and Social Studies Standards with a real-world STEM connections. See examples and exciting ways to transform those boring standards into a fun and engaging STEM lessons. Session will focus on one Georgia Science and Social Studies Standard from each grade level (K-5th) and how it can be transformed into real-world STEM. You will leave with at least one way to integrate STEM and real world into each one of your grade level's Georgia Science and Social Studies Standards.  | Jenny            | Hendrix  | Interdisciplinary Teaching of Georgia Standards of Excellence | K-2 teachers, 3-5 teachers, Administrators                              | Introductory |  |

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| Monday: 11:20-12:10 PM | Partnenon 2  | Rube Goldberg - Making the Simple into the Complex                        | As a fourth grade teacher, we are tasked with teaching force & motion and simple machines. A Rube Goldberg machine encompasses both. Being a STEM school, we used our engineering design process to integrate Science, Engineering, and Technology into the project. Students were tasked with designing and building the Rube Goldberg machine within certain constraints. The presentation will take you through the planning, execution, and reflection of the project.   | Sterling | Hope      | Interdisciplinary Teaching of Georgia Standards of Excellence | 3-5 teachers  | Introductory |
| Monday: 11:20-12:10 PM | Grand Hall 1 | STEAM Thinking: Designing with the End in Mind                            | Using design thinking, participants will "reinvision" everyday found objects through the lens of purpose, functionality, and benefit to society. This activity is one that participants can walk away with and immediately implement in their classrooms.  | Andrea   | Wright    | Integrating Fine Arts with Fidelity: STEAM                    | K-2 teachers, 3-5 teachers, 6-8 teachers                                | Introductory |
| Monday: 11:20-12:10 PM | Grand Hall 2 |   | GADOE UPDATES  |          |           |   |   |              |
| Monday: 11:20-12:10 PM | Grand Hall 3 | Encouraging minds by embracing their passions                             | Want to change the world? One child at a time?? YOU CAN!!! Have you been searching for possibilities to integrate your teaching across the curriculum? Not sure where to begin? Seems overwhelming? Just as we teach creative problem solving, we need to find creative ways to solve these real-world problems for ourselves. To enable closure of the learning gaps for not only us but for our kids as well. Utilizing STEAM practices, we will show you how to work with your students realizing their greatest strengths as you may be able to identify your own, as an educator, as well! Students will love to arrive in your class each day when they know their expectations, they learn to work collaboratively, communicate, tap into their creativity (even when they think they do not have any), become independent critical thinkers, and most importantly reach for their own stars. This high-energy, interactive program will give you the tools to break-out of the "Box" of more traditional teaching techniques. Facilitating in this inquiry-based manner will transform your teaching into an exciting, diverse, student-centered environment that meets the needs of ALL students including differentiation for: Students with exceptionalities, Title One, Gifted, and Talented. This immersive experience will provide you the necessary steps for you to begin your adventurous journey or may offer a seasoned veteran additional resources to add to their toolbox. | Erin     | Peck      | Planning for Equity: STE(A)M for All Students                 | 3-5 teachers, 6-8 teachers, 9-12 teachers                               | All Levels   |
| Monday: 11:20-12:10 PM | Grand Hall 4 | The PAIR Model: Teaching Classroom Content through the Arts.              | Based on the success of the PAIR Program in Muscogee and Harris Counties, this workshop will introduce teachers and administrators to arts integration strategies that can be applied to any classroom. Using the principles of music, drama, visual art, and dance, attendees will learn a few of the practical PAIR Strategies, as well as the methodology behind them.  | Austin   | Sargent   | Integrating Fine Arts with Fidelity: STEAM                    | K-2 teachers, 3-5 teachers, 6-8 teachers, 9-12 teachers, Administrators | All Levels   |
| Monday: 11:20-12:10 PM | Grand Hall 5 | Closing the Excellence Gap: Successful Approaches & Roundtable Discussion | Have you witnessed a disparity in the percent of lower-income versus higher-income students who reach advanced levels of academic performance? This has been coined the 'excellence gap' and must be addressed so that all students can reach their highest potential. This session will look at three approaches STEM high schools have taken to help close the excellence gap: K-8 pipeline development, 9-12 achievement support, and enhancements to college & career counseling.  | Amanda   | Basket    | Planning for Equity: STE(A)M for All Students                 | 9-12 teachers   | All Levels   |
| Monday: 11:20-12:10 PM | Grand Hall 6 | Robots, Robots, Robots Everywhere in the Classroom                        | Participants will learn how research demonstrates the importance of STEM education, and how it is most impactful when students are engaged. Integrating coding and robotics into STEM education pre-K through twelfth grade is easy with various types of hands-on robotics and electronics with in the classroom. Learn how students can be engaged within STEM lessons while integrating robotics and coding into those engaging classroom lessons and projects. This session will introduce strategies and tools available with the use of robotics, electronics, and coding to help increase student engagement, which will increase active learning and create problem solvers. Some various robotics and electronics that will be used within this session will include: Kibo, Edison, cubelets, sphereos, mambo parrot drones, etc.   | Heidi    | Goodin    | Emerging Technologies   | K-2 teachers, 3-5 teachers, 6-8 teachers, 9-12 teachers, Administrators | All Levels   |
| Monday: 11:20-12:10 PM | Oconee 1     | Mind Blowing Food Science for Every Classroom                             | Who doesn't love to eat? We will blow your minds with fun interactive Food Science Activities that can be used to teach math, science, ELA, and CTAE standards in PK-8th grade. Participants will leave with several hands-on lesson plans and activities that will grab your student's attention and make them hungry for more information!   | Amanda   | Hayes     | Interdisciplinary Teaching of Georgia Standards of Excellence | K-2 teachers, 3-5 teachers, 6-8 teachers, 9-12 teachers                 | All Levels   |
| Monday: 11:20-12:10 PM | Oconee 2     | Oh, the Humanities!   | This session is for teachers, administrators, or anyone who is wondering how the Humanities can successfully and meaningfully participate in STE(A)M education. Using the lens of High Quality Lesson Planning, you will walk away from this session with concrete strategies about how to transform literary, historical, and creative writing lessons with STE(A)M, including successful units from British Literature, World History, and Literary Arts. If you're not a humanities teacher, come take notes for a colleague who feels overwhelmed! These strategies increase student engagement and improve learning outcomes across the board.  | Amber    | Player    | Interdisciplinary Teaching of Georgia Standards of Excellence | 6-8 teachers, 9-12 teachers, Administrators                             | Introductory |
| Monday: 11:20-12:10 PM | Cypress 1    |   |  |          |           |   |   |              |
| Monday: 11:20-12:10 PM | Empire 1     | Keeping Our Screen-Agers Engaged in Class                                 | Hands-On Presentation with FREE resources - How do we capture the attention of our Millennial Generation students who spend so much time "connected" to technology? We engage these "Screen-agers" with free AR/VR apps that are used on tablets and mobile devices. Come join us and see how AR apps will change how your students learn...keep them engaged...and make them excited about school again.  | Joe      | Hutcheson | Emerging Technologies   | 3-5 teachers, 6-8 teachers, 9-12 teachers, Administrators               | Introductory |
| Monday: 1:20-2:10 PM   | Athena A     | The Interdisciplinary Learning Community: Arts with Fidelity              | Want to see how our STEAM school utilizes members to support standards-based units across the learning platform? Stop by and hear how Heather McKeen and Melissa Hammonds explore models of interdisciplinary learning utilizing the learning community while incorporating math, science and the arts with fidelity. Take away resources are included! Examine successful ideas, strategies, and lessons that will work for your school STEAM culture.  | Melissa  | Hammonds  | Integrating Fine Arts with Fidelity: STEAM                    | K-2 teachers, 3-5 teachers  | Advanced     |

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| Monday: 1:20-2:10 PM | Athena B     | Once Upon A STEM...  | In a classroom not-so-far away, teachers have found a way to seamlessly integrate STEM principles into their reading and writing lessons. Let's look through the STEMagic Mirror and see what a dream it can be when you use STEM and the Engineering Design Process to guide your instruction. By the end of the day you'll be able to say, "I'm not afraid of the Big, Bad, STEM!"   | Joanne   | Ingram    | Interdisciplinary Teaching of Georgia Standards of Excellence | K-2 teachers, 3-5 teachers  | Introductory |
| Monday: 1:20-2:10 PM | Athena D     |  |  |          |           |   |   |              |
| Monday: 1:20-2:10 PM | Athena E     | STEM/STEAM Innovation Lab: Building and Environment of Innovation for All Students             | The Innovation Lab in the Paulding County School District has been an amazing resource for teachers across the district. Teachers wanted to increase STEM/STEAM initiatives in their schools, but did not always have access to the resources, materials, or training necessary to make it a success. Through grant funding, the district was able to provide a learning and resource hub that ensures teachers have what they need to implement inquiry-based learning. Join us to talk about our journey during our implementation year and how we intend to expand to ensure ALL students benefit from the STEM/STEAM resources   | Sarah    | Graham    | Planning for Equity: STE(A)M for All Students                 | K-2 teachers, 3-5 teachers, 6-8 teachers, 9-12 teachers                 | Introductory |
| Monday: 1:20-2:10 PM | Athena F     | STEAM in Early Learning  | Methods to Infuse STEAM in Early Learning Curriculum and Everyday Activities   | William  | Scandrett | Integrating Fine Arts with Fidelity: STEAM                    | K-2 teachers, Administrators  | Introductory |
| Monday: 1:20-2:10 PM | Athena G     | Research Through Skype   | Understanding how to implement Skype in student research.  | Celithia | Tahtinen  | Think Globally, Act Locally- Project Based Learning           | K-2 teachers, 3-5 teachers  | Introductory |
| Monday: 1:20-2:10 PM | Olympia 1    | STEAM for All: Embracing Neurodiversity through Inclusive STEAM Programs                       | Tapestry Public Charter School serves a unique population, where half of the students have special needs and half are neurotypical. We have created a STEAM-focused academic program that allows all students to participate and thrive, regardless of their unique learning differences. Students with special needs are underrepresented in STEAM programs, and we feel that they can truly flourish in a STEAM program with the proper supports. This presentation will highlight some of the ways that we strive to make our STEAM program more accessible, from large-scale elements such as curricular design to small-scale elements such as classroom routines and structures.   | Matthew  | Tyson     | Planning for Equity: STE(A)M for All Students                 | 6-8 teachers, 9-12 teachers   | Introductory |
| Monday: 1:20-2:10 PM | Parthenon 1  | Using STEM with Real World Connections to Teach Georgia Science and Social Studies Standards   | This session will help turn your average, ordinary science and social studies lessons into fun and exciting real-world STEM lessons that engage all learners. Learn fun new ways to help teach Georgia Science and Social Studies Standards with a real-world STEM connections. See examples and exciting ways to transform those boring standards into a fun and engaging STEM lessons. Session will focus on one Georgia Science and Social Studies Standard from each grade level (K-5th) and how it can be transformed into real-world STEM. You will leave with at least one way to integrate STEM and real world into each one of your grade level's Georgia Science and Social Studies Standards.   | Jenny    | Hendrix   | Interdisciplinary Teaching of Georgia Standards of Excellence | K-2 teachers, 3-5 teachers, Administrators                              | Introductory |
| Monday: 1:20-2:10 PM | Partnenon 2  | STEMart and foldables  | How to use foldables and art to enhance your science lessons.  | Valerie  | Sellers   | Planning for Equity: STE(A)M for All Students                 | K-2 teachers, 3-5 teachers  | All Levels   |
| Monday: 1:20-2:10 PM | Grand Hall 1 | Ag in the Science and Math Classroom: Moving Beyond Just Gardens                               | Teaching agriculture has moved well past just planting a garden. Join us as we discuss how drones, weather stations, hydroponic towers, bee hives, and yes, even gardens can make any science or math classroom fun. We will give practical information and real life applications for the science and math classroom.   | Eric     | Thompson  | Interdisciplinary Teaching of Georgia Standards of Excellence | K-2 teachers, 3-5 teachers, 6-8 teachers, 9-12 teachers                 | Introductory |
| Monday: 1:20-2:10 PM | Grand Hall 2 | Designing Meaningful Partnerships  | Partnerships that extend beyond the school walls are essential for high quality STEM/STEAM experiences for students. Many schools struggle with finding and developing sustained, long-term, mutually beneficial partnerships. This interactive work session will explore a variety of partnership examples and spend time identifying specific steps and strategies to get the most out of your partnerships.   | Sally    | Creel     | Community and Business Partnerships                           | K-2 teachers, 3-5 teachers, 6-8 teachers, 9-12 teachers, Administrators | All Levels   |
| Monday: 1:20-2:10 PM | Grand Hall 3 | Connecting the Dots For Effective Arts Integration   | Planning and execution strategies will be shared for effective ways of integrating the arts with science, technology, engineering, and math. We will specifically on the art elements and principles of design and they can be an entry point for both teachers and students.  | J.W.     | Mozley    | Integrating Fine Arts with Fidelity: STEAM                    | 3-5 teachers, 6-8 teachers, 9-12 teachers, Administrators               | All Levels   |
| Monday: 1:20-2:10 PM | Grand Hall 4 | Girls Who Code: Teaching Girls to Code and Change the World                                    | Join Kristina Smith, Georgia Regional Partnership Coordinator at Girls Who Code, as she talks about embracing the challenge to close the gender gap in technology, and why teaching girls to be brave as they use coding to change the world is the key to addressing this disparity.<br><br>Together, we will discuss how to start a Girls Who Code Club, participate in hands-on activities that you can walk away with, and engage in a design thinking activity to help you bring code and gender equity to your community. We hope you will join us in our movement to close the gender gap in technology!  | Kristina | Smith     | Planning for Equity: STE(A)M for All Students                 | 3-5 teachers, 6-8 teachers, 9-12 teachers, Administrators               | All Levels   |
| Monday: 1:20-2:10 PM | Grand Hall 5 | Making Senior Year Relevant: College Advisement, Research, Internship, & Specialized Electives | Does an outbreak of Senioritis always seem on the horizon? This session will share strategies for making senior year more relevant to students. The structure of a College Readiness Retreat to build early momentum will be shared along with student feedback results from the first year. The rotating options for senior specialized electives at Rockdale Magnet School for Science and Technology, including Organic Chemistry and History of Math, will be presented. This session will also describe our internship and research Senior Capstone requirement including the advisement process to help students select their path. We will share our personalized college advisement process that helps students not only apply to schools that are a good fit for them but supports them through the scholarship and enrollment process. | Amanda   | Baskett   | Planning for Equity: STE(A)M for All Students                 | 9-12 teachers, Administrators   | All Levels   |
| Monday: 1:20-2:10 PM | Grand Hall 6 |  | GADOE UPDATES  |          |           |   |   |              |
| Monday: 1:20-2:10 PM | Oconee 1     | Middle School Genetic Engineering  | Smithsonian Curriculum: Genes and Molecular Machines unit explores all the aspects of genetics in a 3D lesson format. Come explore this middle school unit and explore the genetics of fish species.   | Terri    | George    | Interdisciplinary Teaching of Georgia Standards of Excellence | 6-8 teachers  | Introductory |
| Monday: 1:20-2:10 PM | Oconee 2     |  |  |          |           |   |   |              |

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| Monday: 1:20-2:10 PM | Cypress 1 | STEM Research: A Tool for College and Career Readiness in STEM                               | STEM Research provides students to engage in project based learning opportunities to investigate the world around them and scientific concepts and theories. STEM Research also provides a great opportunity for students to develop a diversity of skills that will prepare them for college and career in STEM. STEM Research can be as simple as a short term project for a classroom assignment, field experiment in the school greenspace or local park or a project for a STEM fair. STEM Research provides opportunities for students to develop their STEM Literacy, Research and Laboratory Skills. It also provides them with opportunities to learn transferable skills such as critical thinking, problem solving and oral and written communication. In this workshop, attendees will learn techniques on how to incorporate STEM Research into their curriculum. | Tokiwa      | Smith       | Think Globally, Act Locally-Project Based Learning            | 9-12 teachers, Administrators   | All Levels   |
| Monday: 1:20-2:10 PM | Empire 1  |  |  |             |             |   |   |              |
| Monday: 1:20-3:10 PM | Athena C  | Panel: STEAM Artists-in-Residence  | Six Georgia Council for the Arts Registry teaching artists share their experiences with STEAM partnership projects   | Jeff        | Mather      | Integrating Fine Arts with Fidelity: STEAM                    | K-2 teachers, 3-5 teachers, 6-8 teachers, 9-12 teachers, Administrators | All Levels   |
| Monday: 1:20-3:10 PM | Athena H  | Fire Forensics   | At the forefront of sustaining relationships between schools, business, and community exists an authentic scenario of fire forensics. Free resources from Underwriters Laboratories and a partnership with both local firefighters and arson investigators has allowed Cobb county teachers to provide students with an authentic way of learning through a "Fire Forensics" module created by Underwriters Laboratories. As a result of this trifecta, we would like to share our experiences with workshop participants, as well as, provide an opportunity to investigate basics of fire dynamics, thermal energy transfer, and gas laws using both the UL free curriculum and the experts from our local fire department.  | Amy         | Gilbert     | Community and Business Partnerships                           | 6-8 teachers, 9-12 teachers   | Introductory |
| Monday: 1:20-3:10 PM | Athena I  | Technology Tools to support STEM Learning  | Are you looking for the best technology resource for students to use to produce artifacts of STEM learning? Are you looking for effective ways to integrate technology and science in your lessons? Attendees will leave with a portfolio of tools to support EVERY K-5 Science Standard in Georgia.   | Colleen     | Cauffiel    | Interdisciplinary Teaching of Georgia Standards of Excellence | K-2 teachers, 3-5 teachers  | All Levels   |
| Monday: 1:20-3:10 PM | Olympia 2 | Using Drama/Simulation to Explore Deforestation  | Drama and Simulation can be effective in exploring the historical, social, emotional, political and ethical issues surrounding habitat loss and deforestation. Drama allows participants to take on a role/roles and to have a first-hand understanding of the issues involved with any particular problem. Process Drama and the use of student in role will be used to explore these social/political/ethical/scientific concerns in a hands-on exploration.   | Randy       | Taylor      | Integrating Fine Arts with Fidelity: STEAM                    | 3-5 teachers, 6-8 teachers, 9-12 teachers                               | Introductory |
| Monday: 1:20-3:10 PM | Cypress 2 | Change the Game with Breakout EDU  | In this session follow the teacher and student journey of a PBL project from concept to STEM night. Get details on how to change students from consumers to creators using, Engineering Design Process, Game Design Elements, and Cross Curriculum learning targets. Change the Game with student-created BreakoutEDU Games.   | Patricia    | Thomas      | Think Globally, Act Locally-Project Based Learning            | 3-5 teachers, 6-8 teachers  | All Levels   |
| Monday: 1:20-3:10 PM | Willow    | STARBASE ROBINS: Inviting Passion for STEM / STEAM to be the Driving Force for the Classroom | Attendees will be able to view some of the hands on activities that we perform at STARBASE, as well as see how lessons can be geared toward varying grade levels. In this interactive workshop, attendees will be to get a glimpse of what the student experience on their trip to STARBASE and learn more about the partnership between the district through Warner Robins Air Force Base.Come and learn how to keep students engaged in your lessons from the time they enter, until they leave.   | Wesley      | Fondal, Jr. | Interdisciplinary Teaching of Georgia Standards of Excellence | 3-5 teachers, 6-8 teachers  | All Levels   |
| Monday: 1:20-3:10 PM | Empire 2  | Science and Engineering for Grades 6-12  | The presentation will address the findings of the Consensus Study Report released by the National Academies of Science, Engineering, and Medicine on the importance of engaging all students in science investigations and engineering design.   | Juan-Carlos | Aguiar      | Interdisciplinary Teaching of Georgia Standards of Excellence | 6-8 teachers, 9-12 teachers, Administrators                             | Advanced     |
| Monday: 2:20-3:10 PM | Athena A  | Using Argument Driven Inquiry to Support PBL Integration                                     | Argument Driven Inquiry requires students to apply the CER(J), Claims, Evidence, Reasoning, Justification, framework in order to work through the process of approaching a scientific question/investigation. We have modified this approach to apply to content that ranges from isolated to semester long PBL (Project Based Learning) curriculum. Come see how this approach has allowed general education through advanced placement level students to access STEM curriculum and synthesize their learning across multiple classes and content levels.  | Lytic       | Portwood    | Interdisciplinary Teaching of Georgia Standards of Excellence | 9-12 teachers, Administrators   | All Levels   |
| Monday: 2:20-3:10 PM | Athena B  | STEM In Every Classroom - Providing Access, Outreach, Integrated Curriculum for All Students | In a world where teachers are constantly asked to do more with less, how do we promote accessible STEM learning for all students? Preparing students starts with allowing all levels of students access to Integrated STEM curriculum which is project-based and real-world application driven. Come learn about how we have incorporated and provided access to integrated STEM based PBL Curriculum to a wide range of students with varying abilities and strengths and how this has translated into a more diverse group of students being inspired to continue STEM Careers or education.   | Tema        | Hoskins     | Planning for Equity: STE(A)M for All Students                 | 6-8 teachers, 9-12 teachers, Administrators                             | All Levels   |
| Monday: 2:20-3:10 PM | Athena D  | A Survey of Robot Options for Elementary Education   | We discuss a number of robot products that were all used in the STEAM lab this past year for elementary education in grades kindergarten through 5th. Robotics encompasses not only sensors, actuators and computer control, but also mechanical components. The products reviewed include LEGO Coding Express, Ozobot Bit and Evo, LEGO Power Functions kits, the Sphero SPRK+, the Snap Circuits Jr. kits, and the LEGO Ev3 kits. The talk includes a discussion of pluses and minuses of each option, appropriate grade level, coding options, and classroom experiences.   | Robert      | Cook        | Emerging Technologies   | K-2 teachers, 3-5 teachers, Administrators                              | Introductory |
| Monday: 2:20-3:10 PM | Athena E  | Building the plane while you fly - the thrill of cross curricular teaching                   | Dive into the many ways you can accomplish cross curricular teaching. See the behind the scenes planning and the diverse execution of incorporating biology, engineering, math, and language arts into instruction.  | Mary        | Morris      | Interdisciplinary Teaching of Georgia Standards of Excellence | 9-12 teachers   | All Levels   |
| Monday: 2:20-3:10 PM | Athena F  | Project Chimps Educational Opportunities   | Project Chimps is a sanctuary in the Blue Ridge Mountains of Georgia for former research chimpanzees. Learn how you can bring the chimpanzees (not the live ones!) into your classroom, organize a STEAM project to donate to the chimps for their enrichment, and options for field trips and on-site education programs.   | Ali         | Crumpacker  | Community and Business Partnerships                           | K-2 teachers, 3-5 teachers, 6-8 teachers, 9-12 teachers                 | Introductory |

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| Monday: 2:20-3:10 PM | Athena G     | Change the way your students see the world forever! Teach observation as a habit of mind. | Learn a simple teaching strategy for all grade levels that takes less than 10 minutes of class time and can be used with any subject. This daily routine instills observation as a habit of mind in your students and awakens their interest and awareness of details in everything around them. Writing skills, speaking skills, confidence levels, and content area knowledge are increased. Best of all students are highly engaged from the moment they walk through your door and it can be done without spending a penny. We all want our students to be great thinkers and problem solvers. In order to become those things they must first master observation skills. Come and learn how to instill observation as an automatic habit of mind in your students and change their lives forever! | Tracy              | Ingram                | Interdisciplinary Teaching of Georgia Standards of Excellence | K-2 teachers, 3-5 teachers, 6-8 teachers, 9-12 teachers, Administrators | All Levels   |
| Monday: 2:20-3:10 PM | Olympia 1    | STEM Inspirations from the GSE  | In this session we will share STEM projects that our teachers have developed that align to the investigations, designs, and constructions of the Georgia Standards of Excellence. Projects correlated to Georgia Standards of Excellence for grades 3, 4, and 5 will be presented. Grading Rubrics will also be shared.  | Donna              | Fouts                 | Interdisciplinary Teaching of Georgia Standards of Excellence | 3-5 teachers  | Introductory |
| Monday: 2:20-3:10 PM | Parthenon 1  | STEM Connections Through Children's Literature  | Are you new to STEM? Or do you just want to incorporate more STEM lessons and concepts into your daily classroom routines? If so, this is the session for you! We will show you how to take children's books and turn your literacy block into a STEM lesson as well. Social Studies, Science, and Math lessons can start with a children's book and quickly become an engaging, hands-on STEM lesson. Ex: Room on the Broom - Great story for retelling, characters, and main idea. However, we can add engineering, math, and science to turn this literacy lesson into a STEM lesson as well! Perfect for those just starting out with STEM or if you are looking for more engaging ways to teach Science or Social Studies through STEM!   | Jenny              | Hendrix               | Interdisciplinary Teaching of Georgia Standards of Excellence | K-2 teachers, 3-5 teachers, Administrators                              | All Levels   |
| Monday: 2:20-3:10 PM | Partnenon 2  | Science Literacy Tools to Engage your Students  | Explore ways to engage students in scientific discussions, interactive reading, and writing in the STEM classroom for all students.  | Valerie            | Sellers               | Planning for Equity: STE(A)M for All Students                 | K-2 teachers, 3-5 teachers, 6-8 teachers, 9-12 teachers, Administrators | All Levels   |
| Monday: 2:20-3:10 PM | Grand Hall 1 | The Unlikely Fun with Engineering and Drama/Chorus  | The development of project based learning in the engineering, drafting and design pathway through collaboration with the drama and chorus departments  | Marianne           | Parker                | Integrating Fine Arts with Fidelity: STEAM                    | 9-12 teachers, Administrators   | Introductory |
| Monday: 2:20-3:10 PM | Grand Hall 2 | Girls Who STEM  | Over the past 3 years the STEM & Innovation Department in Cobb County has supported a number of programs designed to close the STEM gender gap. In this session we'll share how these programs were selected, which were most successful and how you can replicate effective programs in your schools/districts.   | Sally              | Creel                 | Planning for Equity: STE(A)M for All Students                 | 3-5 teachers, 6-8 teachers, 9-12 teachers, Administrators               | Advanced     |
| Monday: 2:20-3:10 PM | Grand Hall 3 | Curiosity Matters: STEM Activities & Career Readiness Resources                           | Tap into student interest and curiosity to make critical math, science, and career concepts relatable. EVERFI's engaging and interactive STEM & Career Readiness resources inspire students to pursue the careers of tomorrow. Learn how to bring STEM alive with the EVERFI learning modules! All resources are online, standards-aligned, student-paced, self-graded, and highly engaging. During this session, attendees will be given the tools to implement impactful technology in their classroom at NO COST.   | Holly              | Juras                 | STE(A)M is CTAE   | 3-5 teachers, 6-8 teachers, 9-12 teachers, Administrators               | Introductory |
| Monday: 2:20-3:10 PM | Grand Hall 4 | A Day in the Life of STEAM CAMP   | The creative and crazy chronicles of a day in the life of County Kid's STEAM Camp are the focus of this presentation. The unlikely pair of a fourth grade math teacher and the art teacher at a STEAM certified elementary school share their unique stories of the sweat and student successes that their collaborative efforts produced. Anyone interested in compelling STEAM enrichment for their community with an unorthodox approach should attend.   | Virginia & Shelley | McCullough & Thornton | Integrating Fine Arts with Fidelity: STEAM                    | K-2 teachers, 3-5 teachers  | Introductory |
| Monday: 2:20-3:10 PM | Grand Hall 5 | Student-led STEAM Summer Camp: A Model for Outreach & Leadership Training                 | Discover a structure and lessons learned from 10 years hosting a student-led summer STEAM camp at Rockdale Magnet School for Science and Technology. Our 9th-11th grade students serve as counselors. The counselors are responsible for designing the PBL focused curriculum for the rising 4th-8th grade campers. Our high school students implement the curriculum and are even responsible for daily communication back to parents. The processes and tools used for adult oversight during implementation of this successful outreach will also be shared.  | Amanda             | Baskett               | Think Globally, Act Locally-Project Based Learning            | 6-8 teachers, 9-12 teachers, Administrators                             | Introductory |
| Monday: 2:20-3:10 PM | Grand Hall 6 | Data Design: Turning Data into Artwork!   | Bridge to gap between Math, Science, and Art! Learn how to Guide your students through visualizing data to create designs using pattern, shape, and color.   | Jasmine            | Skeete                | Integrating Fine Arts with Fidelity: STEAM                    | 6-8 teachers, 9-12 teachers   | Introductory |
| Monday: 2:20-3:10 PM | Oconee 1     | STEM Research Happens Even With The Youngest Learners!                                    | Learn about how to carry out a year-long STEM Research project with Kindergartners in which students are actively researching, collecting data, collaborating with business partners, and giving back to the community with a civic contribution.  | Jessica            | Clark                 | Think Globally, Act Locally-Project Based Learning            | K-2 teachers  | Introductory |
| Monday: 2:20-3:10 PM | Oconee 2     | Getting Started With Coding & Robotics  | This workshop will provide teachers an opportunity to experience free/low cost methods of engaging students in coding & robotics (e.g. Microsoft Makecode/Microbit, Code.org, Ozobots, Edison), and learn how to introduce these concepts to their students in preparation for integrating robotics into their existing curriculum, creating a club, or starting a regional robotics competition.  | Will               | Dodd                  | Emerging Technologies   | K-2 teachers, 3-5 teachers, 6-8 teachers                                | Introductory |
| Monday: 2:20-3:10 PM | Cypress 1    | Earth Science Stem Unit   | Have you wondered how to integrate STEM into your classroom in a manageable way? This presentation will introduce you to tactics for introducing quality unit instruction in ways that impact learning using high yield strategies and hands on learning for your students.  | Natalia            | Seagreen              | Interdisciplinary Teaching of Georgia Standards of Excellence | K-2 teachers, 3-5 teachers  | Introductory |
| Monday: 2:20-3:10 PM | Empire 1     | Funding Your STEM Program with Student Entrepreneurial Projects                           | This presentation will demonstrate how to use the school garden for hands-on projects that align with science and math standards for grades K-5, as well as, give students opportunities to collect real world data. The use of community and business partners to extend the learning through guest speakers, donations and volunteers will be included. It will also explain how to fund a STEM program by selling student created products related to these garden projects at a "Market Day".  | Lisa               | Mitchell              | Planning for Equity: STE(A)M for All Students                 | K-2 teachers, 3-5 teachers  | Advanced     |

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| Monday: 3:20-4:10 PM | Athena A    | Equity in STEM with Smithsonian Institution   | Closing equity gaps in science, technology, engineering, and mathematics for under-represented groups of students begins with access to representation. To help address these gaps in equity, the National Museum of African American History and Culture's Center for Teaching and Learning is working to help educators and students recognize the contributions and impact African Americans have made in STEM. This interactive session will review the NMAAHC's culturally relevant and NGSS aligned STEM lessons and resources that have been created by K-12 Teacher Fellows to integrate the African American experience into the development of STEM for K-12 students and teachers. Lead by Smithsonian Institution Teacher Fellows, participants will learn about African American leaders in STEM, engage in STEM learning experiences that can be accessed via the Smithsonian Learning Lab website, and design solutions that creatively tackle issued related to equity gaps in STEM Education.   | Allison  | Randall         | Planning for Equity: STE(A)M for All Students                 | K-2 teachers, 3-5 teachers, 6-8 teachers, 9-12 teachers | All Levels   |
| Monday: 3:20-4:10 PM | Athena B    | Connecting the Arts and Different Disciplines: Using Close Looking and Gallery Teaching Techniques in the Classroom | Educators at the Georgia Museum of Art employ a variety of teaching strategies and gallery activities to inspire connections between works of art and student visitors. This interactive session will highlight different quick, accessible activities and close looking techniques that can be used in the classroom to integrate art into any lesson plan. It will also details museum STEAM programming and resources available to K-12 educators.  | Emily    | Hogrefe-Ribeiro | Integrating Fine Arts with Fidelity: STEAM                    | K-2 teachers, 3-5 teachers, 6-8 teachers, 9-12 teachers | Introductory |
| Monday: 3:20-4:10 PM | Athena C    | STEAM Ignites Cross-Curricular Learning   | Explore what successful STEAM learning looks like and how this cross-curricular approach transform teachers into learners and learners into teachers. Innovative teaching practices give students agency as they identify, investigate, and solve problems. Use an innovative STEAM project-planning framework that helps students plan the preparation, collaboration, implementation, and reflection needed for effective STEAM projects. Use authentic assessment rubrics that document what educators learn from students' project artifacts and empower student self-assessment. Participants will review ways to engage families in the STEAM approach to learning.  | Cindy    | Kerr            | Integrating Fine Arts with Fidelity: STEAM                    | K-2 teachers, 3-5 teachers, 6-8 teachers                | Introductory |
| Monday: 3:20-4:10 PM | Athena D    | Creating a New STEAM Lab for All Students   | We discuss the challenge of creating a new STEAM lab for 500 students (K to 5th grade) at a Title 1 public school. The constraints were to be low cost, to accommodate the current Connection schedule (PE Music Computer, 45 minutes each), and to fit within half of the Computer Lab space. The solution was to split every Computer Class every week, half STEAM, half computer lesson; then to swap the halves the second week. As a result, every student received a STEAM lesson every two weeks and every student received more small group (10-15), personal attention per class. The presentation discusses equipping the lab, designing the lessons, problems encountered and solved, and a brief retrospective on the first year's experience.   | Robert   | Cook            | Planning for Equity: STE(A)M for All Students                 | K-2 teachers, 3-5 teachers, Administrators              | Introductory |
| Monday: 3:20-4:10 PM | Athena E    | Using Edison Robots in the Classroom  | Join us as we explore how to incorporate the Edison Robot into our elementary classrooms to teach computational thinking and computer programming. Leave the class with ideas and lesson plans aligned to Georgia science standards. If you are are beginning coder, you can spend time investigating the Edison Robot and it's progressive programming languages: block, scratch and python.  | Cathy    | Fontenot        | Emerging Technologies   | K-2 teachers, 3-5 teachers                              | Introductory |
| Monday: 3:20-4:10 PM | Athena F    | The STEM of Golf Course Management: A Free Opportunity for 7-12 Students  | Founded in 1997, First Green is an innovative educational and environmental outreach program that uses golf courses as learning labs. First Green, a Golf Course Superintendents Association of America (GCSAA) program, pairs golf courses with local schools for unique Science, Technology, Engineering, and Mathematics (STEM) learning opportunities ( <a href="http://www.thefirstgreen.org/">http://www.thefirstgreen.org/</a> ) at the partnering golf course at NO COST to the participating schools. This unique program also introduces STEM career pathways in agronomy that most students are unaware of. The session will be presented by Ford Plantation's Director of Golf Course and Grounds Maintenance and green industry consultant, Nelson Caron and veteran 7th grade Life Science teacher and Presidential Innovation Award for Environmental Educators (PIAEE) recipient Robert Hodgdon. Mr. Caron recently piloted this program for the GCSAA in Georgia at the Ford Plantation Golf Course and received outstanding reviews from the students, teachers, and parents of Richmond Hill Middle School. | Nelson   | Caron           | Community and Business Partnerships                           | 6-8 teachers, 9-12 teachers, Administrators             | Introductory |
| Monday: 3:20-4:10 PM | Athena G    |   |  |          |                 |   |   |              |
| Monday: 3:20-4:10 PM | Athena H    | STEAMy AfterSchool Programs   | Building STEM Ambassadors through after-school enrichment activities. Student inquiry based learning after the bell rings promotes success in the classroom and equips them with "extra" ordinary 21st Century learning opportunities.   | Kimberly | Hutcheson       | STE(A)M is CTAE   | K-2 teachers, 3-5 teachers, Administrators              | All Levels   |
| Monday: 3:20-4:10 PM | Athena I    | Super STEM Challenges   | Super STEM challenges take students from identifying a problem—or a design challenge—to creating and developing a solution. Each challenge is centered around the engineering design process as they immerse students in hands-on inquiry and open-ended exploration. Kids absolutely love doing them and they generally use materials that are cheap and easy to find.  | Tom      | Brown           | Interdisciplinary Teaching of Georgia Standards of Excellence | K-2 teachers, 3-5 teachers, 6-8 teachers                | Introductory |
| Monday: 3:20-4:10 PM | Olympia 1   | Technology Integration for Younger Elementary   | Every day more schools are moving towards the 1-to-1 technology model, allowing each student the technological resources to prepare themselves for our fast-paced society. But often times, elementary-aged students are left to use the same few, basic tools and websites. This session spotlights resources in the forms of websites, programs, funding opportunities, and integration ideas for elementary aged students - focusing on Kindergarten through 3rd grade.   | Kathryn  | Jackson         | Planning for Equity: STE(A)M for All Students                 | K-2 teachers  | Introductory |
| Monday: 3:20-4:10 PM | Olympia 2   | Rollin' on the River A Second Grade Integrated STEM Unit  | Take instructional time back by integrating math, science, social studies, and reading. Find out how an Instructional Technology Specialist and Second Grade teacher came together to create an engaging unit involving AR/VR machines, 3D printers, real world connection to history and the science of forces and motion. We will go through the planning process and implementation of our interdisciplinary unit sharing our experiences and successes. Come roll on the river with us!  | Lauren   | Parsell         | Interdisciplinary Teaching of Georgia Standards of Excellence | K-2 teachers, 3-5 teachers                              | Introductory |
| Monday: 3:20-4:10 PM | Parthenon 1 | Year One STEM Launch  | Join Lyman Hall Elementary on our STEM launch. Team will present fall related ideas, from a school who is beginning our STEM journey. Attendees will participate in three hands on, exploratory STEM activities for grades K-5. Come ready to launch a pumpkin!  | Kaitlyn  | Caudill         | Planning for Equity: STE(A)M for All Students                 | K-2 teachers, 3-5 teachers                              | Introductory |

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| Monday: 3:20-4:10 PM  | Partnenon 2  | Changing Classroom Practice and Student Achievement Through STEM         | Explore what teacher actions have the highest impact on student learning and how to use evidence-based learning to guide your STEM classroom.  | Valerie | Sellers           | Interdisciplinary Teaching of Georgia Standards of Excellence | K-2 teachers, 3-5 teachers, 6-8 teachers, 9-12 teachers, Administrators | Advanced     |
| Monday: 3:20-4:10 PM  | Grand Hall 1 | Hidden Figures - Teaching students careers with STEM in the 21st century | Let all students especially girls explore the world of STEM careers. . Learn how to keep your upper elementary students engaged by learning how to build a tiny house as an architect, or using a website design a T shirt for a school contest and many more ideas. Finally, students will engage in a living museum with their chosen career using a circuit button. Lessons incorporate the 21st Science learner.   | Amy     | Daise             | Planning for Equity: STE(A)M for All Students                 | 3-5 teachers, 6-8 teachers  | Introductory |
| Monday: 3:20-4:10 PM  | Grand Hall 2 | Engagement by Design: Fostering STEM Skills with PBL                     | Are you looking for ways to take student groans of "When will I ever use this?" to a genuine connection between skills and application? Elementary students are avid STEM investigators, eager to explore and invent. Thus, providing them with real-world problems to solve fuels their curiosity and investigative interests. Asking them to brainstorm solutions will bring higher-order thinking skills into play, strengthen argumentation skills, and enhance collaboration, and critical-thinking. Discover engaging real-world problems that can be used as a springboard either indoors or in the schoolyard that will provide a context for authentic STEM design that students can use to create solutions.   | Karen   | Garland           | Think Globally, Act Locally- Project Based Learning           | K-2 teachers, 3-5 teachers  | Introductory |
| Monday: 3:20-4:10 PM  | Grand Hall 3 |  | GADOE UPDATES  |         |                   |   |   |              |
| Monday: 3:20-4:10 PM  | Grand Hall 4 | Integrated STEM Content for the win!                                     | Are you intimidated at the thought of STEM? Come see how STEM can be engaging and integrated across the curriculum within your classroom through hands on experiences and technology integration.  | Jenny   | Spartz            | Interdisciplinary Teaching of Georgia Standards of Excellence | K-2 teachers, 3-5 teachers  | Introductory |
| Monday: 3:20-4:10 PM  | Grand Hall 5 | Exploring Habitats through Movement                                      | The Alliance Theatre Institute delivers professional learning for educators and arts integrated classroom instruction for students. One of its residency programs, smART stART, focuses on a student's ability to retell a story and understand its narrative elements.<br>Join Rebecca Pogue, Institute Program Manager at the Alliance Theatre, to explore sample smART stART lessons. Learn how students can use movement to re-tell stories and demonstrate their knowledge of animals and habitats. Identify, practice, and master arts-integrated strategies that can be replicated in other content areas. This session is open to movers of all abilities and backgrounds - no previous experience in dance required!  | Rebecca | Pogue             | Integrating Fine Arts with Fidelity: STEAM                    | K-2 teachers, 3-5 teachers  | Introductory |
| Monday: 3:20-4:10 PM  | Grand Hall 6 |  |  |         |                   |   |   |              |
| Monday: 3:20-4:10 PM  | Oconee 1     | Worthwhile Wetland Investigations: Students in Action!                   | Join us as we share how our students are affecting change through a year-long STEM research project immersed in our nearby wetland. Students are researching, collecting data in the wetland, collaborating with business partners, and giving back to the community.  | Jessica | Clark             | Think Globally, Act Locally- Project Based Learning           | 3-5 teachers  | All Levels   |
| Monday: 3:20-4:10 PM  | Oconee 2     | Failing Forward: Adventures in 3D Printing                               | This session will introduce teachers to the free online design programs and sturdy, low cost hardware I found to help me make 3D printing an affordable and enriching tool to be used in my own middle school classroom. In this session attendees will take a look at TinkerCad, Fusion 360, & AstroPrint; all of which are totally free for students and teachers to use. We will also explore my own failures and triumphs in building our own 3D printers, in order to save money, with the happy side effect of much more capable students as a result of our frugality.  | Will    | Dodd              | STE(A)M is CTAE   | 3-5 teachers, 6-8 teachers  | Introductory |
| Monday: 3:20-4:10 PM  | Cypress 1    | Integrated STEM Content for the win!                                     | Are you intimidated at the thought of STEM? Come see how STEM can be engaging and integrated across the curriculum within your classroom through hands on experiences and technology integration.  | Natalia | Seagreen          | Interdisciplinary Teaching of Georgia Standards of Excellence | K-2 teachers, 3-5 teachers  | Introductory |
| Monday: 3:20-4:10 PM  | Cypress 2    | STEM Night Made Easy   | Come and see how one elementary school integrated technology into their STEM night!Using items already in the building, each grade level was able to showcase how technology is integrated into STEM.Preview our STEM night format, technology, and other hands on activities while getting ideas for your own STEM nights. Come ready to share!   |         | Fryling Swierenga | Emerging Technologies   | K-2 teachers, 3-5 teachers, Administrators                              | Introductory |
| Monday: 3:20-4:10 PM  | Empire 1     | On The Road to Code!   | This session will help those who are new to coding get up to speed! Appropriate for fourth grade through high school students, this session will bring coding and hands-on together as you learn how to program a graphing calculator to drive a robotic vehicle (called a Rover) to perform different challenges. Code your rover to navigate a path and draw geometric shapes. No coding experience is necessary.  | Beth    | Smith             | Planning for Equity: STE(A)M for All Students                 | 3-5 teachers, 6-8 teachers, 9-12 teachers                               | Introductory |
| Monday: 3:20-4:10 PM  | Empire 2     | Full STEAM Ahead   | STEAM is not just teaching about Science, Technology, Engineering, Arts, and Mathematics but the culture that needs to be cultivated to help create a problem solving, creative, critical thinking workforce for tomorrow. During this session, district and building leaders, will expand our thinking to embrace STEAM beyond those subjects, and beyond the classrooms walls and demonstrate how STEAM enhances the core curricular courses.  | Brad    | Fountain          | Planning for Equity: STE(A)M for All Students                 | Administrators  | Advanced     |
| Monday: 3:20-4:10 PM  | Willow       |  |  |         |                   |   |   |              |
| Tuesday: 8:15-9:05 AM | Athena B     |  |  |         |                   |   |   |              |
| Tuesday: 8:15-9:05 AM | Athena D     | Culturally Authentic CS STEAM for All                                    | CAPACiTY (Culturally Authentic Practice to Advance Computational Thinking in Youth) is a National Science Foundation (NSF) sponsored year-long course that introduces upper middle school and high school students to computer science to develop rigorous computational thinking (CT) skills by engaging students in culturally authentic, problem-based, inquiry learning (PBIL) projects. The course is intentionally aligned to the Georgia Introduction to Digital Technology (IDT) standards with additional Computer Science Teachers Association (CSTA) standards. Students' learning and their solutions to the PBIL challenge is exhibited in their multimedia digital narrative artifacts, which include web pages, mobile applications, and computationally generated music. Throughout the course and the artifact development process, students become proficient with a variety of computational tools such as App Inventor and EarSketch (a digital platform that teaches programming through music mixing). | Douglas | Edwards           | Planning for Equity: STE(A)M for All Students                 | 6-8 teachers, 9-12 teachers   | Introductory |



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| Tuesday: 8:15-9:05 AM  | Athena E     | "Under the Sea: A Deep Dive into 3D Learning Modules using Authentic Phenomena in Marine Environments" | Explore the integration of math and science practices in an interdisciplinary curriculum modules that focuses on current research by Georgia Tech faculty in marine science. Each module focuses on one integrative theme ( Experimental Design, Data Visualization, and Data-Driven Decision Making ) which highlight concepts in NGSS Science and Engineering practices, providing a foundation for three-dimensional learning within an authentic context. Participants will also receive access to curriculum materials and discover how the modules can be integrated within their classrooms. | Sabrina   | Grossman   | Interdisciplinary Teaching of Georgia Standards of Excellence | 6-8 teachers  | All Levels   |
| Tuesday: 8:15-9:05 AM  | Athena F     | The New Discovery Experience   | Explore the New Discovery Experience and learn the many ways that you can personalize your access to maximize the STEM in your classroom. Attendees will participate in a hands on experience where they will have the chance to find new ways Discovery Education is bringing the world to their classroom.  | Shemia    | Thompson   | Emerging Technologies   | K-2 teachers, 3-5 teachers, 6-8 teachers, 9-12 teachers                 | All Levels   |
| Tuesday: 8:15-9:05 AM  | Athena G     | Drone Obstacle Course - Now with Workbench   | The programmable drone obstacle course is here, using the power of Workbench (recently partnered with Google) to make the workflow and programming simpler for you and your students. Come see the easy way to get your students programming and flying safely and 100% legally!  | Joey      | Mitchell   | Emerging Technologies   | 3-5 teachers, 6-8 teachers, 9-12 teachers                               | All Levels   |
| Tuesday: 8:15-9:05 AM  | Olympia 1    | Addressing Homelessness Through STEAM  | How can we empower our students to create meaningful classroom projects that address world problems that concern them the most? In this session I will share how I helped my high school students identify their concerns, design and prototype full-size solutions, and partner with a local non-profit who is doing great good to address social justice in Atlanta.  | Lynn      | Luster     | Think Globally, Act Locally-Project Based Learning            | 6-8 teachers, 9-12 teachers   | All Levels   |
| Tuesday: 8:15-9:05 AM  | Parthenon 1  | Teaching from Scratch  | Coding is a skill that can be an effective tool to encourage critical thinking and creativeness within the context of any core subject. This session will encourage teachers to use this free desktop app by giving guidance on building simple animations and games. Teachers will be shown samples of student created animations and games that directly correlate to grade level standards ranging from the regions of Georgia to space explorations to magnetism. We will even delve into hooking up a Makey-Makey kit to explore conductivity.   | Kevin     | Hughes     | Interdisciplinary Teaching of Georgia Standards of Excellence | K-2 teachers, 3-5 teachers  | Introductory |
| Tuesday: 8:15-9:05 AM  | Partnenon 2  | Integrating Science, ELA, and Math Standards to Plan Interdisciplinary Lessons                         | In this session teachers will be integrating GSE standards from the ELA, math, and science space to plan effective lessons. Teachers will internalize the lesson planning process and integrate literacy standards in different phases of the 5E model for science. Teachers will also integrate grade level appropriate math standards into the lesson to support analyzing data and using mathematics and computational thinking.   | Rabieh    | Hafza      | Interdisciplinary Teaching of Georgia Standards of Excellence | 3-5 teachers, 6-8 teachers, 9-12 teachers, Administrators               | All Levels   |
| Tuesday: 8:15-9:05 AM  | Grand Hall 1 | STEM Night for High Schoolers and their Parents  | Finding a way to get high schoolers to come in the evening after school is a hard task. Getting their parents there is even harder. We have found a way that works in our rural community. STEM Night offers students and parents the opportunity for a hands-on experience in each area of STEM (Science, Technology, Engineering, and Math). We would love to share what we have learned with you.  | Amber     | Attaway    | Community and Business Partnerships                           | 9-12 teachers   | Introductory |
| Tuesday: 8:15-9:05 AM  | Grand Hall 2 | STEM is for Everyone: How to Provide STEM Education to our Underrepresented Populations                | STEM is for everyone! How can we provide real-world, hands-on experiences for all learners including our underrepresented populations? This lecture based presentation will guide educators through the real-life experience of challenging and engaging students from diverse backgrounds with rich STEM experiences   | Bianca    | McCants    | Planning for Equity: STE(A)M for All Students                 | K-2 teachers, 3-5 teachers  | Introductory |
| Tuesday: 8:15-9:05 AM  | Grand Hall 3 |  |   |           |            |   |   |              |
| Tuesday: 8:15-9:05 AM  | Grand Hall 4 | Reality Checkmate: Expanding Student Horizons With GPB's AR and VR Learning Journeys                   | Sit back and hold on tight as we take a virtual learning journey to places normally out of reach, exploring the inspiring new augmented and virtual reality learning resources created by GPB Education and streaming partners PBS LearningMedia and Discovery Education. Unstrap and dive right in as we model ideas for how virtual reality expansions can pair inspiring content with meaningful learning activities and engage students in mastering knowledge and skills that are relevant to real-world experiences.  | Tracey    | Wiley      | Emerging Technologies   | K-2 teachers, 3-5 teachers, 6-8 teachers, 9-12 teachers, Administrators | All Levels   |
| Tuesday: 8:15-9:05 AM  | Grand Hall 5 |  |   |           |            |   |   |              |
| Tuesday: 8:15-9:05 AM  | Grand Hall 6 | 3D Design Use Math and Coding  | In just a few minutes using the free software BLOCKSCADE3D.com we will design an object. Using Math we will position the object on the X-Y grid. Using Coding we will make multiple copies of our object. We will then translate our design into OpenScad, produce the .STL design file and print it on a JellyBOX printer. All attendees will take a copy of the object home as a souvenir.  | Bruce     | Troutman   | Interdisciplinary Teaching of Georgia Standards of Excellence | 3-5 teachers, 6-8 teachers, 9-12 teachers                               | Introductory |
| Tuesday: 8:15-9:05 AM  | Oconee 1     | STEMGROWERS: Garbage to Garden   | Composting 101 - You will learn basic composting techniques appropriate for K-5 students while experiencing the STEM Growers journey as Hubbard Elementary's students turned garbage into productive soil for garden use. This standard-based PBL is one way elementary students acted locally while thinking globally!   | Rebecca   | Wachtel    | Think Globally, Act Locally-Project Based Learning            | K-2 teachers, 3-5 teachers  | Introductory |
| Tuesday: 8:15-9:05 AM  | Oconee 2     | The Rise of STEAM  | This presentation will explore the technological, economic, pedagogical, and historic contexts for understanding how STEAM became a substantial movement in 21st century education.   | Allen     | Bell       | Community and Business Partnerships                           | K-2 teachers, 3-5 teachers, 6-8 teachers, 9-12 teachers, Administrators | All Levels   |
| Tuesday: 8:15-9:05 AM  | Cypress 1    | Project-Based Learning   | Presenting our Annual STEAM project organized at the school community in three different dimensions and how we got grant money to initiate and prize money to continue.   | Josephine | Jeganathan | Think Globally, Act Locally-Project Based Learning            | 9-12 teachers   | Introductory |
| Tuesday: 8:15-9:05 AM  | Empire 1     | Is a Zombie Apocalypse Eating at You? Try These STEM Strategies!                                       | Use the "Zombie Craze" to make STEM/STEAM become "undead" in your science classroom! This is a hands-on/brains-on session!  | Jeff      | Lukens     | Interdisciplinary Teaching of Georgia Standards of Excellence | 6-8 teachers, 9-12 teachers   | Introductory |
| Tuesday: 8:15-10:05 AM | Athena A     | Animatronics and Art: Making the Standards Move  | Participants will learn how to use physical computing, design and art processes so students can understand the standards in a very hands-on way.  | Stacey    | Bradley    | Integrating Fine Arts with Fidelity: STEAM                    | K-2 teachers, 3-5 teachers  | All Levels   |
| Tuesday: 8:15-10:05 AM | Athena C     | Top Three Things You Can Do with Graphing Calculators in STEM!   | This hands-on workshop will show three incredible things you can do with calculators in your math, science, or STEM classroom. We will start with learning how to program the calculator to control a light and then move to input/output control. Finally, we will explore the creation of real-world projects that are controlled by calculators! Designed for teachers who have never programmed and have no idea what a microcontroller is, this workshop will get newbies up to speed in no time!  | Wendy     | Peel       | Planning for Equity: STE(A)M for All Students                 | 3-5 teachers, 6-8 teachers, 9-12 teachers                               | Introductory |

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| Tuesday: 8:15-10:05 AM | Athena H  | STE(A)Ming Through Google Hyperdocs  | STEAMing Through Google Hyperdocs is a workshop that builds upon the basics of a hyperdoc. Participants will be provided with templates to begin cultivating resources that will ultimately lead to a classroom ready hyperdoc.   | Michele  | Langhans   | Interdisciplinary Teaching of Georgia Standards of Excellence | K-2 teachers, 3-5 teachers, 9-12 teachers, Administrators               | Introductory |
| Tuesday: 8:15-10:05 AM | Athena I  | Assessment: STEAM at the Highest Level   | Attendees will gain a full understanding of the types of assessment possible when completing STEAMy Project Based Learning units with every student. Voice and choice are essential in today's classroom, but without forethought about assessment, it is impossible to insure standards mastery. Meet students where they are and allow them to show you what they know in the format they feel most comfortable. It is possible with proper assessment strategies.  | Courtney | Bryant     | Integrating Fine Arts with Fidelity: STEAM                    | K-2 teachers, 3-5 teachers, 6-8 teachers, 9-12 teachers, Administrators | All Levels   |
| Tuesday: 8:15-10:05 AM | Olympia 2 | The Revolution of STEAM Education through Financial Literacy, Blockchain Technology, Entertainment and Entrepreneurship. | As a result of attending our session, educators, administrators, project team leaders, institutions, nonprofit and for-profit businesses will learn how our training programs and curricula (the Money Guide for Young Entrepreneurs, Digital Badge & Skillcoin Rewards System, STEAM Investigative Process and Community On Demand Trading Card Game) will create a pipeline of young innovators and entrepreneurs equipped with digital and financial portfolios, verifiable high-demand STEAM skills, and meaningful workforce experiences in project management, business development, event coordination, financial literacy, and community-based economics. The Money Guide for Young Entrepreneurs is currently being piloted as flexible, blended-learning solution through Dr. Ben Carson's EnVision Centers (U.S. Department of Housing & Urban Development )   | Dana     | Harris     | STE(A)M is CTAE   | 6-8 teachers, 9-12 teachers, Administrators                             | All Levels   |
| Tuesday: 8:15-10:05 AM | Cypress 2 | The STEM of PBL  | In this session, participants will learn how to use PBL's to foster a learning environment in which students are guided to produce original ideas, objects, and structures using math, science, and technology. Participants will also learn how to grow students' capacity for creativity and fun in a STEM context.   | Adero    | Carter     | Think Globally, Act Locally-Project Based Learning            | K-2 teachers, 3-5 teachers, 6-8 teachers, 9-12 teachers, Administrators | Introductory |
| Tuesday: 8:15-10:05 AM | Willow    | Engaging High School Students through the 4 Cs of STEM in Content Classes  | Still unsure of how STEM is supposed to be used in other content areas? How are we supposed to implement STEM in non-STEM classes? This presentation breaks down the 4 key principles of STEM and looks at how they connect to all content areas. We'll also brainstorm ideas that you can take away with you for your classroom.   | Lee      | Tucker     | Planning for Equity: STE(A)M for All Students                 | 9-12 teachers   | Introductory |
| Tuesday: 8:15-10:05 AM | Empire 2  | Using Digital Portfolios as a Platform for Metacognitive Learning  | Reflection (or thinking about your thinking) makes us aware of the processes and strategies that make us successful. It allows us to learn from our successes, as well as challenges and failures. Digital portfolios provide a safe, secure platform for educators and their students to write, record, and reflect on the learning that is taking place in an out of the classroom. It's time to start telling the whole story....<br><br>During this workshop, we will explore how to use digital portfolios to encourage metacognition, along with encouraging attendees to create their own digital portfolio!   | Kimberly | Moore      | Planning for Equity: STE(A)M for All Students                 | K-2 teachers, 3-5 teachers, 6-8 teachers, 9-12 teachers, Administrators | All Levels   |
| Tuesday: 9:15-10:05 AM | Athena B  | Engineering with Line Design   | Paper, marker and glue make an easy way to explore lines, textures, designs and patterns along with movement, balance and rhythm. Participants will engineer and design an artistic structure that utilizes Math, Science and Engineering skills.   | Kris     | Bakke      | Integrating Fine Arts with Fidelity: STEAM                    | 3-5 teachers, 6-8 teachers, 9-12 teachers, Administrators               | Introductory |
| Tuesday: 9:15-10:05 AM | Athena D  | Classroom and Community Collaboration-Legacy Projects  | This presentation will highlight how collaboration among elementary STEM students, high school and college students, aspiring Eagle Scouts, community engineers, and a variety of community businesses work together to solve local "school" problems. The students identify a "local" problem and propose a variety of product solutions. The team of experts works with the school to analyze the feasibility of solutions. Together, they plan a timeline, budget, and design for the final product. Applied math, science, engineering, and arts are an integral part of each legacy project. Some of the projects included will be a miniature golf hole, a rock wall, a Disney inspired play land for the playground, community gardens, and finding a solution to "drainage and erosion" issues on our playground. As we look forward to the upcoming year, a potential focus will be on harnessing natural energy from the wind and the sun to power some new aesthetic equipment for our school grounds. | Elaine   | Reisenauer | Think Globally, Act Locally-Project Based Learning            | 3-5 teachers  | All Levels   |
| Tuesday: 9:15-10:05 AM | Athena E  | Elementary Integrated Units  | Participants will be walked through how Woodland Elementary teachers plan integrated units from beginning to end, and will walk away with examples in every grade K-5.  | Cheri    | Mills      | Interdisciplinary Teaching of Georgia Standards of Excellence | K-2 teachers, 3-5 teachers, Administrators                              | Introductory |
| Tuesday: 9:15-10:05 AM | Athena F  | The Mathworks Math Modeling Challenge  | An introduction and overview of the Mathworks Math Modeling Challenge is given. The Challenge is free for teams of high school students and is a great opportunity for students to work together in a small team to explore an open-ended, real world problem. Teams are expected to come up with a solution, provide an analysis of their solution, and submit a complete written description of their solution.<br><br>We will provide information about the Challenge including the expectations for the student teams. Additionally, the organizers of the event, The Society of Industrial and Applied Mathematics, provides a great deal of support, and we will provide an overview of the resources and materials available to help support your students.  | Kelly    | Black      | Think Globally, Act Locally-Project Based Learning            | 9-12 teachers   | Introductory |
| Tuesday: 9:15-10:05 AM | Athena G  | 3D Printing - The test print is done. Now What?  | So you got a 3D printer. You watched the setup videos and managed to print a lucky cat. Congratulations on getting this far, but what's next? Attendees will leave with at least three ideas for 3D printing based lessons, and plenty of helpful tips for anyone in 3D printing - regardless of experience.  | Joey     | Mitchell   | Interdisciplinary Teaching of Georgia Standards of Excellence | 3-5 teachers, 6-8 teachers, 9-12 teachers                               | All Levels   |
| Tuesday: 9:15-10:05 AM | Olympia 1 | Applying Experiential Learning to STEM Education   | Seeing how STEM concepts are applied outside of the classroom is important for student success. This can be done through creating local business partnerships and implementing experiential learning practices. In this sessions participants will learn about a free experiential learning resource from the Carl Vinson Institute of Government. The speaker will share the report, best practices, and keys to replication. Participants will then have time to reflect and think about how to implement or expand existing experiential learning practices in their school(s)/classroom.  | Rebecca  | Mclver     | Community and Business Partnerships                           | 9-12 teachers, Administrators   | Introductory |

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|-------------------------|--------------|---|---|----------|-----------|---|---|--------------|
| Tuesday: 9:15-10:05 AM  | Parthenon 1  | Coding: Connecting the Dots Between Physical and Digital                    | Bring coding to life! In this session, middle school Technology and Engineering teachers will share how we use SAM Labs in our classrooms to enhance the students' understanding of coding and engage students in STEAM learning experiences. We will demonstrate how this versatile technology can be used across a variety of subject areas and how it can be tailored for any classroom or ability level. Students have the option to code the wireless, Bluetooth enabled blocks through a drag and drop app or online through SAM Blockly. They program behaviors of blocks which may be inputs, such as light sensors, buttons, proximity and tilt sensors; or outputs, such as, lights, motors, and buzzers enabling them to make anything from simple reactions to complex creations. | Daniele  | Deneka    | Emerging Technologies   | K-2 teachers, 3-5 teachers, 6-8 teachers                                | All Levels   |
| Tuesday: 9:15-10:05 AM  | Partnenon 2  | Scientific Discourse: The Art of Asking Questions                           | Asking questions is one of the science and engineering practices that is often overlooked in the classroom. In this session we will use this science and engineering practice to develop the framework for the flow of the lesson and the discourse around the phenomena. We will use graphic organizers to help students formulate and revise questions that guide them through content and peer discussions. Attendees will receive protocols for asking questions and paired questioning to help them create lessons that facilitate discussion.   | Rabieh   | Hafza     | Interdisciplinary Teaching of Georgia Standards of Excellence | 3-5 teachers, 6-8 teachers, 9-12 teachers, Administrators               | All Levels   |
| Tuesday: 9:15-10:05 AM  | Grand Hall 1 | The STEM/STEAM Classroom: Equity Within                                     | Cultivate21 will help you explore and reflect on the importance of planning for equity within the STEM/STEAM classroom. You will be engaged in discussion around the challenges of achieving equity in STEM/STEAM and encouraged to develop solutions for providing equity in STEM/STEAM education.   | Molly    | Bestge    | Planning for Equity: STE(A)M for All Students                 | K-2 teachers, 3-5 teachers, 6-8 teachers, 9-12 teachers, Administrators | All Levels   |
| Tuesday: 9:15-10:05 AM  | Grand Hall 2 | Making Connections: Implementing GSE Interdisciplinarily                    | Taking the GSE and planning units for instruction in a STEM/STEAM school. The process of planning units with two content classes or more with emphasis on the organization of standards to create meaningful units of study that are not forced, but thoughtful and real for students.  | Angela   | Keel      | Interdisciplinary Teaching of Georgia Standards of Excellence | 6-8 teachers, 9-12 teachers, Administrators                             | All Levels   |
| Tuesday: 9:15-10:05 AM  | Grand Hall 3 | From Global Problems to Local Actions                                       | How to transform global and international challenges and transform them into local actions through STEM and place base learning experiences.  | Carmen   | Flammioni | Think Globally, Act Locally- Project Based Learning           | K-2 teachers, 3-5 teachers, 6-8 teachers, 9-12 teachers                 | Advanced     |
| Tuesday: 9:15-10:05 AM  | Grand Hall 4 | Building a 21st Century Learning Framework for STEM and CTAE                | STEM is more than Science, Technology, Engineering, and Math. STEM asks students to consider deep, real-world questions and collaborate with others to arrive at meaningful conclusions. Learning through interdisciplinary units of study challenges students and helps them develop the relevant skills for evolving and expanding careers. Join GPB as we explore Discovery Education's collection of content, instructional strategies, and digital resources that support STEM education and the P21 framework. Participants will come away with an expanded digital toolbox for better illustrating the knowledge their students need to thrive in the workplace and as citizens.   | Tracey   | Wiley     | STE(A)M is CTAE   | 3-5 teachers, 6-8 teachers, 9-12 teachers, Administrators               | All Levels   |
| Tuesday: 9:15-10:05 AM  | Grand Hall 5 | Integrating sySTEMic collaboration, equipping innovative leaders            | In this presentation, we will describe how we integrate geometry, physics, chemistry, english, engineering, biology, healthcare, and advanced algebra into our daily curriculum through project based learning.   | Alecia   | Frizzell  | Interdisciplinary Teaching of Georgia Standards of Excellence | 9-12 teachers   | Introductory |
| Tuesday: 9:15-10:05 AM  | Grand Hall 6 | Stop Motion Across the Curriculum   | Explore how to best use stop motion animation to provide students with ownership and authenticity to share their knowledge across the curriculum. We will share our story of how stop motion helped teachers use technology effectively in their classroom, share ideas, and teach you how to create your own video in our session!   | Laura    | Dostie    | Emerging Technologies   | K-2 teachers, 3-5 teachers  | Introductory |
| Tuesday: 9:15-10:05 AM  | Oconee 1     | The Chemistry of Materials- Where does it go when we don't need it anymore? | Participants will engage in a storyline that answers the questions associated with what happens when a computer or cell phone is disposed of. In the process, the periodic table and families of elements will be highlighted.  | John     | Garrett   | Think Globally, Act Locally- Project Based Learning           | 6-8 teachers  | Introductory |
| Tuesday: 9:15-10:05 AM  | Oconee 2     | PBL: Ideas from my own backyard   | This presentation focuses on how a science teacher used a summer internship to develop a PBL project for her own classroom. Ideas will be shared with the attendees including labs and activities specific to the Biology PBL project that was developed during the internship. Great for middle and high school science, math, or technology teachers.   | Shannon  | Watkins   | Think Globally, Act Locally- Project Based Learning           | 3-5 teachers, 6-8 teachers, 9-12 teachers                               | Introductory |
| Tuesday: 9:15-10:05 AM  | Cypress 1    | Amplifying Student Voice & Creativity                                       | Gain ideas for fostering students' voice and creativity, while increasing engagement. Explore easy to use tools and resources, which foster 21st century skills and can be integrated in all subject areas and grade-levels.  | Jennifer | Hall      | Integrating Fine Arts with Fidelity: STEAM                    | 3-5 teachers, 6-8 teachers, 9-12 teachers                               | Introductory |
| Tuesday: 9:15-10:05 AM  | Empire 1     | The Cardinal Rule of STEM: Make Science and Math Mutualistic!               | Integrating biology and mathematics shouldn't just be a good idea—it should be the law! Come learn how easy, important, and fun it is to collect and analyze data as a part of good, solid, and responsible STEM education.   | Jeff     | Lukens    | Interdisciplinary Teaching of Georgia Standards of Excellence | 6-8 teachers, 9-12 teachers   | All Levels   |
| Tuesday: 10:15-11:05 AM | Athena A     | Drones - Soaring to New Heights   | This presentation, "Soaring to New Heights", will take engineering from the classroom into the sky. We will discuss how to use drones in the classroom and what teachers need to understand before they begin this exciting new endeavor. The dimensions of this presentation include the safety elements, instructional elements, certification requirements, legal elements, which Georgia Standards of Excellence apply to this study, overview of hardware requirements, and suggestions for drone purchases. Teachers will leave this presentation with resources they can use to make informed decisions about how to use drones in their classrooms and schools.   | Robert   | Young     | Emerging Technologies   | K-2 teachers, 3-5 teachers, 6-8 teachers                                | Introductory |
| Tuesday: 10:15-11:05 AM | Athena B     | The New Discovery Experience  | Explore the New Discovery Experience and learn the many ways that you can personalize your access to maximize the STEM in your classroom. Attendees will participate in a hands on experience where they will have the chance to find new ways Discovery Education is bringing the world to their classroom.  | Shemia   | Thompson  | Emerging Technologies   | K-2 teachers, 3-5 teachers, 6-8 teachers, 9-12 teachers                 | All Levels   |
| Tuesday: 10:15-11:05 AM | Athena D     | Read, Write, Listen, and Speak your Way to Success with Literacy            | Strengthen your students' literacy skills, and make text based activities more engaging by creating tasks that integrate four essential components: reading, writing, listening, and speaking. Engaging students with the text and related content at each step of a literacy based activity will lead to deeper processing, and strengthen skills needed for students to effectively obtain, evaluate, and communicate information. In this session, protocols and strategies for annotating, summarizing, and discussing a text will be presented.  | Steve    | Kuninsky  | Interdisciplinary Teaching of Georgia Standards of Excellence | 6-8 teachers, 9-12 teachers, Administrators                             | All Levels   |

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| Tuesday: 10:15-11:05 AM | Athena E     |  |   |           |           |   |   |              |  |
| Tuesday: 10:15-11:05 AM | Athena F     | Integrating Math and Technology into your Earth Science Classroom                      | During this session several lessons will be shared that integrate math and technology into the Earth Science classroom. Simple and inexpensive materials or school provided/free technology are the basis of each lesson to defer cost and time in lab preparation. The lessons include proportion and Earth's interior, percentage and seasons, and exploring the ocean floor through Google Maps.   | Stephanie | Keyser    | Interdisciplinary Teaching of Georgia Standards of Excellence | 6-8 teachers  | Introductory |  |
| Tuesday: 10:15-11:05 AM | Athena G     | Live News Crew - A Creative Outlet for All   | A daily, live news broadcast is one way to make students grow, but having the ability to live stream via YouTube has so many other uses. In this session, come see how easy it can be to start your own news channel with things you probably already have at your school, and one FREE piece of software.  | Joey      | Mitchell  | Planning for Equity: STE(A)M for All Students                 | 3-5 teachers, 6-8 teachers, 9-12 teachers                               | All Levels   |  |
| Tuesday: 10:15-11:05 AM | Olympia 1    | STEAM Ignites Cross-Curricular Learning  | Explore what successful STEAM learning looks like and how this cross-curricular approach transform teachers into learners and learners into teachers. Innovative teaching practices give students agency as they identify, investigate, and solve problems. Use an innovative STEAM project-planning framework that helps students plan the preparation, collaboration, implementation, and reflection needed for effective STEAM projects. Use authentic assessment rubrics that document what educators learn from students' project artifacts and empower student self-assessment. Participants will review ways to engage families in the STEAM approach to learning. | Cindy     | Kerr      | Integrating Fine Arts with Fidelity: STEAM                    | K-2 teachers, 3-5 teachers, 6-8 teachers                                | Introductory |  |
| Tuesday: 10:15-11:05 AM | Parthenon 1  | The Art and Craft of STEM  | Learn how traditional crafts such as origami, knitting, and weaving are helping contemporary artists, scientists, and mathematicians discover new technologies and solve problems. Best practices and classroom examples will be shared.  | Lauren    | Phillips  | Integrating Fine Arts with Fidelity: STEAM                    | 9-12 teachers   | Advanced     |  |
| Tuesday: 10:15-11:05 AM | Partnenon 2  |  |   |           |           |   |   |              |  |
| Tuesday: 10:15-11:05 AM | Grand Hall 1 | Using Relevance, Authenticity, and the EDP to Drive Your STEAM PBL                     | Come and learn about Cultivate21's process of building strong STEAM Project-Based Learning (PBL) experiences by engaging students in relevant and authentic problem solving, both locally and globally. You will also learn how using the Engineering Design Process (EDP) as the backbone of your STEAM PBL can help your students own the EDP and apply it to all types of daily real-world problems.   | Molly     | Bestge    | Think Globally, Act Locally-Project Based Learning            | K-2 teachers, 3-5 teachers, 6-8 teachers, 9-12 teachers, Administrators | All Levels   |  |
| Tuesday: 10:15-11:05 AM | Grand Hall 2 | State-Level STEAM Support Resources  | Funding, partner, research, and advocacy resources are available through multiple state-level agencies and organizations. Attend this session to learn how to make the case for STEAM, how to fund your STEAM program or initiative, and how to find community arts partners to help support your work.   | Allen     | Bell      | Community and Business Partnerships                           | K-2 teachers, 3-5 teachers, 6-8 teachers, 9-12 teachers, Administrators | All Levels   |  |
| Tuesday: 10:15-11:05 AM | Grand Hall 4 | Project-Based Teaching and Learning for Change With GPB's Global Citizenship Resources | Join Georgia Public Broadcasting for a survey of our free digital resources and strategies for helping students identify the characteristics of global citizens, understand the challenges of practicing global citizenship, recognize the connections between global citizenship and social and emotional learning, and explore meaningful ways to apply global citizenship skills and actions in the classroom and beyond.  | Tracey    | Wiley     | Think Globally, Act Locally-Project Based Learning            | K-2 teachers, 3-5 teachers, 6-8 teachers, 9-12 teachers, Administrators | All Levels   |  |
| Tuesday: 10:15-11:05 AM | Grand Hall 5 | EXTRA! EXTRA! Learn All About It: Effective STEM/STEAM Project Based Learning Units    | Come learn ALL the pieces & parts of an effective STEM/STEAM Project Based Learning Unit that includes science, math, language arts and social studies in grades K-5! These units use the Engineering Design Model and include a Social Action Component. You don't want to miss the opportunity to learn & take away resources, templates & tons of ideas!   | Natasha   | Smith     | Think Globally, Act Locally-Project Based Learning            | K-2 teachers, 3-5 teachers  | All Levels   |  |
| Tuesday: 10:15-11:05 AM | Grand Hall 6 | Student-Led Scientific Investigative Research  | 4th/5th grade students from West Fannin Elementary will lead you through their scientific investigative research projects. You will be inspired by our students and come away with enrichment ideas.  | Kim       | Patterson | Think Globally, Act Locally-Project Based Learning            | 3-5 teachers, 6-8 teachers, Administrators                              | All Levels   |  |
| Tuesday: 10:15-11:05 AM | Oconee 1     | Integrating Literacy in Career Tech Courses Through Technology                         | Literacy is the nucleus of all subject area and integration in non-ELA courses is imperative to improving adolescent reading and writing skills. This session will provide attendees with technology tools and literacy strategies that can be incorporated in any non-ELA course, thus increasing overall student achievement. The tools and strategies presented can be utilized by all adult learners.   | Ashley    | Dawson    | Interdisciplinary Teaching of Georgia Standards of Excellence | 9-12 teachers   | Introductory |  |
| Tuesday: 10:15-11:05 AM | Oconee 2     | Our STEAM journey (year 1)   | In our school we saw a need for more hands on, problem-based learning. Our students come from a rural county, but along the I-75 corridor we have a lot of industry. Our county is looking to the future for our students. We strive to show the students what is possible in STEAM even without going to college. We will discuss CAD, 3D printing, drones, electric go-karts, and going 1:1 with technology in our classrooms.  | James     | Morris    | Planning for Equity: STE(A)M for All Students                 | K-2 teachers, 3-5 teachers  | All Levels   |  |
| Tuesday: 10:15-11:05 AM | Cypress 1    | Google Drawings: Let's Get Creative!   | Let's get creative! Would you like to walk away with ideas and resources you can use in class tomorrow? Come explore Google Drawings and learn how to take student engagement to the next level, while fostering the 21st Century 4 C's.  | Jennifer  | Hall      | Interdisciplinary Teaching of Georgia Standards of Excellence | 3-5 teachers, 6-8 teachers, 9-12 teachers                               | Introductory |  |
| Tuesday: 10:15-11:05 AM | Empire 1     | Order Up a Helping of Forensics, With a Side of Maggots!                               | From helping to determine the time of a victim's death to analyzing DNA samples from crime suspects, this workshop has it all! Come get your hands wrapped around the STEM of crime solving!  | Jeff      | Lukens    | Planning for Equity: STE(A)M for All Students                 | 6-8 teachers, 9-12 teachers   | All Levels   |  |
| Tuesday: 10:15-12:05 PM | Athena C     | Project Based Learning: The Martinez Way   | Come and discover how project based learning is implemented from ask to share at Martinez Elementary. We will share our step-by-step journey as we learned the process to become STEM certified. Our session will be directly linked and aligned with various grade levels through real life problems and student led investigations with an emphasis on community connections.   | Valery    | Dinkins   | Think Globally, Act Locally-Project Based Learning            | K-2 teachers, 3-5 teachers, Administrators                              | Introductory |  |
| Tuesday: 10:15-12:05 PM | Athena H     | National Geographic's Geo-Inquiry Process in Action                                    | Geo-Inquiry is an integrated, project-based learning process that connects real-world challenges to the classroom. In this interactive session, educators will discover new tools and learn new strategies to help students develop critical thinking skills, ask questions, collect information, visualize and analyze data, create a compelling story, and ultimately become advocates for change in their local communities.   | Carley    | Lovorn    | Think Globally, Act Locally-Project Based Learning            | 3-5 teachers, 6-8 teachers  | Introductory |  |

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| Tuesday: 10:15-12:05 PM | Athena I     | Let's take the TI Innovator Rover to the next level!  | Beyond the basics...so you know how to program the Rover to drive, what's next? Participants will choose from a variety of activities to meet their specific needs. These will include working with the motion and color sensors, the sound and color options, and the coordinate plane. Learn how the motion and color sensors change the Rover's direction, and the motion sensor measures distance. Learn how to program Rover to drive along the coordinate plane, measure distance and use lists to store points. We will also learn more about the sound and color features of the Rover. Let's connect science, technology, engineering, art, music and math. The sky is the limit...use your imagination to help your students build conceptual understandings. | Beth      | Smith             | Interdisciplinary Teaching of Georgia Standards of Excellence | 6-8 teachers, 9-12 teachers   | All Levels   |
| Tuesday: 10:15-12:05 PM | Olympia 2    | Lanterns and Shadowboxes: Integrating Art and Science   | Looking for a creative way to teach your Science standards? These engaging work stations and project ideas will ignite curiosity and innovative ideas within your students. Final products will connect your school to the larger community. Participants will enjoy some hands-on tinkering including a take away project sample.  | Lynn      | Luster            | Integrating Fine Arts with Fidelity: STEAM                    | K-2 teachers, 3-5 teachers  | All Levels   |
| Tuesday: 10:15-12:05 PM | Cypress 2    |   |   |           |                   |   |   |              |
| Tuesday: 10:15-12:05 PM | Willow       | K-STEM: The STEMology of Kindergarten   | This session is designed to STEMulate your mind without using harsh STEMulants! All STEMulants are made from organic chocolates, cheeses, cherries with a curiosity-curriculum, and are easy on the mind! Recipes include instructions, ingredients and innovations! K-STEM offers innovative teaching practices for Kindergarten educators in the subjects of Science, Technology, Engineering and Math!   | Kay       | Williams          | STE(A)M is CTAE   | K-2 teachers  | Introductory |
| Tuesday: 10:15-12:05 PM | Empire 2     | A picture is worth 1000 standards   | Using imagery to navigate through the standards from the perspective of a scientist, technologist, engineer, and mathematician. Educators will leave this session with the background knowledge and tools to successfully implement a cross-curricular lesson utilizing the engineering design process and imagery. Formative assessment ideas will also be shared.   | Lea       | Henderson         | Interdisciplinary Teaching of Georgia Standards of Excellence | 3-5 teachers  |              |
| Tuesday: 10:15-12:05 PM | Grand Hall 3 | GreenpowerUSA - The Hottest STEM Program in the World   | GreenpowerUSA is a STEM initiative that allows students the opportunity to participate in a hands-on approach to engineering and project management. Participants of the Greenpower program design, build and race student-driven electric racecars. GP programs nationally have a 35% participation rate among females. Additionally, GP programs have a high participation rate of minority students.   | Chip      | Giles             | Planning for Equity: STE(A)M for All Students                 | 3-5 teachers, 6-8 teachers, 9-12 teachers, Administrators               | Introductory |
|                         |              |   |   |           |                   |   |   |              |
| Tuesday: 11:15-12:05 PM | Athena A     | Project Based Learning Vs Activities  | PBL is the latest buzz word in education. What's the difference between PBL and a really cool activity? And should we throw the baby out with the bath water? In this session, we will discuss what makes a PBL a PBL, the pros and cons, and what this means for those cool activities that you've been using in your classroom for years. (Hint: Don't let perfect be the enemy of good!)   | Jeannie   | Rice              | Interdisciplinary Teaching of Georgia Standards of Excellence | K-2 teachers, 3-5 teachers, 6-8 teachers, Administrators                | Introductory |
| Tuesday: 11:15-12:05 PM | Athena B     | Changing Classroom Practices and Student Achievement through STEM                               | What is your definition of STEM? What instructional strategies have the highest impact on student learning? We will explore our own understanding of STEM education and the metadata research of John Hattie through collaboration, consensus, and discussion.  | Valerie   | Sellers           | Planning for Equity: STE(A)M for All Students                 | K-2 teachers, 3-5 teachers, 6-8 teachers, 9-12 teachers, Administrators | All Levels   |
| Tuesday: 11:15-12:05 PM | Athena D     | Power Up: Integrate your Physical Science and Algebra Curriculum using Energy-Based Simulations | Experience simulation-based curriculum modules that can be integrated in physical science and algebra courses. The modules are contextualized in energy concepts and were developed to emphasize the integration of math and science practices within grade-level specific disciplinary content. A laptop or internet ready device is necessary for exploring the simulations. Session attendees will receive access to curriculum materials.   | Sabrina   | Grossman          | Interdisciplinary Teaching of Georgia Standards of Excellence | 6-8 teachers  | All Levels   |
| Tuesday: 11:15-12:05 PM | Athena E     | Where Science and Photography Meet  | In this session we will explore how science can be a jumping point for photography. We will look at a variety of science experiments the students did. Then how they documented the stages of the experiments through photography. Finally we will discuss the final photographs from the experiments and see how different the science looks as a photograph.  | Tiffany   | Weser<br>Chrisman | Integrating Fine Arts with Fidelity: STEAM                    | 9-12 teachers   | All Levels   |
| Tuesday: 11:15-12:05 PM | Athena F     | How I Teach Statistical Reasoning: A Standards-Based Grading Approach                           | I taught Statistical Reasoning for the first time this past year. Since my high school teaches all of our mathematics courses using a standards-based grading approach, I had the challenge of designing a course that assesses based on the standards. I have had to be creative with the assessments that we have had and want to share the ideas and methods with others looking for a similar way to teach this class and other classes similar in content.   | Marc      | Lewis             | Think Globally, Act Locally-Project Based Learning            | 9-12 teachers   | Introductory |
| Tuesday: 11:15-12:05 PM | Athena G     | Solar Tracking with Arduino   | Join the 6th-8th grade STEAM teachers from the NSF Research Experiences for Teachers grant program at Georgia Southern University to learn about challenging your students in designing, building, and coding a solar tracker. Solar Trackers are devices which will automatically orient in the direction of high intensity sunlight to effectively harness maximum solar power. In this session, you will learn how to build and code an automatic solar tracker using a solar panel, light-dependent resistor (LDR) and DC Motors based on the Arduino platform. Solar tracking curriculum materials and ideas for classroom implementation will also be shared.   | Stephanie | Christie          | Emerging Technologies   | 6-8 teachers, 9-12 teachers   | Advanced     |
| Tuesday: 11:15-12:05 PM | Olympia 1    | Introducing STEM: Meaningful Ways to Integrate STEM in the Classroom                            | How can you effectively incorporate STEM at your school? Teachers from Martinez Elementary School will introduce you to STEM units from various grade levels and guide you as you begin to imagine ways to introduce STEM to your students and school. Discover how our students are tackling year long projects and how generating driving questions can establish science units rooted in STEM integration.   | Lisa      | Stokes            | Interdisciplinary Teaching of Georgia Standards of Excellence | K-2 teachers, 3-5 teachers  | Introductory |
| Tuesday: 11:15-12:05 PM | Parthenon 1  | Making a Difference in Our Community and Beyond   | How can you get your students to Think Globally and Act Locally? At Sagamore Hills Elementary we are making a difference, learn how you can too. We'll show you how we work with local organizations to change students' lives and make a difference in our community and beyond. You'll learn about our mission to save the migration of the monarch butterflies, build native habitats for birds and pollinators on campus, solve drainage issues and monitor the health of our nearby stream. You'll also learn about our cafeteria composting, STEM Gardening, cafeteria food tastings, and other citizen science projects for your students. Get outside with your students and make a difference!   | Stephanie | Spencer           | Think Globally, Act Locally-Project Based Learning            | K-2 teachers, 3-5 teachers, Administrators                              | All Levels   |

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| Tuesday: 11:15-12:05 PM | Partnenon 2  |  |   |           |            |   |   |              |  |
| Tuesday: 11:15-12:05 PM | Grand Hall 1 | Full STEAM Ahead with Light and Sound - Designing Lights and Sound for a Musical           | Take a look into an elementary PBL completed at Hubbard Elementary this past school year. 4th grade students worked with local business and community partners to design the lights and sounds needed for our school musical production of "Aladdin". After designing, students ran the light and sound board during all productions of the show with our Fine Arts Center Directors.   | Kera      | Davis      | Integrating Fine Arts with Fidelity: STEAM                    | 3-5 teachers  | Introductory |  |
| Tuesday: 11:15-12:05 PM | Grand Hall 2 | Connecting Literacy and STEM   | STEM and literature may not seem like a likely combination, but when merged successfully can enlighten and engage the most reluctant student. This session will share ideas and lessons you can implement tomorrow!   | Donald    | White      | Interdisciplinary Teaching of Georgia Standards of Excellence | K-2 teachers, 3-5 teachers, 6-8 teachers, 9-12 teachers, Administrators | All Levels   |  |
| Tuesday: 11:15-12:05 PM | Grand Hall 4 | Starting your STEM/STEAM Journey: Strategies for Beginners                                 | Do you want to do STEM/STEAM in your school but don't know where to start? We understand! It can be a daunting task but come to this session and hear how the Atlanta Area School for the Deaf has been making the shift to change the culture of the school while increasing rigor in the classroom. We have spent time educating teachers and staff about STEM and STEAM, provided push-in services in classes, offered hands-on activities for students and teachers, and have a school-wide plan for the 19-20 school year. By providing a strong foundation, your STEM/STEAM program will be successful!   | Helen     | Malone     | Planning for Equity: STE(A)M for All Students                 | K-2 teachers, 3-5 teachers, 6-8 teachers, 9-12 teachers, Administrators | Introductory |  |
| Tuesday: 11:15-12:05 PM | Grand Hall 5 | Sea Level Rise and Savannah: The Tide is High  | Come learn more about this phenomenon-based module where students are transported to the Savannah/Tybee Island region to better understand how coastal flooding, tides, sea level rise and climate change are impacting these communities. Through this STEM integrated experience, students will learn the foundational science behind these impacts, create data visualizations, and determine methods that they can engage with to mitigate the effects of climate change. The curriculum is supported by the Smart Sea Level Sensors project, a unique partnership between Chatham Emergency Management officials, City of Savannah officials, and Georgia Tech faculty who are working together to install a network of internet-enabled sea level sensors across Chatham County. Participants will receive access to curriculum materials.  | Jayma     | Koval      | Interdisciplinary Teaching of Georgia Standards of Excellence | 6-8 teachers  | All Levels   |  |
| Tuesday: 11:15-12:05 PM | Grand Hall 6 | Taking STEM Out of the Box: Planning Interdisciplinary STEM units to transform your school | Want to take your STEM planning to the next level? In this session we will discuss how your school can plan interdisciplinary STEM units connected by an overarching question. We are taking STEM out of the box and making it an essential part of your school's climate and your students' success.   | Kendra    | Brooks     | Interdisciplinary Teaching of Georgia Standards of Excellence | K-2 teachers, 3-5 teachers, Administrators                              | Advanced     |  |
| Tuesday: 11:15-12:05 PM | Oconee 1     | STEM Course to Support Academic Learning   | An integrated STEM course can support student learning in Math and Science. During this session we will present an 18 week STEM curriculum that uses Math and Science practices to strengthen student learning. Designed for Middle School Engineering & Technology classes but can be used in other connections disciplines.   | Jeffrey   | Rosen      | STE(A)M is CTAE   | 6-8 teachers  | Introductory |  |
| Tuesday: 11:15-12:05 PM | Oconee 2     | 3D printing for the beginner   | Has your school or district purchased a 3D printer but you have no idea where to begin? Do you wish that you could bring your student work from the 2D to the 3D world with ease? This presentation seeks to help fellow teachers get started with affordable (free and cheap) 3D printing resources! I have students ranging from 1st graders through high school creating a wide range of parts using CAD and 3D printing. If you have ever looked at 3D printing in any subject at any level, this session is for you!   | James     | Morris     | Emerging Technologies   | K-2 teachers, 3-5 teachers, 6-8 teachers, 9-12 teachers                 | Introductory |  |
| Tuesday: 11:15-12:05 PM | Cypress 1    | HyperDocs - Say What?  | Learn the "how and why" to engage and foster students' 21st century skills, while differentiating to meet academic levels and learning modalities. Create a resource you can take back and implement next week.   | Jennifer  | Hall       | Interdisciplinary Teaching of Georgia Standards of Excellence | 3-5 teachers, 6-8 teachers, 9-12 teachers                               | Introductory |  |
| Tuesday: 11:15-12:05 PM | Empire 1     | Wheeler Fresh Collaborative  | Wheeler High School is rolling out the Wheeler Fresh Collaborative: A cross-curricular collaboration by teachers and students whose goals are to increase community involvement and provide food essentials when and where needed. This STEAM initiative was originally conceived as a "farm to table" type program but has since evolved to include a food pantry started by Wheeler students and eventually supplemented with contributions from the surrounding community.   | Mars      | Berwanger  | Think Globally, Act Locally- Project Based Learning           | 6-8 teachers, 9-12 teachers, Administrators                             | All Levels   |  |
| Tuesday: 1:40-2:30 PM   | Athena A     | Come Sail Away! Supporting English Learners through Engineering Experiences                | In this session, focused on supporting English Learners in elementary classrooms, you will explore materials and build background knowledge necessary for an inclusive engineering activity.  | Courtney  | Quarterman | Planning for Equity: STE(A)M for All Students                 | K-2 teachers, 3-5 teachers, 6-8 teachers, Administrators                | Introductory |  |
| Tuesday: 1:40-2:30 PM   | Athena B     | Claim-Evidence-Reasoning (CER) Writing Scientific Explanations about Phenomenon            | In this session we will explore how to use the data collected from hands-on experiments to form conclusions based on the evidence in the data. We will discuss how to guide students to explain their reasoning to draw those conclusions from the evidence and scientific knowledge from texts that support their claim.   | Valerie   | Sellers    | Interdisciplinary Teaching of Georgia Standards of Excellence | K-2 teachers, 3-5 teachers, 6-8 teachers, 9-12 teachers, Administrators | All Levels   |  |
| Tuesday: 1:40-2:30 PM   | Athena D     | STEAM thru Drones - Coding with Drones   | Teaching teachers to introduce drone programming to students of Rural Areas with lack of exposure to Unmanned Aerial Systems. Coding with Drones using Droneblocks allows the students to take the sky by force and learn computer science skills with the drag and drop drone programming.   | LaQuata   | Sumter     | Emerging Technologies   | 6-8 teachers, 9-12 teachers, Administrators                             | All Levels   |  |
| Tuesday: 1:40-2:30 PM   | Athena E     | Building a Robotics Program  | Sagamore Hills Elementary in Atlanta is a dual STEM Certified school through the Georgia Department of Education and AdvancED. Learn how teachers have incorporated technology into their daily instruction in a meaningful way. The award winning robotics program provides an avenue for students to further develop critical thinking skills while incorporating math and science concepts when approaching a real-life scientific problem. The daily concepts learned in school provides the foundation for students to build a robot and create programs to complete specific challenges using common core standards of measurement, geometry, basic calculations, angles, and degrees. Students also build upon science standards to create innovative solutions to current real-world problems by infusing technology in the STEM program. | Stephanie | Spencer    | Planning for Equity: STE(A)M for All Students                 | K-2 teachers, 3-5 teachers, 6-8 teachers, Administrators                | All Levels   |  |

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| Tuesday: 1:40-2:30 PM | Athena G     | Interdisciplinary Project Based Statistics  | During this presentation, participants take on the role of engineers and model packaging efficiency and quality control through a highly engaging hands-on data-collection activity. They then apply measures of center, measures of variability, or statistical inference to improve on manufacturing operations.<br><br>This description relates to two of nine 1-week math PBL modules created by Georgia Tech as part of an NSF Math/Science Partnership project. All modules utilize a variety of manipulatives and simulations and require that students apply math concepts to solve scenario-based challenges.   | Douglas | Edwards                         | Interdisciplinary Teaching of Georgia Standards of Excellence | 6-8 teachers  | Introductory |
| Tuesday: 1:40-2:30 PM | Olympia 1    | Integrating Science and Social Studies with STEAM   | Learn how to integrate middle school Social Studies and Science Georgia Standards of Excellence into a collaborative, problem-based learning STEAM course. Participate in hands-on stations that require you to solve various problems from around the world and address how those solutions can affect your community while integrating math and literacy strategies. Presenters will also share strategies to help with planning, implementation, assessment, and further enrichment or remediation processes.   | Autumn  | Chicola                         | Interdisciplinary Teaching of Georgia Standards of Excellence | 6-8 teachers  | Introductory |
| Tuesday: 1:40-2:30 PM | Parthenon 1  | Unpacking the Vessel: Integrating Art and the Design Process into Core Classes  | Participants will learn how to incorporate the Design Process and STEAM standards to create a vessel based on collaborative research on a specific scientist.  | Mae     | Pagett                          | Integrating Fine Arts with Fidelity: STEAM                    | 3-5 teachers, 6-8 teachers, 9-12 teachers                               | All Levels   |
| Tuesday: 1:40-2:30 PM | Partnenon 2  | Explore S.T.E.M. Lessons in MS and HS Life/Biology and Environmental Sciences with the FREE Sun Power for Schools Curriculum                                  | Explore examples of 6-12 student-active lessons using the 5E model, vertical alignment of GSE energy standards, and instructional strategies supporting S.T.E.M., S.T.E.A.M., and more. Participants will explore the, FREE-to-Teachers, Sun Power for Schools 6-12 Curriculum Modules: Life/Biology, Environmental Science, Earth Science/Earth Systems, Sun-Earth Motions, Physical Science/Physics/Chemistry, and Mathematics Modules   | Gail    | Marshall                        | Interdisciplinary Teaching of Georgia Standards of Excellence | 6-8 teachers, 9-12 teachers, Administrators                             | Introductory |
| Tuesday: 1:40-2:30 PM | Grand Hall 1 | STEMGrowers: Hydroponic K-5 PBL   | Hydroponics 101 - Come learn basic hydroponic techniques appropriate for K-5 students and how K-5 standards apply. Hubbard Elementary's STEM Growers will share their journey from one small DIY system to becoming an actual school-wide indoor hydroponic garden. Elementary students are using hydroponics to act locally by providing healthy foods for the economically disadvantage while thinking globally!   | Rebecca | Wachtel                         | Think Globally, Act Locally-Project Based Learning            | K-2 teachers, 3-5 teachers  | Introductory |
| Tuesday: 1:40-2:30 PM | Grand Hall 2 | Increase Student Growth with a Pervasive School wide STEM Program   | Explore ways to increase student academic growth with pervasive practices through a school wide STEM program. This session will provide administrative, teachers, and school support personnel with innovative approaches to promote equity among all students. In this session we will discuss how to plan and implement a successful STEM program that is inclusive to all learners.   | Tracie  | Copper                          | Planning for Equity: STE(A)M for All Students                 | K-2 teachers, 3-5 teachers, Administrators                              | Introductory |
| Tuesday: 1:40-2:30 PM | Grand Hall 3 | Thinking Outside the Box to help All Students be Successful through STE"A"M Instruction: Easy to Implement STEAM Instructional Strategies for K-12 Classrooms | Adding the "A" in STEAM to instructional activities helps all students, (even struggling learners), process, comprehend, and retain difficult concepts and skills. You will learn easy-to-implement, out-of-the-box instructional strategies that can be applied to many of the Georgia Standards of Excellence to create student-centered, STEAM-based activities that help students connect the standards from all of their academic, fine arts, technology, and PE classes and apply that knowledge to real world topics. These STEAM instructional strategies will help students improve their performance on standardized testing as well. During this session, you will receive a comprehensive, detailed checklist of best practices for school-wide STEAM instruction that can also be used to lead your school through the STEAM certification process whether you are a passionate teacher or a visionary administrator. | Ansley  | Daniel (along with Hannah Polk) | Planning for Equity: STE(A)M for All Students                 | K-2 teachers, 3-5 teachers, 6-8 teachers, 9-12 teachers, Administrators | All Levels   |
| Tuesday: 1:40-2:30 PM | Grand Hall 4 | Sharing Ideas in a Mobile World   | Creating a product like a mobile app requires more than coding. Beyond the vital and transferable (commonly called "soft") skills, it involves graphic design, research, editing, and unique writing mastery. MAD-learn gives students valid reasons for wanting to develop a tech-based product and gives them opportunities to harness a wide variety of skills, directly aligned with ISTE student standards, to create tools that can make a difference. The approach gives students a powerful tool that allows them to easily build content-rich, visually impressive mobile apps and enables students to quickly see the finished product on both iOS and Android devices to use technology creation as a means of sharing ideas with the world.  | Gregg   | Stone                           | STE(A)M is CTAE   | 3-5 teachers, 6-8 teachers, 9-12 teachers, Administrators               | Introductory |
| Tuesday: 1:40-2:30 PM | Grand Hall 5 | Journey Into Innovation   | The session will take an in-depth look at how we need to do more than reform education, we need to transform it. An innovative approach to education change means providing the space, services, and materials to all students, regardless of gender, race, ethnicity, or socioeconomic background. Participants will share ideas and be guided through a series of examples to generate discussions on obstacles and pitfalls they might encounter during their "journey into innovation".  | Tricia  | Patterson                       | Planning for Equity: STE(A)M for All Students                 | 3-5 teachers, Administrators  | Advanced     |
| Tuesday: 1:40-2:30 PM | Grand Hall 6 | What World Do You Want to See in 2030?  | Come learn how we can work together to build a better future for everyone! This session will serve as a call to action to the United Nations' Global Goals for Sustainable Development. The session will encourage educators to understand the importance of the Global Goals, connect their personal experiences to the goals, and consider how they can take action on the Global Goals for Sustainable Development in both their personal and school lives.   | Carrie  | Siegmund                        | Think Globally, Act Locally-Project Based Learning            | 3-5 teachers, 6-8 teachers, 9-12 teachers                               | All Levels   |
| Tuesday: 1:40-2:30 PM | Oconee 1     | STEM (Science Teaching with Economical Materials)   | Based on the BSCS 5E Instructional Model (engagement, exploration, explanation, elaboration, and evaluation), this presentation will address issues faced by teachers attempting to teach STEM with limited resources (both time and money). Presenters will emphasize the use of low cost or free resources to allow for engagement and exploration using science centers, student journals and project based learning (PBL) activities. Examples will include an interdisciplinary project, "Bugtown", using meal worms to integrate literacy and math skills with science, using investigations and student science journals, an overview of an inquiry approach to electricity/ magnetism (K-8) using "dollar store" materials.  | Carl    | Davis                           | Planning for Equity: STE(A)M for All Students                 | K-2 teachers, 3-5 teachers, 6-8 teachers                                | Introductory |

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| Tuesday: 1:40-2:30 PM | Ocone 2     | Literature + STEM = Success   | Explore the world of children's literature and simple science experiments to help lead to deeper thinking and comprehension skills in reading and science. In this session exploration will focus on force and motion.   | Lynn      | Larsen    | Interdisciplinary Teaching of Georgia Standards of Excellence | K-2 teachers, 3-5 teachers, 6-8 teachers                                | Introductory |
| Tuesday: 1:40-2:30 PM | Cypress 1   |   |  |           |           |   |   |              |
| Tuesday: 1:40-2:30 PM | Empire 1    |   |  |           |           |   |   |              |
| Tuesday: 1:40-3:30 PM | Athena C    | Game On: Using Amazing Race Challenges to Transform Learning and Assessment                           | Learn to use Google Forms and App Smashing to create Amazing Race Challenges for your students! Participants will learn how to take traditional assignments and level them up by engaging students in collaborative 4C (Communication, Collaboration, Critical Thinking and Creativity) learning tasks. You will leave with the templates and tools needed to make your classroom AMAZING!   | Marissa   | Ogando    | Emerging Technologies   | 3-5 teachers, 6-8 teachers, 9-12 teachers, Administrators               | Advanced     |
| Tuesday: 1:40-3:30 PM | Athena F    | Using STEM to protect a pet!  | Is your Beagle regal? Do you go wow wow for your Chow Chow? If you're a pet lover, you'll love this hands-on STEM session! Come learn some coding to protect your pooch or kitty. This session will teach you the very basics of coding and challenge you to create a smart car that can protect your pet when the inside gets too hot. Appropriate for middle and high school, this session is the cat's meowww!  | Wendy     | Peel      | Think Globally, Act Locally-Project Based Learning            | 6-8 teachers, 9-12 teachers   | All Levels   |
| Tuesday: 1:40-3:30 PM | Athena H    | Sun Power for Schools Curriculum: Exploring the fundamentals of waves, circuits, and solar cells      | Solar energy will be vital for humanity's future, yet its fundamentals can be confusing to students. This session will explore hands-on methods to integrate waves, circuits, and energy. Participants will receive access to real time data on solar energy generated by photovoltaic panels at 40+ schools in Georgia.   | Tyson     | Harty     | Interdisciplinary Teaching of Georgia Standards of Excellence | 6-8 teachers, 9-12 teachers   | All Levels   |
| Tuesday: 1:40-3:30 PM | Athena I    | Pegasus: Flying with a little help from my friend   | A NASA K-5 storybook filled with units of STEM to include a massive teacher resource list of NASA activities and three rocket build projects.  | Belynda   | Songer    | Think Globally, Act Locally-Project Based Learning            | K-2 teachers, 3-5 teachers  | Introductory |
| Tuesday: 1:40-3:30 PM | Olympia 2   | Transform your Classroom with Video   | Change up how you deliver instruction and gather student responses. Learn how to integrate Screencastify, Edpuzzle, and Flipgrid in your classroom. It's easy to set up and super useful.  | Lee       | Tucker    | Emerging Technologies   | K-2 teachers, 3-5 teachers, 6-8 teachers, 9-12 teachers, Administrators | Introductory |
| Tuesday: 2:40-3:30 PM | Athena A    |   |  |           |           |   |   |              |
| Tuesday: 2:40-3:30 PM | Athena B    | Science Literacy awith the 5 E's  | Increase student engagement and understanding using techniques to help focus student learning. Help students at all ability levels to gain a deeper understanding of nonfiction text. Discover ways to help students interact with text to bring understanding and strategies to express their growing ideas with others.  | Valerie   | Sellers   | Interdisciplinary Teaching of Georgia Standards of Excellence | K-2 teachers, 3-5 teachers, 6-8 teachers, 9-12 teachers, Administrators | All Levels   |
| Tuesday: 2:40-3:30 PM | Athena D    | "STEAM Thru Drones" - Fostering STEAM Education through Drone Curriculum                              | Teaching students STEAM education through Project Based Learning, including challenges to enhance critical thinking. The mission is to introduce unmanned aerial systems - drones to students of Rural Areas with lack of exposure to unmanned aerial systems through STEAM.   | La'Quata  | Sumter    | Emerging Technologies   | 3-5 teachers, 6-8 teachers, Administrators                              | All Levels   |
| Tuesday: 2:40-3:30 PM | Athena E    | STEAM is Lit! Competition Teams & Community Connections - Making STEAM Matter to all Key Stakeholders | Are you striving to make connections between your school and community to gain support from outside your classroom and get real world connections for your students learning? Do you constantly look for ways to inspire and motivate your students to compete at their highest level and never quit learning and improving STEAM/STEM projects? I teach in a middle school STEAM Lab and have thriving competition teams that drive my instruction/curriculum in the classroom and keep students returning to sign up for my class! I have tools to share and experience with building teams resulting in ideal productive teamwork and award winning projects and competitive teams that bring home trophies and build confidence in students. Community connections and competition can help strengthen your STEAM/STEM program, come learn and discuss how in this session.  | Amy       | Smith     | Community and Business Partnerships                           | 3-5 teachers, 6-8 teachers  | Introductory |
| Tuesday: 2:40-3:30 PM | Athena G    | Sparking Curiosity in Underserved Students for STEM   | This session provides a developmental learning experience for those who are in positions to teach or support minorities and women in STEM. By engaging in an effort to raise teacher consciousness and ability to address diversity in STEM, attendees will walk away with engaging teaching ideas to support and increase student interest and attitudes.   | Aubrey D. | Crook     | Planning for Equity: STE(A)M for All Students                 | K-2 teachers, 3-5 teachers, 6-8 teachers, Administrators                | Introductory |
| Tuesday: 2:40-3:30 PM | Olympia 1   | Cultural "Buy-In" to STEM   | Want to learn strategies that will help motivate teachers into the STEM initiative? This presentation will cover collaborative practices that motivate teachers to "buy-in" to the STEM initiative. This presentation will include a school's journey to STEM certification with a Medical emphasis to elementary curriculum and partnerships.   | Doug      | Yarbrough | Think Globally, Act Locally-Project Based Learning            | K-2 teachers, 3-5 teachers, Administrators                              | Introductory |
| Tuesday: 2:40-3:30 PM | Parthenon 1 | Field Trip: No bus? No ticket? No problem!  | By using Google Voyager, Google Arts and Culture, Google Tour Builder, and Google Lit Trips, teachers and students can travel anywhere in the world without leaving the comforts of the classroom.   | Amanda    | Driver    | Emerging Technologies   | 3-5 teachers  | Introductory |
| Tuesday: 2:40-3:30 PM | Partnenon 2 | Exploring STEM Earth Science Lessons with FREE SunPower for Schools Curriculum!                       | This session introduces the Sun Power for Schools Curriculum with many opportunities for curriculum-connected STEM applications and a website with real time and archived data on solar energy generated by photovoltaic panels across Georgia. After a brief introduction to the curriculum for middle and secondary Earth Science and Earth Systems, activities for attendees will involve: (1) an exploration of the real time and archived data on the Sun Power for Schools website, (2) a short introduction to STEM-based projects connecting solar energy to real world applications, and (3) a survey of current resources related to solar energy. The activities and projects are selected from 5E based lessons in the curricula. Each lesson also provides suggested teacher prompts and open-ended questions as well as guidance for probing anticipated student misconceptions. For an introduction to the entire Sun Power Curriculum, see other sessions in this series including but not limited to Life, Biology, and Environmental Sciences. | Judy      | Cox       | Interdisciplinary Teaching of Georgia Standards of Excellence | 6-8 teachers, 9-12 teachers   | Introductory |



