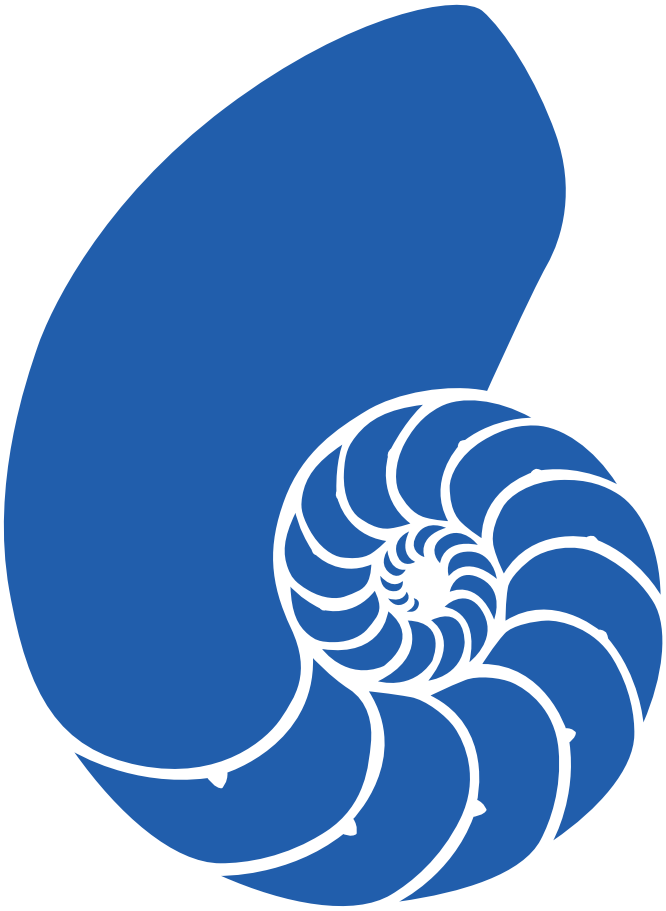

ME by the SEa

Conference for STEM Educators

June 15, 2018 • Texas A&M University-Corpus Christi

8–8:40 am – Check-In & Breakfast, CI first floor
8:40–8:55 am – Welcome, CI 113
9–11:50 am – Parallel Sessions, CI & CS rooms
12–1:30 pm – Lunch Speaker: Dr. Jack Southard, CI 138
1:30–3:20 pm – Parallel Sessions, CI & CS rooms
3:30–4 pm – Business Meeting/Door Prizes/CEUs Awarded, CI 113

Vendors

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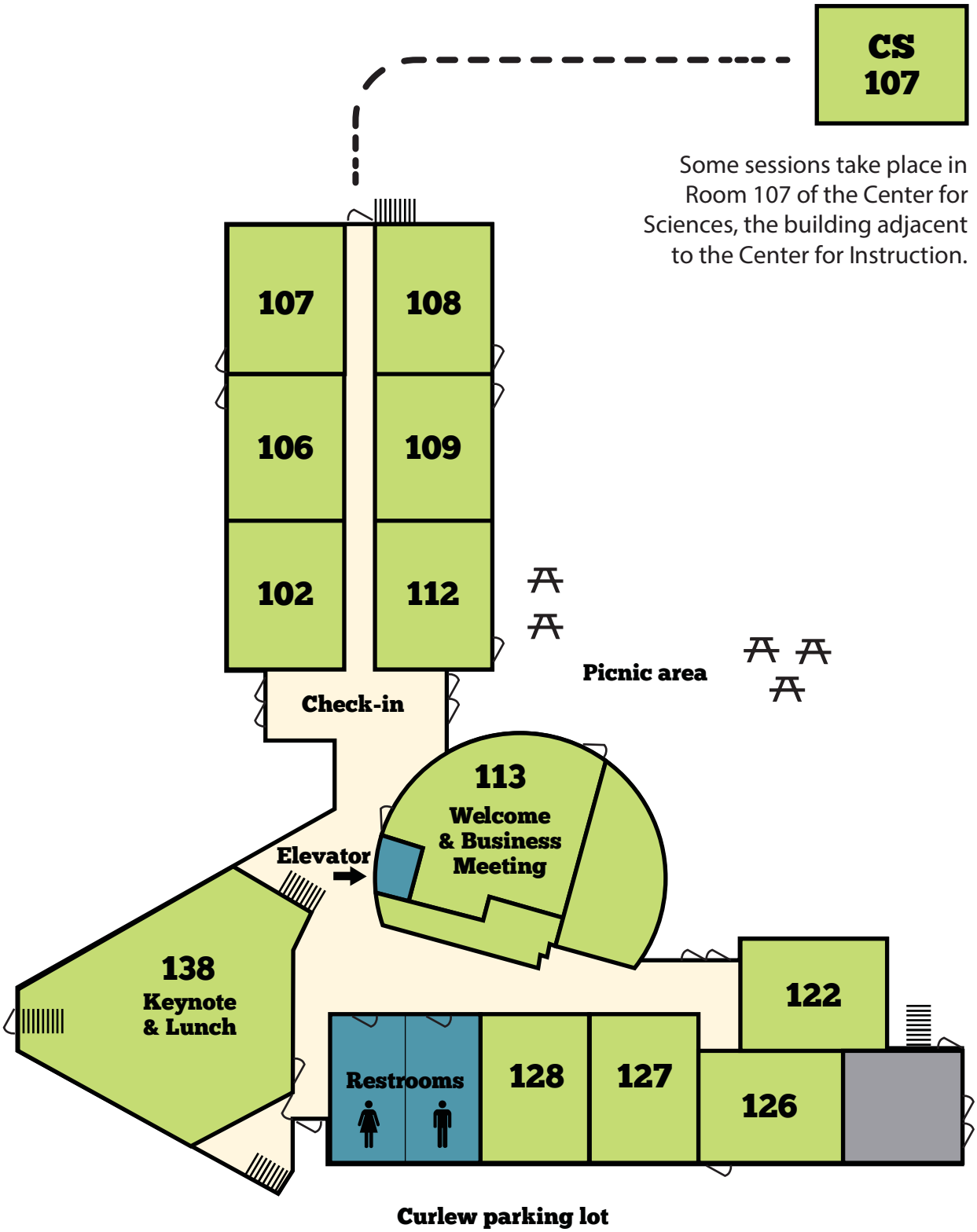
Wildlife IN FOCUS

Map *Center for Instruction (CI) building*



Sessions *at a glance*

	9:00 am	10:00 am	11:00 am
CI 122 **Math/Sci K–5**	**Conkey & Green** Cyber EcosySTEM: Using Bee-Bots to Investigate Ecosystems *PK–2*	**Green & McNair** Picture this: Using Children's Picture Books in STEM Education	**Hernandez** Building Addition and Subtraction Fluency with Math Tools
CI 126 **Sci/Math 3–5**	**Evans** Learning in and from Nature *PK–2* (90 minutes)		**Salinas** Using Reading Skills to Solve Word Problems with Operations
CI 127 **Sci 6–8**	**Coles** Texas Environmental Literacy Plan *All Levels* (90 minutes)	**Foster & Grundy** She Sorts Sea Shells by the Seashore. *6–8* (90 minutes)	
CI 128 **Sci 6–8**			**Alvarado** Robotics Activities
CI 102 **Sci All Levels**	**Ortiz & Sigg** Why Workshops? Put the Kids to Work.	**Woodworth** Down and Not So Dirty: Modeling Wetlands in the Classroom. *3–8*	
CI 106 **Math 3–8**	**Morrow** (Vendor) Coding or Computational Thinking - What's the Difference?	**Silva** Differentiation: Dimensions of Depth and Complexity	**Stein** Multiplication Tools, Tried & True - Some New to Me - Some New to You!
CI 107 **Math 6–8**	**Price** Flipped Classroom	**Ruiz & Perez** These Are a Few of Our Favorite Things	
CI 108 **STEM**	**Stuart, Martinez, & Botello** Drone Club	**Bayarena & Fernandez** Underwater Robotics	**Leary** Makey Makey
CI 109 **Math Secondary**	**Black & Quinones** Gary Chapman 5 Love Languages *All Disciplines*	**Mack** Planning a Unit of Algebra 2 with Technological Innovation	**Valles, Stoerkel, & Kumar** Employing Scaffolding to Facilitate Deeper Learning *6–12*
CI 112 **Math All-Level**	**Allred** Teaching Mathematics with and for Social Justice (90 minutes)		**Allred** Speaking Mathematics: Impact of Better Self-Talk & Feedback
CI 2nd floor **Computer Lab**	**Espinosa & Bippert** Interactive Classrooms: Engaging Students through Technology Applications		**Wilson** Zombie Apocalypse I: STEM of the Living Dead with the TI-84
CS 107	**Mendoza** Representing Integers and Integer Operations with Manipulatives (90 minutes)	**Gill & TAMIU students** STEM-Based Discrepant Event Demonstrations (90 minutes)	

12:00 pm	1:30 pm	2:30 pm	3:30 pm
LUNCH **Science: A Hands-on Discipline** CI 138 *featuring* **Dr. Jack Southard** Associate Professor of Chemistry Del Mar College Boxed lunches and drinks may be picked up on the 1st floor of the CI building near the check-in tables. Please join us with your lunch in CI 138 for Dr. Southard's presentation.		**Morrow** (Vendor) Fluency Without Fear through Patterning and Computational Thinking	**CCTM** **Meeting & Door Prizes** CI 113 Join us for a short business meeting with elections, door prizes, and certificates for professional development hours. • Please fill out the evaluation sheet and place it in the box. • Please help us recycle your name badges in the box provided. Note: Professional development (CEU) certificates will be available at the end of the meeting.
	Jones & Sandroussi CRA Sequenced Math Instruction		
	Juarez & Gonzalez Google Classroom	**Pringle** The Key to Student Achievement: Dichotomous Keys	
		Silva Ideas for Math Centers	
	Wells & Garcia Formative Assessments at Your Fingertips	**Krug** Gulf of Mexico Research Initiative Information and Data Cooperative (GRIIDC) *9–12*	
	Jasper & Foster Retaining Mathematics Learning – What Works *6–12*		
	Allred Girls Aren't Interested in STEM… or Are They?	**Rios** Makerspaces: Where Do I Start? How Far Can I Go? What Do I Need?	
	Stoerkel, Valles, & Kumar Fluid Thinking with Euler's Formula *6–12*	**Kumar, Stoerkel, & Valles** Capturing Antarctica – How Much Land for Penguins? *6–12*	
	Flores (Vendor) Financial Wellness and Retirement 101		
	Wilson Zombie Apocalypse I: STEM of the Living Dead with the TI-Nspire CX	**Wilson** Things Your Mama Never Told You about the TI Website	
	McQueen Labs without Limits *9–12*		

Sessions *detailed descriptions*

9:00 am

Cyber EcosySTEM: Using Bee-Bots to Investigate Local Ecosystems	Drs. April T. Conkey & Marybeth Green	PK–2 Science, Tech, & Math	CI 122

Come see our problem-based environmental curriculum for 2nd graders involving wildlife, landscape ecology, and robotic programming in the Coastal Bend. Students demonstrated their understanding of local food web interactions by programming BeeBot robots to navigate the landscape using special mats representing the Coastal Bend.

Learning in and from Nature	Kristin Evans	PK–2 Science & Math	CI 126

[90 MINUTES] Explore "classroom ready" nature-based lessons and activities for PK-2 students. Lessons support STEAM learning, align to TEKS and can be implemented inside or outside the classroom. Participants will learn about, and engage in, a range of nationally recognized and awarded activities.

Texas Environmental Literacy Plan	Sarah Coles	6–8 Science	CI 127

[90 MINUTES] The new Texas Environmental Literacy Plan has been released to both formal and informal educators throughout the state. The ELP's Goal II pertains to formal education and has the objective to "support the TEKS in K-12 Science and Social Studies standards that reflect the inclusion of natural resource/environmental literacy knowledge and skills in a way that are consistent and identifiable across all grade levels." In addition, Goal III encourages the partnership between both formal and informal educators. This session will look at how educational institutions can form partnerships to bridge the gap of environmental literacy and how natural resources can be used to support TEKS in all grade levels. The session will include workshopping ideas to take back to the classroom.

Why Workshops? Put the Kids to Work.	Jenna Ortiz & Monica Sigg	6–8 Science/All Levels	CI 102

Get ideas on how to maximize your instructional time while minimizing your work load. Learn how to incorporate active learning strategies that will help build responsibility in your students.

Coding or Computational Thinking - What's the Difference?	Tony Morrow (vendor)	K–8 Math	CI 106

Computational Thinking is the thought process behind coding. While coding itself is becoming automated, Computational Thinking is the creative human component that is key to problem solving with computers. How do we get all students to practice and build Computational Thinking skills?

Flipped Classroom	Christine Price	6–8 Math	CI 107

This session will be focused on a "flipped classroom" setting within a math classroom. The pros and cons of the idea will be discussed as well as the real life lessons learned by myself and my colleagues as we implemented this program within our school. A brief run through of a specific lesson plan will be demonstrated as well as free resources provided such as lesson plans, lesson videos with Cornell notes, and much more.

Drone Club: Why your campus needs one, and what it can provide to your STEM students	Randall Stuart, Joseph Martinez, & Scott Botello	STEM	CI 108

Learn about aspects including safety, connections to curriculum, and extensions to college and career.

Gary Chapman 5 Love Languages	Melissa Black & Cynthia Quinones	All Level Science, Tech, & Math	CI 109

As educators are we meeting our students' emotional needs? Building a relationship with our students is important when trying to reach the most difficult students. This session will explore Dr. Gary Chapman's 5 love languages.

Teaching Mathematics with and for Social Justice	Dr. Polly Allred	All-Level Math	CI 112

[90 MINUTES] Teaching Mathematics for Social Justice (TMfSJ): This interactive session includes a group math lesson/activity inspired by Rethinking Mathematics: Teaching Social Justice by the Numbers, by Gutstein and Peterson. Following the activity, the presenter will discuss theory and perspectives from leading social justice math educators. "Social Justice" is often a political buzzword. Educators in the session will re-evaluate the purpose of schooling, and learn a framework for teaching WITH and FOR social justice, which means our goal is to learn, teach, and use mathematics to help all people participate equitably in society and live with prosperity and dignity.

Interactive Classrooms: Engaging Students Through Technology Applications	Tomas Espinosa & Dr. Kelli Bippert	All-Level Science & Tech	CI 2nd Fl. Comp. Lab

Learn how application of technological and creative tools can help develop a multimodal approach by integrating technology and increasing engagement, participation, and collaboration. These tools can involve visual, audio, and kinesthetic modes supporting a social constructivist teaching philosophy.

Representing Integers and Integer Operations with Manipulatives	Steven Mendoza	CS 107

[90 MINUTES] Do you only *kind of* know how to model integers and integer operations with two color counters? Are you up for exploring a more effective number line model? If you don't already use these non-negotiable teaching tools, come learn about them! Struggling students benefit from exposure to various models, so come get some practice with using these tools to reinforce student learning in integers. Make sure that you understand how these models represent mathematical concepts so that you can effectively implement them with your students.

10:00 am

Picture this: Using Children's Picture Books in STEM Education	Dr. Marybeth Green & Dr. Lisa McNair	6–8 Science	CI 122

Picture books have the power to help children make sense of their world. Learn how to use high quality STEM picture books to strengthen literacy skills while engaging students in STEM inquiry and problem-solving.

Down and Not So Dirty: Modeling Wetlands in the Classroom	Rachel Woodworth	3–8 Science & Math	CI 102

Gear up as we trek out into the coastal wetlands! During this interactive session, educators will experience coastal wetlands within the comfort of their classroom. Participants will construct a 3-D wetland model, use their observational skills to classify wetland plants, and conclude with making a prediction on the future of our hurricane buffer, flourishing habitat, and water purifier.

Differentiation: Dimensions of Depth and Complexity	Dr. Melana Silva	CI 106

Teachers are told that they need to differentiate, but rarely are they shown how to do this. In this session, application of Sandra Kaplan's Depth and Complexity Icon Chart will be utilized to demonstrate how teachers can use these tools to raise the rigor in their classroom.

These are a Few of Our Favorite Things	Vanessa Ruiz & Sylvia Perez	6–8 Math	CI 108

Are you a new teacher? Are you a veteran teacher? We'd love to show you OUR FAVORITE THINGS! You'll get an idea! And you'll get an idea! Come and join us for a time of discussion as we share a collection of our favorite things from local math teachers!

Underwater Robotics	Mario Bayarena & Priscilla Fernandez	All-Level Science, Tech, & Math	CI 108

Use marine technology to inspire and challenge students to learn and creatively apply science, technology, engineering, and math (STEM) to solving real-world problems in a way that strengthens critical thinking, collaboration, entrepreneurship, and innovation.

Planning a Unit of Algebra 2 with Technological Innovation	Dr. André Mack	All-Level Math	CI 109

Experience a demonstration of a unit of Algebra 2 lessons, consisting entirely of free online applications. The presentation will discuss advantages of this type of educational technology for its archive-ability, creating formative assessment data; its portability, supporting various instructional designs and peer-grouping; and its scalability, applying to elementary mathematics and AP Calculus.

10:30 am

She Sorts Sea Shells by the Seashore	Dr. Drs. Andrea Foster & Lola Grundy	6–8 Science	CI 127

[90 MINUTES] Examining Sea Shells using dichotomous keys -- Calling all shell collectors! This exciting hands-on/minds-on session explores the use of dichotomous keys in middle grades science classes. Sand buckets and sea shells are provided.

STEM-Based Discrepant Event Demonstrations	Dr. Puneet Gill & TAMIU Students	All-Level STEM	CS 107

[90 MINUTES] Elementary science education students and teachers from TAMIU will present STEM-based discrepant event demonstrations. First, Dr. Gill will provide an overview of discrepant events. Next, participants will be asked to rotate among discrepant events demonstrated by students in order to understand mathematics application and science connections.

11:00 am

Building Addition and Subtraction Fluency with Math Tools — Robyn Hernandez — CI 122

Only 30% of the population are rote memorizers. Memorizing facts is not an effective strategy to improve fact fluency. In this session, participants will engage in many early elementary computation strategies highlighted in the TEA Math Academies using a variety of concrete tools, such as rekenreks, double ten frames, and beaded number lines that will encourage students to become fluid and flexible with their addition and subtraction facts.

Using Reading Skills to Help Students Solve Word Problems with Operations — Diana Salinas — 3–5 Math — CI 126

Learn how to use reading comprehension skills to assist students with solving word problems including the use of Concept Vocabulary vs. Clue Words and the use of Literature Circles to help understand the story problem!

Robotics Activities — Mayra Alvarado — All-Level Science, Tech, & Engineering — CI 128

Take part in fun, hands-on activities to get students in your classroom interested in robotics. Several challenges will let participants use their creativity, critical thinking skills and inventiveness to design and test their creations.

Multiplication Tools, Tried and True - Some New to Me - Some New to You! — Catherine Stein — 3–8 Math — CI 106

This presentation will engage the use of the simple multiplication chart for equivalent fractions, quick multiplying tips, division tips, and a plethora of other tips.

Makey Makey — Gary Leary — All-Level Technology — CI 108

How to create interactive review boards using a Makey Makey

Employing a Scaffolding Technique to Facilitate Deeper Learning — Drs. Elizabeth Stoerkel, James R. Valles, & A. A. Kumar — 6–12 Science, Tech, & Math — CI 109

This presentation will discuss definitions of scaffolding and effective scaffolding practices, plus how the practices can help students increase metacognition, leading to improved individual learning and problem solving skills.

Speaking Mathematics: The Impact of Better Self-Talk and Feedback — Dr. Polly Allred — All-Level Math — CS 112

This session will interactively explore how our speech (Vygotsky's "self talk", and what we say to students) impacts how students learn mathematics. We will do a "reframing" exercise, where we learn to change what we say to improve learners' self-efficacy. I will present research and strategies for improving mathematics learning simply by changing what we say about learning mathematics.

Zombie Apocalypse I: STEM of the Living Dead with TI-84 Plus — Robb Wilson (vendor) — 9–12 Tech & Math — CI 2nd Fl. Comp. Lab

This session will provide an overview of the free resources available at the TI website (www.education.ti.com) to support instruction of the TEKS in both math and science classrooms, and to prepare students for STAAR exams. Resources include lesson activities, STEM materials, test prep information for SAT, ACT, and AP exam, programming and coding lessons, and the TI-Innovator System.

1:30 pm

CRA Sequenced Math Instruction	Kimberly Jones & Charlene Sandroussi	3–5 Math	CI 126

Do you want your students to develop deeper conceptual knowledge while increasing their on-task behavior and motivation? If so, the concrete-representational-abstract sequence of math instruction is for you! Students physically manipulate objects, use images to represent those objects, and use numbers/symbols to solve math problems.

Google Classroom	Jennnifer Juarez & Melisa Gonzalez	All-Level Science & Tech	CI 127

We will quickly look at different ways to incorporate mini assessments into Google classroom. Then we will explore the use of HyperDocs (Choice Menus) to help student focus on their own areas of concern from the mini assessments. By using Google Slides, the teacher can link various online videos and simulations to help students review certain topics. Then they can reassess using google forms linked to the HyperDoc.

Financial Wellness and Retirement 101	Andrew Flores (vendor)	CI 112

Basic financial planning concepts with an emphasis on explaining the Teacher Retirement System Pension Plan. Learn how to create a blueprint for long-term financial wellness and techniques to evaluate financial decisions.

Formative Assessments at Your Fingertips	Michelle Wells & Annabel Garcia	CI 102

Learn how to do formative assessments using technology at your hand. Nearpod can be used from any device that has internet connection and is partially free. It can also be assigned through Google classroom. CK-12 plix is also free and can be used with Google classroom. This is a great assessment and reteach tool. They are totally free.

Retaining Mathematics Learning - What Works	Drs. Bill Jasper & Andrea Foster	6–12 Science & Math	CI 107

This interactive session will explore research and teaching techniques that enhance the retention of mathematics concepts for long-term memory and understanding. Applications to science will also be discussed.

Girls Aren't Interested in STEM…or Are They?	Dr. Polly Allred	All-Level STEM	CI 108

This presentation and discussion will focus on how we nurture girls in STEM, especially African-American girls and Latinas. The presenter will present research findings, propose action steps, and address how we as teachers provide support, opportunities, and reinforcement that is meaningful to girls. These research findings contradict previous information that girls are not interested in STEM, especially after middle grades. They are interested at all ages!!

Fluid Thinking with Euler's Formula	Drs. James Valles, Elizabeth Stoerkel, & AA Kumar	6–12 Science, Engineering, & Math	CI 109

Mathematics is more than rote calculation. Creativity and "outside-the-box" thinking are valuable tools in problem solving and mathematics. We will discuss what fluid thinking is and as an application look at how it applies to Euler's formula ($V - E + F = 2$) in both two dimensions and three dimensions.

Zombie Apocalypse I: STEM of the Living Dead with the TI-Nspire CX	Robb Wilson (vendor)		CI 2nd Fl. Comp. Lab

This free hands-on TI-Nspire activity launched the TI STEM Behind Hollywood series. The materials provide students with an inside look at the math and science used to track the spread of diseases through a population. Engage students with graphing geometric progression, interpreting data, making predictions, understanding logistical curves, and discussing factors dealing with immunity and vaccines. Check it out – www.education.ti.com/go/stemhollywood. Will you survive?

Labs Without Limits: Research and Evidence-Based Application of Virtual Labs to Promote Instructional Differentiation and Achievement for Special Learning Populations in STEM Subjects	Dr. Jaime McQueen	9–12 Science, Tech, & Math	CS 107

Extending upon the author's previous related research, this presentation: Summarizes relevant current research; describes how application of virtual labs and their affordances can provide differentiated instruction and facilitate achievement for special learning populations (e.g., gifted and talented and special education students) in STEM subjects; and offers related practice-based recommendations.

2:30 pm

Fluency Without Fear through Patterning and Computational Thinking	Tony Morrow (vendor)	PK–8 Tech & Math	CI 122

New research shows that when you believe you CAN do math, you will learn more from your mistakes than if you view yourself as "not a Math Person." How do you develop fluency without killing confidence with drills? See how students enjoy deliberate practice in fluency through a variety of patterning and Computational Thinking games.

Classification Tools: The "Key" to Student Achievement in Middle School Science is Hands-on	Nicole Pringle	6–8 Science	CI 127

Dichotomous keys are valuable biological tools used to identify unknown organisms. Scientists utilize the classification device to discover new species. Learning how to use them and teach students to use them can be a challenge. This session will prepare teachers and students to use dichotomous keys. Education Specialists with the UT-Marine Science Institute and The Mission Aransas Reserve will bring hands-on materials to support learning taxonomic classification, examine organisms, and use modified dichotomous key to identify plants from coastal salt marshes.

Gulf of Mexico Research Initiative Information and Data Cooperative	Stephanie Krug	9–12 Science	CI 102

An introduction to the Gulf of Mexico Research Initiative Information and Data Cooperative (GRIIDC): an open-access data repository for the Gulf of Mexico. You will learn how to find data using the Data Discovery portal and how to use data in your classroom.

Ideas for Math Centers	Dr. Melana Silva	K–5 Science & Math	CI 128

What types of activities do you want your students to do in a Math/Science Center? Come learn some creative ways to engage your students during center time.

Makerspaces: Where Do I Start? How Far Can I Go? What Do I Need?	Simon Rios	All-Level STEM	CI 108

Turn your campus into the school that is leading the way in your district, area, and state by starting, expanding, or infusing makerspaces into your work. Want to know more? Think you know it all- well there will be something for everybody.

Capturing Antarctica–How Much Land for the Penguins? A Project-Based Approach to Teaching Geometry	Drs. Abburi Kumar, Elizabeth Stoerkel, & James R. Valles	6–12 Science, Tech, & Math	CI 109

We present an approach to teaching geometry through "purposeful" project-based instruction. We illustrate this approach by calculating the area of Antarctica in light of its geographical, ecological, social and political implications. Audience will be provided with manipulatives – maps and grids – to try this approach.

Things Your Mama Never Told You about the TI Web Site	Robb Wilson (vendor)	9–12 Tech & Math	CI 2nd Fl. Comp. Lab

This session will provide an overview of the free resources available at the TI website (www.education.ti.com) to support instruction of the TEKS in both math and science classrooms, and to prepare students for STAAR exams. Resources include lesson activities; STEM materials; test prep information for SAT, ACT, and AP exam; programming and coding lessons; and the TI-Innovator System. See you there.

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