



Georgia Science Teachers Association

2015 Annual Conference

Macon Marriott City Center & Wilson Convention Centre

February 5-7, 2015



Science for All: Putting the Pieces Together

Conference Sponsors

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GSTA Conference Leadership Team

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- Carroll County Schools

Dr. Jeremy Peacock, Program Chair

- Northeast Georgia RESA

Brian Butler, Local Arrangements

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- Retired

Dr. Kelly Price, Registration

- Forsyth County Schools

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GSTA Presidents

| Name | Term | Conference Location | Name | Term | Conference Location |
|------------------------|-----------|------------------------|--------------------------|-----------|------------------------|
| Donna Governor | 2014-2015 | Macon | Kathy O'Neil | 1985-1986 | Peachtree City |
| Zoe Evans | 2013-2014 | Macon | Don Berkowitz | 1984-1985 | Rock Eagle |
| Sally Creel | 2012-2013 | Atlanta: NSTA Regional | Judy Dennison | 1983-1984 | Rock Eagle |
| Kelly Price | 2011-2012 | Atlanta | Carol Rutland | 1982-1983 | Rock Eagle |
| Chris Kennedy | 2010-2011 | Atlanta | Jaunita Chitwood | 1981-1982 | Callaway Gardens |
| Ann Collins | 2009-2010 | Savannah | Jaunita Chitwood | 1980-1981 | Callaway Gardens |
| Wendy Joiner | 2008-2009 | Savannah | Betty Higgins | 1979-1980 | Woodward Academy |
| Gail Sinkule | 2007-2008 | Athens | Kathryn Garrard | 1978-1979 | NSTA Regional |
| Marion Reeves | 2006-2007 | Athens | William Barrow | 1977-1978 | Athens History Village |
| Steve Rich | 2005-2006 | Columbus | James Coleman | 1976-1977 | Locust Grove |
| Gail Marshall | 2004-2005 | Columbus | Odell Owens, Jr. | 1975-1976 | NSTA Regional |
| Venetia Butler | 2003-2004 | Atlanta: NSTA National | Connie McNeil | 1974-1975 | Macon |
| Karol Stephens | 2002-2003 | Jekyll Island | Wayne Edwards | 1973-1974 | Savannah |
| Judy Godfrey | 2001-2002 | Jekyll Island | Willis Brown, Jr. | 1972-1973 | --- |
| Ellen Roach | 2000-2001 | Macon | Lonnie Love | 1971-1972 | --- |
| Mary Atwater | 1999-2000 | Macon | Richard Johnson | 1970-1971 | --- |
| Mark Stallings | 1998-1999 | Atlanta | Lucy Smith | 1969-1970 | --- |
| Sharon Boyer | 1997-1998 | Atlanta | Helen Carter | 1968-1969 | --- |
| Bob Moore | 1996-1997 | Augusta | Tully Pennington | 1967-1968 | --- |
| Joe Moore | 1995-1996 | Augusta | Montine Wilson | 1966-1967 | --- |
| Francis Gardner | 1994-1995 | Savannah | Charles Coleman | 1965-1966 | --- |
| Mary Wilde | 1993-1994 | Savannah | H.V. Bullock | 1964-1965 | --- |
| Ellen Averill | 1992-1993 | Atlanta Airport | Al Woodard | 1963-1964 | --- |
| Linda Bostick | 1991-1992 | Atlanta Airport | Bill Leach | 1962-1963 | --- |
| Melody Hall | 1990-1991 | Columbus | Dallas Stewart | 1961-1962 | --- |
| Margaret Eidson | 1989-1990 | Atlanta: NSTA National | Cora Middleton | 1960-1961 | --- |
| Linda Mitchell | 1988-1989 | Savannah | Betty Cheek | 1959-1960 | --- |
| Daisy Waldrep | 1987-1988 | Savannah | Liley Calhoun | 1958-1959 | --- |
| John Finley | 1986-1987 | Peachtree City | | | |

Science for All: Putting the Pieces Together

Georgia Presidential Awardees for Excellence in Science Education



The Presidential Award for Excellence in Science Teaching is the Nation's highest honor for teachers of science and mathematics. It is awarded annually by the White House and administered by the National Science Foundation. One Georgian is honored annually in Washington, DC during a weeklong celebration featuring visits to the White House and a State Dinner. More information is available at www.paemst.org. In Georgia, the award is administered through the Georgia Department of Education.

| Year | Awardee (Grade Level) | |
|------|--|-------------------------------------|
| 2012 | Christy Garvin, Powder Springs (K-6) | |
| 2011 | Kelly Stewart, Fulton County (7-12) | |
| 2010 | Amanda McGehee, DeKalb (K-6) | |
| 2009 | Rachael Parr, Jefferson (7-12) | |
| 2008 | Halley Page, Athens (K-6) | |
| 2007 | Donna Governor, Forsyth County (7-12) | |
| 2006 | Pamela Krohne-Google, Dallas (K-6) | |
| 2005 | Zoe Evans, Carrollton (7-12) | |
| 2004 | Vicki Jacobs, Morrow (K-6) | |
| 2003 | Janice Hudson, Columbus (7-12) | |
| 2002 | Terrie Kielborn, Carrollton (K-6) | Wynn Mott, Woody Gap (7-12) |
| 2001 | Clelia Scott, Brunswick (K-6) | Steve Rich, Douglasville (7-12) |
| 2000 | Jane Moore, Gwinnett (K-6) | Tina Cross, Columbus (7-12) |
| 1999 | Amanda Buice, Barnesville (K-6) | Amy Denty, Jesup (7-12) |
| 1998 | Marlee Tierce, Conyers (K-6) | Sandra Eidson, Oakwood (7-12) |
| 1997 | Rhonda Toon, Barnesville (K-6) | Marsha Hood, College Park (7-12) |
| 1996 | Sylvia Dee Shore, Columbus (K-6) | Roger Wesley McCoy, Kennesaw (7-12) |
| 1995 | Rita VanFleit, Lithonia (K-6) | Barbara Cornelius, Winder (7-12) |
| 1994 | Teresa Jordan Gruendl, Savannah (K-6) | Phyllis Rump, Woodstock (7-12) |
| 1993 | Betty Ann Ingram Smith, Newnan (K-6) | Thomas E. Hall, Moultrie (7-12) |
| 1992 | Barbara G. Piper, Austell (K-6) | Lynda H. Peterson, Marietta (7-12) |
| 1991 | Cathy Rich Robinson, Savannah (K-6) | Trissa Luftig, Norcross (7-12) |
| 1990 | Carol Burbilis, Winder (K-6) | Sandra J. Rhoades, Kennesaw (7-12) |
| 1989 | Michael Edmondson, Columbus (7-12) | |
| 1988 | Jeffrey D. Cramer, Atlanta (7-12) | |
| 1987 | Daniela M. Taylor, Norcross (7-12) | |
| 1986 | Beverly S. Lang, Newnan (7-12) | |
| 1985 | Lila Kathryn McGahee, Adair (7-12) | |
| 1984 | Annie Laura Pace, Athens (7-12) | |
| 1983 | Richard R. Bell, Lithia Springs (7-12) | |

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2015 GSTA Awards

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2015 GSTA Mini-Grants

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2015 GSTA Board Elections

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Conference At A Glance

Wednesday, February 4, 2015

- 6:00 - 8:00 pm Registration

Thursday, February 5, 2015

- 7:00 am - 5:00 pm Registration
- 8:00 am - 5:00 pm Exhibit Hall Open
- 8:00 am - 5:00 pm Field Trips (*Tickets Required*)
- 8:00 am - 11:00 am Concurrent Sessions
- 11:00 am - 11:50 am General Session, Exhibit Hall B
 - Featured Speaker: Dr. Marshall Shepherd, Professor of Geography, University of Georgia, ***Building Public Understanding of Weather and Climate Science***
- 12:00 pm - 5:00 pm Concurrent Sessions
- 5:00 pm - 5:30 pm District Meet & Greet, Registration Lobby

Friday, February 6, 2015

- 7:00 am - 5:00 pm Registration
- 8:00 am - 5:00 pm Exhibit Hall Open
- 8:00 am - 5:00 pm Field Trips (*Tickets Required*)
- 8:00 am - 11:00 am Concurrent Sessions
- 11:00 am - 12:30 am General Session, Exhibit Hall B
 - GSTA Annual Meeting
 - Featured Speaker: Dr. Stephen Pruitt, Senior Vice President for Content, Research and Development, Achieve, Inc., ***Using Your Teacher Voice***
- 1:00 pm - 5:00 pm Concurrent Sessions
- 5:00 pm - 5:30 pm Exhibitor Door Prize Drawing, Exhibit Hall
- 6:30 pm - 10:00 pm Awards Banquet, Armory Ballroom (*Tickets Required*)
 - Featured Speaker: Bill Badders, NSTA Past President

Saturday, February 7, 2015

- 7:30 am - 9:30 am Registration
- 8:00 am - 12:00 pm Concurrent Sessions
- 8:00 am - 3:00 pm Touching Triton Workshop for High School Biology Teachers (*Tickets Required*)

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Field Trips

Thursday Morning



The Hay House

- One of Georgia's most historic homes and distinguished structures, the Johnston-Felton-Hay House in Macon was declared a National Historic Landmark in 1974 and is an engineering marvel of the 19th century.
- \$20 (includes ticket and transportation)



Museum of Arts and Sciences

- The MAS is the only cultural institution in Georgia focused on both art and science and the largest general purpose museum in the state, featuring exhibits, a full-dome planetarium, an observatory, and a mini zoo with over 70 live animals, a Discovery House with interactive exhibits, beautiful nature trails, a 200+ seat auditorium, the Museum Store, and more.
- \$15 (includes ticket and transportation)



Piedmont National Wildlife Refuge

- Visit the Piedmont NWR to learn how the endangered Red Cockaded Woodpecker is being protected. Tour includes a visit to the onsite education area and a tour of some of the refuge to see how different portions of the refuge are utilized. This tour may include extensive walking.
- \$15 (includes transportation)

Thursday Afternoon



Ocmulgee National Monument

- Established in 1936, this location protects the earthen mounds built by the Muscogee Creek Indians. Watch a video about the history and archaeological excavation of the area, see the museum that details the food sources and technologies of the time, and finally take an interpretive tour of the grounds, including the mounds, swamp, railroad cut, and available walking trails. This tour may include extensive walking.
- \$10 (includes transportation)



Museum of Aviation - Robins Air Force Base

- Visit the Robing Air Museum and see more than 70 aircraft from the WWII era forward, including the flight speed world record holding SR-71A "Blackbird." Tour is guided and includes STEM activities, such as a flight simulator. The museum and grounds are very larger and will require a fair amount of walking.
- \$15 (includes ticket and transportation)

Science for All: Putting the Pieces Together

Friday Morning



The Hay House

- One of Georgia's most historic homes and distinguished structures, the Johnston-Felton-Hay House in Macon was declared a National Historic Landmark in 1974 and is an engineering marvel of the 19th century.
- \$20 (includes ticket and transportation)



Kamin, Inc.

- Visit a large-scale kaolin mining operation located right in Middle Georgia. This tour will include a visit to an active open pit mine, a tour of a reclaimed mine site, and a visit to the processing facility to see how kaolin can be used commercially and industrially. This tour will include a fair amount of walking and will require closed-toe, low-heeled shoes for safety.
- \$15 (includes transportation)



Museum of Aviation - Robins Air Force Base

- Visit the Robins Air Museum and see more than 70 aircraft from the WWII era forward, including the flight speed world record holding SR-71A "Blackbird." Tour is guided and includes STEM activities, such as a flight simulator. The museum and grounds are very large and will require a fair amount of walking.
- \$15 (includes ticket and transportation)



Boeing Macon

- Visit the Boeing Aircraft Manufacturing facility to see how the A-10 Warthog wings, Chinook Helicopter, and C-17 GlobeMaster are built. Closed-toed shoes and sleeved shirts are required for safety. This tour will require a fair amount of walking and stair climbing. Hearing protection will be provided.
- \$10 (includes transportation)

Friday Afternoon



Plant Scherer

- Peak producing a total of 3520 GW from its 4 turbines, Plant Scherer is one of the largest coal-fired power plants in the world. This tour will include the turbine room, coal field, and other areas. Closed-toed shoes are required for safety, and hearing protection will be provided. This tour will require a fair amount of walking and stair climbing.
- \$15 (includes transportation)



Museum of Arts and Sciences

- The MAS is the only cultural institution in Georgia focused on both art and science and the largest general purpose museum in the state, featuring exhibits, a full-dome planetarium, an observatory, and a mini zoo with over 70 live animals, a Discovery House with interactive exhibits, beautiful nature trails, a 200+ seat auditorium, the Museum Store, and more.
- \$15 (includes ticket and transportation)



Conference Strands



Integrated STEM Education

Sessions will focus on programs and approaches that truly integrate learning experiences across the STEM disciplines with the goal of supporting science learning for all students. (Strand based in Ballroom A.)

Integrating Science Within the CCGPS



With a special focus on the elementary grades, sessions will focus on intersections among science standards and the CCGPS for mathematics, English language arts, and literacy in science. (Strand based in Ballroom B.)



GPS Within the Framework

Sessions will focus on instructional approaches that integrate the science and engineering practices and crosscutting concepts of the *Framework for K-12 Science Education* with the content of the science GPS. (Strand based in Ballroom C.)

Preservice & Early Career Teachers



This strand will kick off with the *Conference First Timers Session* Thursday morning and will continue with a special series of sessions aimed at supporting preservice and early career teachers in their transition into the profession. (All sessions in Magnolia A.)

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The Learning Continues in the Exhibit Hall

- Learn about resources, products, and services from a variety of vendors.
- Stop by the GSTA Store
- Collect 15 stamps in your Exhibit Hall Passport for a chance to win great door prizes. Drop your passport in the door prize box at the Exhibit Hall Registration Desk, by 4:30 PM on Friday.
- Door Prize drawing will be held on Friday at 5:10 pm in the Exhibit Hall. ***You must be present to win.***

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Integrated STEM Education (Based in Ballroom A)

| | | | |
|---|--|---|---|
| Thursday 8:00-8:50 306 Leveraging Literacy for K-5 STEM Jessica Holden, Jen Johnston, Monica Grace, Lesley Grimes | Thursday 8:00-8:50 308 Earthquake Technology STEM Challenge Kelly Bodner | Thursday 8:00-8:50 310 Georgia Tech's RET: Creating K-12 STEAM Lessons Based on Engineering Research Jamila Cola | Thursday 8:00-8:50 313 Nanoscale Science as an Avenue to STEM in Elementary and Middle Schools Joyce Allen |
| Thursday 8:00-8:50 Ballroom Using real-time solar energy data to support student learning related to the role of energy in living systems Gail H. Marshall, Judy Cox | Thursday 8:00-8:50 Ballroom D Ancient Egypt...It's All Elementary! Dawn Hardy & Heidi Hines | Thursday 9:00-9:50 303 Genetics and incorporating STEM with CPO Crazy Traits Kit Erik Benton | Thursday 9:00-9:50 313 Making a School Garden Grow David Knauft, Maria Bowie, Judy Hibbs, Susan Reinhardt |
| Thursday 9:00-9:50 324 Differentiation and STEM...a Win-Win Situation Lynn Larsen, Dean Laskey | Thursday 9:00-9:50 Ballroom A Say NO to STEMwashing Kelly Bodner, Colleen Cauffiel, Sally Creel | Thursday 9:00-9:50 Ballroom D Science Smash Up! Christina Hood, Cindy Gay | Thursday 9:00-9:50 Grand Salon A Are You Out Of Your Flipping Mind? Randy Smith |
| Thursday 9:00-9:50 Magnolia B Go Virtual! Field Trips for the Millennial Learner Bejanae Kareem, Tommy Clay | Thursday 9:00-10:50 308 Destination Imagination - Innovation STEMs from Creativity Annette Rogers, LaTrina Howell | Thursday 9:00-10:50 310 Teaching High School Epidemiology Evern Williams | Thursday 9:00-10:50 Exhibit Hall A NOAA Fisheries Research in the Engineering Classroom Janelle Wilson |
| Thursday 9:00-10:50 Magnolia CD Eco-Tech: ...Integrating Technology in Outdoor Learning Captain Planet Foundation | Thursday 10:00-10:50 303 STEM—Early Childhood Style! Terri George | Thursday 10:00-10:50 309 Sci. and Eng. Practices & STEM come alive in the Middle School ... Classroom Kathy Armstrong, Marilyn Enoch | Thursday 10:00-10:50 312 Post-Secondary Partnerships: Utilizing Resources Kania Greer |

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|--|--|--|--|
| <p>Thursday 10:00-10:50 324</p> <p>STEM (STREAM) and Sea Turtles</p> <p>Susan Collins, Caitlin Crews, Jessica Timms, & Jennifer Erhardt</p> | <p>Thursday 10:00-10:50 Ballroom A</p> <p>Ready, Set, Go STEM</p> <p>Erin Anderson</p> | <p>Thursday 10:00-10:50 Ballroom D</p> <p>STEM Teacher Leadership</p> <p>Martha Milam</p> | <p>Thursday 10:00-10:50 Exhibit Hall B</p> <p>The Model of STEM in Georgia</p> <p>Gilda Lyon, Juan Carlos Aguilar</p> |
| <p>Thursday 10:00-10:50 Grand Salon A</p> <p>Top 10 High-Tech Formative Assessment Strategies for Science</p> <p>Tom Brown, Mike Eby</p> | <p>Thursday 10:00-10:50 Grand Salon B</p> <p>...Case Studies in Elementary School to Teach Science, ... Literacy, and Mathematics</p> <p>Georgia Hodges, and others</p> | <p>Thursday 10:00-10:50 Magnolia B</p> <p>Engineering Made Easy</p> <p>Bejanae Kareem</p> | <p>Thursday 11:00-12:50 310</p> <p>Integrating the Art of Nanotubes</p> <p>Mariah Buchanan</p> |
| <p>Thursday 12:00-12:50 306</p> <p>Camp Invention and Invention Project--Be a Part of Something BIG!</p> <p>Kim Moore</p> | <p>Thursday 12:00-12:50 308</p> <p>Hands on STEM in Action: Ron's Habitat Adventure</p> <p>Debi Goodman</p> | <p>Thursday 12:00-12:50 309</p> <p>What Causes Change of Motion? A STEMriffic perspective</p> <p>Marilyn Enoch, Kathy Armstrong</p> | <p>Thursday 12:00-12:50 312</p> <p>Where the Wild Things Are - K-3 Arts Integrated STEAM Unit</p> <p>Sherri Jarrett, Emilee Black, Tonya Rogers</p> |
| <p>Thursday 12:00-12:50 Ballroom A</p> <p>STEM Now--How?</p> <p>Debbie Stuckey</p> | <p>Thursday 12:00-12:50 Ballroom E</p> <p>The Engineering and Design Process in Kindergarten? Absolutely!</p> <p>Angie Curtis</p> | <p>Thursday 12:00-12:50 Magnolia CD</p> <p>Plastic and Recycling Awareness Curriculum</p> <p>Carter Ries, Olivia Ries, Jim Ries</p> | <p>Thursday 1:00-1:50 308</p> <p>Getting the Most Out of Middle Schoolers Integrating Science and Math with Data</p> <p>Karol Stephens</p> |
| <p>Thursday 1:00-1:50 324</p> <p>Science Exposition to the Rescue!</p> <p>Rachael Parr, Thomas Layfield, Tiffany Barnett</p> | <p>Thursday 1:00-1:50 Ballroom A</p> <p>Google Classroom & Inquiry-Based Learning</p> <p>Christine Jackson, Amanda Palmer</p> | <p>Thursday 1:00-2:50 306</p> <p>Getting Started with STEM in the Elementary Classroom</p> <p>Colleen Cauffiel</p> | <p>Thursday 1:00-2:50 310</p> <p>Making Sense of Sensors: A Hands-On Exploration</p> <p>Carrie Beth Rykowski</p> |
| <p>Thursday 1:00-2:50 313</p> <p>Viewing the Invisible</p> <p>Ann Robinson, Sharon Kirby, Dave Todd</p> | <p>Thursday 1:00-2:50 Magnolia B</p> <p>Moving Full STEAM Ahead!</p> <p>Bejanae Kareem, Shermaine Perry, Dharma Stevens</p> | <p>Thursday 1:00-2:50 Magnolia CD</p> <p>Citizen Science Sampler</p> <p>Donna Barrett, Karan Wood</p> | <p>Thursday 2:00-2:50 308</p> <p>Yes They Can! Elementary Students Can Do Data!</p> <p>Karol Stephens</p> |
| <p>Thursday 2:00-2:50 Ballroom A</p> <p>Science and Math Nights--Using STEM</p> <p>Susan Collins and others</p> | <p>Thursday 2:00-2:50 Ballroom E</p> <p>Fully Integrated Problem and Place-Based Projects</p> <p>Bonnie Pratt, Nancy Cobb</p> | <p>Thursday 3:00-3:50 303</p> <p>CPO Science Wind Turbine with a focus on STEM</p> <p>Erik Benton</p> | <p>Thursday 3:00-3:50 309</p> <p>There's an App for That!</p> <p>Donna Governor</p> |

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| <p>Thursday 3:00-3:50 Ballroom D</p> <p>Using pHETs in the Classroom and Writing them Too</p> <p>Erica Peddi</p> | <p>Thursday 3:00-4:50 306</p> <p>STEM-Sational Science</p> <p>Donita Legoas, Kristina Istre</p> | <p>Thursday 3:00-4:50 308</p> <p>PINEMAP Southeastern Forest and Climate Change Curriculum</p> <p>Lauren Johnson, Janet Forrest Kent</p> | <p>Thursday 3:00-4:50 310</p> <p>Mechanochemical Phenomena in Blood: A STEAM Lesson</p> <p>Renuka Rajasekaran and others</p> |
| <p>Thursday 3:00-4:50 313</p> <p>Mechanisms of Solar Energy: ...waves, energy, circuits, and solar cells</p> <p>Tyson Harty, Sharmistha Basu-Dutt</p> | <p>Thursday 3:00-4:50 Ballroom A</p> <p>STEM the "Right Way": Building Collaboration with Vital Team Members</p> <p>Jessica Holden and others</p> | <p>Thursday 3:00-4:50 Ballroom E</p> <p>Stuck Like Glue: Integrated STEM challenge</p> <p>Patricia Ucciferri</p> | <p>Thursday 3:00-3:50 Grand Salon A</p> <p>Bring STEM into Your Classroom with Datalogging</p> <p>Alan Gorlin, Gaganjot Singh, John Cox, Linda Stockton</p> |
| <p>Thursday 3:00-4:50 Magnolia CD</p> <p>Transforming Your Schoolyard into an Outdoor STEM Lab</p> <p>Captain Planet Foundation</p> | <p>Thursday 4:00-4:50 303</p> <p>Project-Based Inquiry Learning (PBIL): Science Teaching and Learning for the 21st Century</p> <p>Sabrina Grossman</p> | <p>Thursday 4:00-4:50 312</p> <p>Vertical Teaming: Using NGSS to Give Students Tools for Success in Advanced Secondary STEM Classes</p> <p>Rabieh Jamal Hafza</p> | <p>Thursday 4:00-4:50 Grand Salon A</p> <p>Surviving Science Fair</p> <p>Nick Zomer</p> |
| <p>Friday 8:00-8:50 303</p> <p>Chemistry and the Atom: Atom Building and the Periodic Table</p> <p>Erik Benton</p> | <p>Friday 8:00-8:50 306</p> <p>Life jackets, density, & STEM</p> <p>Donna Barrett</p> | <p>Friday 8:00-8:50 312</p> <p>From Biology to Bio-engineering: Changing Paradigm and Practice</p> <p>Joan Graham</p> | <p>Friday 8:00-8:50 313</p> <p>Redefining Traditional High School Physics Using the Engineering Design Process</p> <p>Hyunjin Son, Jeff Matthews</p> |
| <p>Friday 8:00-8:50 Ballroom A</p> <p>ENGAGE, EMPOWER, and EXCEL with Integrated STEM In Your Classroom!</p> <p>Alana Davis</p> | <p>Friday 8:00-8:50 Ballroom D</p> <p>Using apps for student presentations</p> <p>Lisa Henriquez, Erin Wood</p> | <p>Friday 8:00-8:50 Magnolia B</p> <p>Learning Power - Home As A System</p> <p>Cedric Sheffield</p> | <p>Friday 8:00-8:50 Magnolia CD</p> <p>K-5 NASA Education Resources</p> <p>Lester Morales</p> |
| <p>Friday 9:00-10:50 303</p> <p>Focus and Explore Wave Energy and STEM Education K-8</p> <p>Terri George</p> | <p>Friday 9:00-9:50 308</p> <p>STEM In Action-Sidewalk Safety Exploration</p> <p>Debi Goodman</p> | <p>Friday 9:00-9:50 309</p> <p>Motion, Engineering, Design and Redesign for the Primary Classroom</p> <p>Marilyn Enoch, Kathy Armstrong</p> | <p>Friday 9:00-9:50 Ballroom A</p> <p>Teaching STEM through Literacy for All</p> <p>Maria Thurmond, Beth Feustel</p> |
| <p>Friday 9:00-9:50 Ballroom E</p> <p>Getting Physical with I-Pads</p> <p>Tracy Robinson</p> | <p>Friday 9:00-9:50 Exhibit Hall A</p> <p>Enrich Your STEM Curriculum with Ham Radio I</p> <p>North Fulton Amateur Radio League</p> | <p>Friday 9:00-10:50 Magnolia B</p> <p>The CDC: ...teaching epidemiology and public health science in middle and high school</p> <p>Ralph Cordell, Kelly Cordeira</p> | <p>Friday 9:00-9:50 Magnolia CD</p> <p>Shark Trackers: Utilizing STEM to Connect Research and Education</p> <p>Chantal Audran</p> |

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| <p>Friday 10:00-10:50 309</p> <p><i>Building an Electric Motor the STEM way with CPO Science</i></p> <p>Erik Benton</p> | <p>Friday 10:00-10:50 312</p> <p><i>Approaches to attract underrepresented students into STEM career learning pathways</i></p> <p>Lawrence King</p> | <p>Friday 10:00-10:50 Ballroom D</p> <p><i>Robotic Bee and Bugs - Let's Learn About Our Environment!!</i></p> <p>Joannah Shoushtarian</p> | <p>Friday 10:00-10:50 Exhibit Hall A</p> <p><i>Enrich Your STEM Curriculum with Ham Radio II</i></p> <p>North Fulton Amateur Radio League</p> |
| <p>Friday 1:00-1:50 303</p> <p><i>STEM—Early Childhood Style!</i></p> <p>Terri George</p> | <p>Friday 1:00-2:50 308</p> <p><i>MDJunior - An Integrated Afterschool STEM Program</i></p> <p>Sid Verma, Shaun Verma, Deepa Ranganathan</p> | <p>Friday 1:00-1:50 324</p> <p><i>Using STEAM to teach Chemistry NGSS</i></p> <p>Maria Thurmond, Beth Feustel</p> | <p>Friday 1:00-2:50 Ballroom A</p> <p><i>STEMstars: Explore STEM resources generated from a long-standing university-school district partnership</i></p> <p>Laura Regassa and others</p> |
| <p>Friday 2:00-2:50 306</p> <p><i>STEM: Engineering Design Process</i></p> <p>Michael Bush</p> | <p>Friday 2:00-2:50 324</p> <p><i>Engineering in Elementary Grades Where do I start?</i></p> <p>Denise Webb, Amber Hoke</p> | <p>Friday 3:00-4:50 303</p> <p><i>Creating and Implementing Effective Watersheds of Georgia Lessons for All Students</i></p> <p>Cherry Brewton</p> | <p>Friday 3:00-4:50 309</p> <p><i>21st Century Instruction: Problem-Based Learning in the Middle and High School Classroom</i></p> <p>John Schafer</p> |
| <p>Friday 3:00-4:50 Ballroom A</p> <p><i>Integrated STEM Instruction through Project Based Learning</i></p> <p>Michael Reilly and others</p> | <p>Friday 3:00-4:50 Ballroom E</p> <p><i>Biotechnology Tool Box</i></p> <p>Catherine Teare Ketter, John Rose, Chip Pollard</p> | <p>Friday 3:00-3:50 Exhibit Hall A</p> <p><i>Enrich Your STEM Curriculum with Ham Radio III</i></p> <p>North Fulton Amateur Radio League</p> | <p>Friday 3:00-4:50 Grand Salon A</p> <p><i>Teaching STEM through Birds</i></p> <p>Deb Jenkins, Melanie Furr, Area Teachers</p> |
| <p>Friday 3:00-4:50 Magnolia CD</p> <p><i>Environmental Stewardship: 5 Engaging Project-Based Learning Activities</i></p> <p>Karan Wood</p> | <p>Friday 4:00-4:50 310</p> <p><i>Energizing your students with Robotics, Sponsors and Resources</i></p> <p>Walton Robotics</p> | <p>Friday 4:00-4:50 312</p> <p><i>Using Interdependence to Foster Inquiry</i></p> <p>Heather Scott and others</p> | <p>Friday 4:00-4:50 324</p> <p><i>Georgia Envirothon: an outdoor natural resource high school competition</i></p> <p>Josh Seehorn, Tyson Harty</p> |
| <p>Friday 4:00-4:50 Ballroom D</p> <p><i>Host a STEAM Summer Camp at your Middle School</i></p> <p>Kari Salomon, David Schoenrock</p> | <p>Saturday 8:00-9:50 308</p> <p><i>Learning Technology</i></p> <p>Carnellia Ajasin and Kina Champion</p> | <p>Saturday 8:00-8:50 309</p> <p><i>Science E Learning tool for parents and Teachers</i></p> <p>Sudeep Kumar</p> | <p>Saturday 8:00-8:50 Ballroom A</p> <p><i>Using real-time solar energy data ... in ... earth science investigations.</i></p> <p>Judy Cox, Gail Marshall</p> |
| <p>Saturday 8:00-8:50 Ballroom D</p> <p><i>Fast, easy and CHEAP STEM</i></p> <p>Lisa Henriquez, Erin Wood</p> | <p>Saturday 8:00-8:50 Ballroom E</p> <p><i>Science Intensive Program at the Satit Kaset International Program School, Bangkok</i></p> <p>Larry Hampton and others</p> | <p>Saturday 8:00-8:50 Grand Salon A</p> <p><i>Just Go With the Flow! Classroom STEM Integration in an Inclusion Setting</i></p> <p>Alana Davis</p> | <p>Saturday 9:00-9:50 306</p> <p><i>Teaching 21st-Century Reasoning Skills Through ... STEM Research Experience</i></p> <p>Deborah Walker, Robert Mayes</p> |

Science for All: Putting the Pieces Together

| | | | |
|--|---|--|---|
| <p>Saturday 9:00-9:50 310</p> <p><i>Breathe easy with hands-on STEM for Middle School.</i></p> <p>Joseph Giunta, Gretchen Gigley</p> | <p>Saturday 9:00-9:50 324</p> <p><i>Using Maps, Fossils, and Place-Based Learning To Explore the History of Life in Georgia</i></p> <p>Christy Visaggi and others</p> | <p>Saturday 9:00-9:50 Ballroom A</p> <p><i>Using Contextualized STEM to Engage At-Risk Students</i></p> <p>Jeremy Dockery</p> | <p>Saturday 9:00-9:50 Ballroom D</p> <p><i>Science Ambassadors</i></p> <p>Donna Governor, Denise Webb</p> |
| <p>Saturday 9:00-9:50 Ballroom E</p> <p><i>Integrating a STEM Day and STEM Lessons</i></p> <p>Lucas Findlay</p> | <p>Saturday 9:00-9:50 Grand Salon B</p> <p><i>How to Revolutionize Ordinary Labs</i></p> <p>Marc Pedersen</p> | <p>Saturday 10:00-11:50 306</p> <p><i>Robots on the Move</i></p> <p>Ronnie Thomas, Reggie Oneil, Tommy Clay</p> | <p>Saturday 10:00-11:50 308</p> <p><i>Breadboards are Not Just for Kitchens!</i></p> <p>Susannah Lomant</p> |
| <p>Saturday 10:00-11:50 313</p> <p><i>Got CSI?</i></p> <p>Linnell Burton</p> | <p>Saturday 10:00-11:50 324</p> <p><i>Mars Colony STEM</i></p> <p>Joanna Beck, Timothy Lees, Katie Williams</p> | <p>Saturday 10:00-10:50 Ballroom A</p> <p><i>Stemulating Science Lessons for the Elementary Science Classroom</i></p> <p>Steven King</p> | <p>Saturday 10:00-11:50 Ballroom E</p> <p><i>Engineering the Periodic Table, An Arts Integration Unit</i></p> <p>Stanley Adkins</p> |
| <p>Saturday 10:00-11:50 Grand Salon A</p> <p><i>I AM SOME BODY</i></p> <p>ROSLYNN STEWART</p> | <p>Saturday 10:00-10:50 Magnolia CD</p> <p><i>A Vacation Through the Solar System</i></p> <p>April Leachman</p> | <p>Saturday 11:00-11:50 Ballroom A</p> <p><i>The Work of an Engineer</i></p> <p>Amy Gilbert, Katie Wade</p> | <p>Saturday 11:00-11:50 Ballroom B</p> <p><i>STEMming out in AP Science & Electives</i></p> <p>Amy Coleman and others</p> |
| <p>Saturday 11:00-11:50 Ballroom C</p> <p><i>STEM overhaul for your classroom</i></p> <p>Patti Grammens, Lilly Turpin</p> | <p>Saturday 11:00-11:50 Ballroom D</p> <p><i>Get There Green: Transportation Challenge</i></p> <p>Joseph Giunta, Gretchen Gigley</p> | <p>Saturday 11:00-11:50 Grand Salon B</p> <p><i>Science Virtually</i></p> <p>Belynda Songer</p> | <p>Saturday 11:00-11:50 Magnolia B</p> <p><i>Sisters in Science</i></p> <p>Tynisha Harris</p> |



The Learning Continues in the Exhibit Hall

- Learn about resources, products, and services from a variety of vendors.
- Stop by the GSTA Store
- Collect 15 stamps in your Exhibit Hall Passport for a chance to win great door prizes. Drop your passport in the door prize box at the Exhibit Hall Registration Desk, by 4:30 PM on Friday.
- Door Prize drawing will be held on Friday at 5:10 pm in the Exhibit Hall. ***You must be present to win.***

Science for All: Putting the Pieces Together



Integrating Science Within the CCGPS (Based in Ballroom B)

| | | | |
|---|---|--|--|
| Thursday 8:00-8:50 309 Build the Bridge ... through FOSS Science-Centered Language Development Marilyn Enoch and Kathy Armstrong | Thursday 8:00-8:50 312 But I don't teach Language Arts! Michael Kelly | Thursday 8:00-8:50 324 Accelerating Science Through Learning Labs Rachael Parr, Tiffany Barnett | Thursday 8:00-8:50 Ballroom B Literature Comes ALIVE! Tresa Snow and Devon Chodos |
| Thursday 8:00-8:50 Magnolia B Motivating Students: Wrapped Up in Motion Bonita Fallon and others | Thursday 9:00-9:50 306 Outstanding Mastery Guides for Science - Creating a Reference Resource for Middle School Students Amy Gilbert | Thursday 9:00-9:50 312 The Effects of Field Experiences Upon Students' Outlook Toward ... Conservation Stacy Wolfe | Thursday 9:00-10:50 Ballroom B Picture Perfect Science, Grades K-2 Karen Ansberry, Emily Morgan |
| Thursday 10:00-10:50 Ballroom E Watershed Conservation Curriculum Michael Dias and others | Thursday 12:00-12:50 Ballroom B Next Time You See... Nonfiction Books Emily Morgan | Thursday 12:00-12:50 Ballroom D Earth Science Investigation Stations Amber Hoke | Thursday 12:00-12:50 Magnolia B NASA Remote Sensing Tools for Educators Lester Morales |
| Thursday 1:00-2:50 303 Integrating Literacy Strategies Into Middle School Life Science Terri George | Thursday 1:00-2:50 Ballroom B Picture Perfect Science, Grades 3-5 Karen Ansberry, Emily Morgan | Thursday 2:00-2:50 324 STEM is Literacy: Using Evidence from Collaborative Conversations to Construct a Response Monia Grace and others | Thursday 3:00-3:50 324 Secrets in the Garden Rachael Parr, Jenny Buley |
| Thursday 3:00-4:50 Ballroom B Tech.-Enhanced 5E Cycle to Support Literacy in Science Adam Shirley, Jeremy Peacock | Friday 8:00-8:50 Ballroom B Literacy in Science Whitney Patterson, Janee Smith, Ashli Jay | Friday 9:00-9:50 310 It's not all Black and White! Implementing R.A.C.E. in the Science classroom. Shandreka Gibson and others | Friday 9:00-10:50 324 Lunar and Meteorites Disk Program Lester Morales |

Science for All: Putting the Pieces Together

Friday 9:00-10:50 Ballroom B
Picture Perfect Science, Grades 3-5
 Karen Ansberry, Emily Morgan

Friday 9:00-9:50 Ballroom D
Got Bones?
 Sarida Hoy

Friday 10:00-10:50 308
Science Reimagined: Using Claims, Evidence, and Reasoning to Promote Literacy in Science
 Melinda Roberson

Friday 10:00-10:50 313
NASA Powers of Ten: Scaling the Universe
 Tyson Harty

Friday 10:00-10:50 Grand Salon A
Explaining Science Mysteries
 Kenneth Linsley

Friday 1:00-1:50 312
Incorporating ELA into Science labs (K-5)
 Heather Hayes, Heidi Morea

Friday 1:00-2:50 Ballroom B
Picture Perfect Science, Grades K-2
 Karen Ansberry, Emily Morgan

Friday 1:00-1:50 Ballroom D
Take a Bite out of Data Analysis!
 Sarida Hoy

Friday 1:00-2:50 Ballroom E
Using ... water activities to teach phys. and earth sci. ... in elem. and middle grades.
 Catherine Teare Ketter and others

Friday 1:00-2:50 Exhibit Hall A
And the Tide Comes In
 Venetia Butler

Friday 2:00-2:50 303
Interested? Tell me about it!
 Lynn Weber

Friday 2:00-2:50 Ballroom D
Who Are You?
 Sarida Hoy

Friday 3:00-3:50 312
Project-Based Learning Partnership between Language Arts and Science
 Michele Langhans

Friday 3:00-3:50 Ballroom B
Reading a Test is Hard Work!
 Jodi Wheeler-Toppen

Friday 3:00-4:50 Magnolia B
Science Driven Interactive Writing
 Bejanae Kareem, Tommy Clay

Friday 4:00-4:50 308
POST-it: Vocabulary fit for 5E's classrooms
 Amy Rejmer

Friday 4:00-4:50 Ballroom B
Technology in Science
 Whitney Patterson, Janee Smith, Ashli Jay

Friday 4:00-4:50 Magnolia A
Scientific Argumentation Through Explicit Inquiry and Immersion
 Jayma Koval and others

Saturday 8:00-9:50 Ballroom B
Quick Literacy Strategies that Increase Student Engagement
 Cheryl Hudson

Saturday 8:00-9:50 Magnolia B
Field Testing SAGES
 Captain Planet Foundation teachers

Saturday 8:00-9:50 Magnolia CD
Integrating Sci. Literacy and Problem-Based Learning
 Mashawn Duncan-Young and others

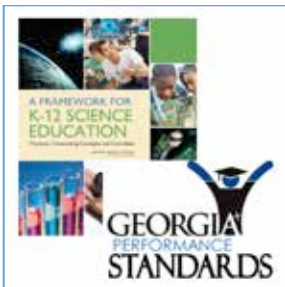
Saturday 9:00-9:50 309
Physics Labs: Starting from Scratch
 Laura A. Whitlock, Ioana Beldeanu

Saturday 10:00-10:50 309
Lighten Your STEM Load with Color and Optics
 Tom Hsu

Saturday 10:00-10:50 Ballroom B
Scientific Explanation in Elementary Classrooms
 Michelle Bergozza

Saturday 11:00-11:50 309
The Delightful STEM Science of Music and Sound Waves
 Tom Hsu

Science for All: Putting the Pieces Together



GPS Within the Framework (Based in Ballroom C)

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| <p>Thursday 8:00-8:50 Ballroom C</p> <p>Web 2.0 Tools and You!</p> <p>Polly baron</p> | <p>Thursday 9:00-9:50 309</p> <p>How to... fun STEM lesson for the primary classroom without losing your mind</p> <p>Marilyn Enoch and Kathy Armstrong</p> | <p>Thursday 9:00-9:50 Ballroom E</p> <p>Science On a Shoestring</p> <p>Pamela Lane</p> | <p>Thursday 9:00-9:50 Grand Salon B</p> <p>Chain of Food</p> <p>Shiona Drummer</p> |
| <p>Thursday 9:00-10:50 Ballroom C</p> <p>Integrating Science and Engineering</p> <p>Ellen Granger, Todd Bevis</p> | <p>Thursday 10:00-10:50 313</p> <p>Models in the Physical Sciences</p> <p>Ann Marie Dubick</p> | <p>Thursday 12:00-12:50 Ballroom C</p> <p>Constructing Explanations ... to build an Academically Challenging Environment</p> <p>Moneak McCrary</p> | <p>Thursday 12:00-12:50 Grand Salon A</p> <p>What's the hardest concept for you to teach?</p> <p>Kristina Cummings, Amanda Erceg, and others</p> |
| <p>Thursday 12:00-12:50 Grand Salon B</p> <p>Biotechnology in the Classroom</p> <p>Marc Pedersen</p> | <p>Thursday 12:00-1:50 Exhibit Hall A</p> <p>Teaching Physical Science through Robotics ...</p> <p>Mike Ryan, Sabrina Grossman, and others</p> | <p>Thursday 1:00-1:50 309</p> <p>Fun Weird Science</p> <p>Ronnie Thomas</p> | <p>Thursday 1:00-1:50 Grand Salon B</p> <p>Turning Labs into Arguments</p> <p>Jennifer Barnes</p> |
| <p>Thursday 1:00-2:50 Ballroom C</p> <p>Developing and Using Models in the Science Classroom</p> <p>Todd Bevis, Ellen Granger</p> | <p>Thursday 2:00-2:50 Grand Salon B</p> <p>Show me what you've Learned-Part 2</p> <p>Sue L Burrell, Barbara Mullis</p> | <p>Thursday 3:00-3:50 312</p> <p>Applying the GPS to Stabilize Earth Hazards</p> <p>Bill Witherspoon, Pamela J.W. Gore</p> | <p>Thursday 3:00-3:50 Grand Salon B</p> <p>Beak of the Finch - Evolution + Math</p> <p>Jennifer Barnes</p> |
| <p>Thursday 3:00-4:50 Ballroom C</p> <p>Integrating ... Elementary Science Performance Standards</p> <p>Barbara Rascoe</p> | <p>Thursday 3:00-4:50 Magnolia B</p> <p>Georgia Rocks and Minerals</p> <p>Naomi Thompson, Donna Mullenax</p> | <p>Thursday 4:00-4:50 309</p> <p>Activities for High School Biology- POGIL</p> <p>Denise Lester</p> | <p>Thursday 4:00-4:50 324</p> <p>This is not your mother's environmental science class.</p> <p>Claudia Hagan</p> |

Science for All: Putting the Pieces Together

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| <p>Thursday 4:00-4:50 Grand Salon B</p> <p>Interactive Notebooks: ... get ALL students to succeed</p> <p>Tanya Flynn, AnnMarie Alford</p> | <p>Friday 8:00-8:50 308</p> <p>Streamline Your Preparation & Presentation with Student Notebooks</p> <p>Doug Miller</p> | <p>Friday 8:00-8:50 309</p> <p>Crosscutting Concepts: What Do They Look Like in an Elementary Classroom?</p> <p>Kathy Armstrong and Marilyn Enoch</p> | <p>Friday 8:00-8:50 310</p> <p>Morphing Physics and Engineering</p> <p>Sheila Harmony</p> |
| <p>Friday 8:00-8:50 Ballroom C</p> <p>Teaching Outdoor Science with Children's Literature</p> <p>Steve Rich</p> | <p>Friday 8:00-8:50 Grand Salon A</p> <p>Engaging Students in Productive Science Talk</p> <p>Kenneth Linsley, Jeremy Peacock</p> | <p>Friday 8:00-8:50 Grand Salon B</p> <p>Notebooking for HS Biology</p> <p>Sue L Burrell, Barbara Mullis</p> | <p>Friday 9:00-9:50 Grand Salon A</p> <p>Mitosis and Meiosis, Let's List It</p> <p>Paul Barber, Jefferey Hargrove</p> |
| <p>Friday 9:00-9:50 Grand Salon B</p> <p>Classroom Redesign Pt. 1</p> <p>Jennifer Barnes, Chelsea Sexton, Jeremy Peacock, Zoe Evans</p> | <p>Friday 9:00-10:50 306</p> <p>Building Science Vocabulary via Notebook Foldables®</p> <p>Nancy Wisker</p> | <p>Friday 9:00-10:50 Ballroom C</p> <p>Using Argument-Driven Inquiry to Support Students' Science Proficiency</p> <p>Jonathon Grooms</p> | <p>Friday 10:00-10:50 Ballroom A</p> <p>Fostering STEM collaboration ...</p> <p>John Murnan, Michelle Barthlow</p> |
| <p>Friday 10:00-10:50 Ballroom E</p> <p>Using Interactive Science Notebooks...</p> <p>Heather Davison, Denise Finley</p> | <p>Friday 10:00-10:50 Grand Salon B</p> <p>Classroom Redesign Pt. 2</p> <p>Jennifer Barnes, Chelsea Sexton, Jeremy Peacock, Zoe Evans</p> | <p>Friday 1:00-1:50 309</p> <p>Engineering Design with FOSS Next Generation!</p> <p>Marilyn Enoch and Kathy Armstrong</p> | <p>Friday 1:00-1:50 310</p> <p>Solutions in Chemistry: a GPS Unit Plan</p> <p>Nancy Brim</p> |
| <p>Friday 1:00-1:50 Grand Salon B</p> <p>Using Interactive Case Studies in the Biology Classroom</p> <p>Georgia Hodges, and others</p> | <p>Friday 1:00-2:50 Ballroom C</p> <p>Argumentation in the Science Classroom</p> <p>Ellen Granger, Todd Bevis</p> | <p>Friday 2:00-2:50 309</p> <p>Using Science Notebooks to Impact Student Learning for Middle School</p> <p>Kathy Armstrong, Marilyn Enoch</p> | <p>Friday 2:00-2:50 Grand Salon A</p> <p>Biodiversity Big and Small: Exploring Georgia's Flora and Fauna</p> <p>Karen Garland</p> |
| <p>Friday 2:00-2:50 Grand Salon B</p> <p>Gene Regulation & the Evolution of the Stickleback</p> <p>Jennifer Barnes</p> | <p>Friday 3:00-3:50 306</p> <p>Modeling: A Scientific Beauty Contest</p> <p>Lynn Weber</p> | <p>Friday 3:00-3:50 308</p> <p>Make Motion Physics Engaging and Accessible with Robots</p> <p>Tom Hsu</p> | <p>Friday 3:00-3:50 310</p> <p>Composting and the Next Generation Science Standards</p> <p>Paige Flores</p> |
| <p>Friday 3:00-3:50 313</p> <p>Show that you know</p> <p>Monica Baker-Eady</p> | <p>Friday 3:00-3:50 Ballroom C</p> <p>Ranking Activities for Science</p> <p>Rie Cowan, Ouida Dunton</p> | <p>Friday 3:00-4:50 Grand Salon B</p> <p>Bringing Authentic Modeling Into the Science Classroom</p> <p>Zoe Evans, Jeremy Peacock</p> | <p>Friday 4:00-4:50 306</p> <p>Argumentation and Discourse in the STEM Classroom</p> <p>Heather Wilde</p> |

Science for All: Putting the Pieces Together

Friday 4:00-4:50 Ballroom C
Equations Don't Fall from the Ceiling, or Anywhere Higher
Frank Lock

Saturday 8:00-8:50 306
Coteaching: How to make the marriage work
Tanya Flynn

Saturday 8:00-8:50 310
Are science courses changing again?????
Marion Reeves

Saturday 8:00-8:50 324
GEOLOGY! Straight out of the box and on to your classroom lab table.
Stephen Csukas, Desmond Lee, Angela Sauve'

Saturday 8:00-8:50 Ballroom C
Integrating science with confidence
Lynette Clark, Rochelle Mungin

Saturday 8:00-8:50 Grand Salon B
Capturing Students ... through Photography
John Behr, Deb Jenkins, Melanie Furr

Saturday 9:00-9:50 313
Focusing on Change Across the Curriculum
Katie Brkich, Tamra Lamb

Saturday 10:00-10:50 Ballroom C
See.Do. Experience
Christopher Holmes

Saturday 10:00-10:50 Grand Salon B
"Meet me at your iPad?"
Amber Morgan, Randall Spaid, Michael Ryan

Saturday 10:00-10:50 Magnolia B
Classroom websites
Ann Alford, Tanya Flynn

Sun Power EMC Ad

Science for All: Putting the Pieces Together



Preservice & Early Career Teachers (All sessions in Magnolia A)

Thursday 8:00-8:50
First Timers Sessions
Marlee Tierce

Thursday 9:00-9:50
Supporting newly hired science teachers: What the research says
Julie A. Luft

Thursday 10:00-10:50
What Am I Really Getting Myself Into: New Teacher Panel
Chelsea Sexton, Nicholas Mayhew, and others.

Thursday 12:00-12:50
How You Are Evaluated? The State of Teaching Science in an Age of Accountability
George W. Stickel

Thursday 1:00-1:50
Finding Greatness In Your First Years
Drew Adams, Rebekah Cordeiro, Rebecca Mortensen

Thursday 2:00-2:50
Teach science and stay sane!
Louisa McDonald, Alan McGough, Jenna Harvey

Thursday 3:00-4:50
Integrate the Basics First! 3 Main Elements for Effective Classroom Management
Marjorie Bateman

Friday 8:00-8:50
If Neville can do it, so can you.
Claudia Hagan

Friday 9:00-9:50
Survival Guide for New Science Teachers
Michelle Bergozza

Friday 10:00-10:50
The Elephant in the Room
Sue L Burrell

Friday 1:00-2:50
Classroom Management-Is this piece missing from your science education puzzle?
Peter Vajda

3:00-3:50
Save the drama for your Mama.
Deketa Cobb

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Science for All: Putting the Pieces Together



Conference Sessions - Thursday

Session Feedback Surveys - Thursday

- Please provide feedback on each session you attend today by following the URL or QR code to access the online feedback form.
- ???add URL???

| Concurrent Session: Thursday 8:00-8:50 | | | |
|--|--|---|---|
| Title: | Leveraging Literacy for K-5 STEM | | Room: 306 |
| Presenter(s): | Jessica Holden, Jen Johnston, Monica Grace, Lesley Grimes | | |
| Description: | Come see how children's literature can frame a STEM lesson. Participants will experience content integration through the engineering design process with a culminating literacy piece. | | |
| Level: | Lower Elementary, Upper Elementary, Supervisor/Leadership, Pre-service/Early Career Teachers | Strand: | Integrated STEM Education |
| Content: | Physical Science | Sci. & Eng. Practice: Developing and Using Models | Crosscutting Concept: Energy and Matter: Flows, Cycles, and Conservation |
| Title: | Earthquake Technology STEM Challenge | | Room: 308 |
| Presenter(s): | Kelly Bodner | | |
| Description: | You won't want to miss this chance to become a true engineer! Participants will use the engineering design process to construct an earthquake proof structure out of Knex'. All designs will be tested on a wobble top shake table. Prizes will be given to the strongest structures. Come have fun and learn some new ideas on how to make STEM affordable. | | |
| Level: | Upper Elementary | Strand: | Integrated STEM Education |
| Content: | General | Sci. & Eng. Practice: Developing and Using Models | Crosscutting Concept: Systems and System Models |
| Title: | Build the Bridge from Hands-on Experiences to Scientific Understanding through FOSS Science-Centered Language Development | | Room: 309 |
| Presenter(s): | Marilyn Enoch and Kathy Armstrong | | |
| Description: | How to incorporate best practices in language arts instruction to support students' understanding of science concepts and their ability to communicate that understanding | | |
| Level: | Lower Elementary, Upper Elementary, Supervisor/Leadership | Strand: | Integrating Science Within the CCGPS |
| Content: | General | Sci. & Eng. Practice: Obtaining, Evaluating, and Communicating Information | Crosscutting Concept: NA |

Science for All: Putting the Pieces Together

Concurrent Session: Thursday 8:00-8:50

Georgia Tech STEAM Series

The session at left begins a special in which Teachers from Georgia Tech's PRIME Research Experience for Teachers (RET) project present their art-integrated STEM lessons. See below for a list of all sessions in the series.

- **Integrating the Art of Nanotubes**, Thursday 11:00-12:50 310
- **Making Sense of Sensors: A Hands-On Exploration**, Thursday 1:00-2:50 310
- **Mechanochemical Phenomena in Blood: A STEAM Lesson**, Thursday 3:00-4:50 310
- **Engineering the Periodic Table, An Arts Integration Unit**, Saturday 10:00-11:50 Ballroom E

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|----------------------|---|----------------------------------|---|------------------------------|--|
| Title: | Georgia Tech's RET: Creating K-12 STEAM Lesson Plans Based on Engineering Research | | | Room: | 310 |
| Presenter(s): | Jamila Cola | | | | |
| Description: | Learn about Georgia Tech's paid summer internship to develop arts-integrated engineering lessons | | | | |
| Level: | Upper Elementary, Middle, High | Strand: | Integrated STEM Education | | |
| Content: | General | Sci. & Eng. Practice: | NA | Crosscutting Concept: | Scale, Proportion, and Quantity |
| Title: | But I don't teach Language Arts! Reading and writing with document based argumentation in the science classroom | | | Room: | 312 |
| Presenter(s): | Michael Kelly | | | | |
| Description: | Learn to create science literacy mini units including sourcing text, choosing reading strategies, and developing writing prompts. | | | | |
| Level: | Upper Elementary, Middle, High | | | Strand: | Integrating Science Within the CCGPS |
| Content: | General | Sci. & Eng. Practice: | Engaging in Argument from Evidence | Crosscutting Concept: | NA |
| Title: | Nanoscale Science as an Avenue to STEM in Elementary and Middle Schools | | | Room: | 313 |
| Presenter(s): | Joyce Allen | | | | |
| Description: | This hands-on workshop will support student learning of nanoscale science and increase student interest in STEM for grades 3-8. | | | | |
| Level: | Upper Elementary, Middle | | | Strand: | Integrated STEM Education |
| Content: | General | Sci. & Eng. Practice: | Constructing Explanations and Designing Solutions | Crosscutting Concept: | NA |
| Title: | Accelerating Science Through Learning Labs | | | Room: | 324 |
| Presenter(s): | Rachael Parr, Tiffany Barnett | | | | |
| Description: | Through our Learning Acceleration Lab we are able to integrate Science within the CCGPS and give students authentic learning experiences. | | | | |
| Level: | Middle | | | Strand: | Integrating Science Within the CCGPS |
| Content: | Environmental Science | Sci. & Eng. Practice: | Constructing Explanations and Designing Solutions | Crosscutting Concept: | Energy and Matter: Flows, Cycles, and Conservation |

Science for All: Putting the Pieces Together



The Learning Continues in the Exhibit Hall

- Learn about resources, products, and services from a variety of vendors.
- Stop by the GSTA Store
- Collect 15 stamps in your Exhibit Hall Passport for a chance to win great door prizes. Drop your passport in the door prize box at the Exhibit Hall Registration Desk, by 4:30 PM on Friday.
- Door Prize drawing will be held on Friday at 5:10 pm in the Exhibit Hall. **You must be present to win.**

| Concurrent Session: Thursday 8:00-8:50 | | | |
|--|--|----------------------------------|--|
| Title: | <i>Sun Power for Schools Solar Energy Modules: Using real-time solar energy data to support student learning related to the role of energy in living systems</i> | | Room: Ballroom A |
| Presenter(s): | Gail H. Marshall, Judy Cox | | |
| Description: | Developers of lesson modules for Green Power EMC's Solar Energy Curriculum will provide descriptions, with some hands on experiences, to introduce participants to the modules and lessons in this curriculum related to life science/biology/environmental science for middle and high school levels. | | |
| Level: | Middle, High | Strand: | Integrated STEM Education |
| Content: | Biology/Life Science, Environmental Science | Sci. & Eng. Practice: | Analyzing and Interpreting Data |
| | | Crosscutting Concept: | Energy and Matter: Flows, Cycles, and Conservation |
| Title: | <i>Literature Comes ALIVE!</i> | | Room: Ballroom B |
| Presenter(s): | Tresa Snow and Devon Chodos | | |
| Description: | Use everyday books and use hands on activities to design and build characters or setting! | | |
| Level: | Lower Elementary, Upper Elementary | Strand: | Integrating Science Within the CCGPS |
| Content: | General | Sci. & Eng. Practice: | Planning & Carrying Out Investigations |
| | | Crosscutting Concept: | Structure and Function |
| Title: | <i>Web 2.0 Tools and You!</i> | | Room: Ballroom C |
| Presenter(s): | Polly baron | | |
| Description: | Free, fast, and fun! | | |
| Level: | Lower Elementary, Upper Elementary, Middle, High, AP/IB, Pre-service/Early Career Teachers | Strand: | GPS Within the Framework |
| Content: | General | Sci. & Eng. Practice: | NA |
| | | Crosscutting Concept: | NA |
| Title: | <i>Ancient Egypt...It's All Elementary!</i> | | Room: Ballroom D |
| Presenter(s): | Dawn Hardy & Heidi Hines | | |
| Description: | Come and learn what place value, hieroglyphs and mummies have to do with Elementary STEM. hands on integrated study within a topic. | | |
| Level: | Lower Elementary, Upper Elementary | Strand: | Integrated STEM Education |
| Content: | General | Sci. & Eng. Practice: | NA |
| | | Crosscutting Concept: | NA |

Science for All: Putting the Pieces Together

Concurrent Session: Thursday 8:00-8:50

| | | | | |
|----------------------|--|----------------------------------|--|--|
| Title: | <i>First Timers Sessions</i> | | Room: | Magnolia A |
| Presenter(s): | Marlee Tierce | | | |
| Description: | Is this your first time at a GSTA conference? If so, come and learn how to get the most out of the conference! | | | |
| Level: | Lower Elementary, Upper Elementary, Middle, High, AP/IB, College, Administrators, Supervisor/Leadership, Pre-service/Early Career Teachers | Strand: | Preservice & Early Career Teachers | |
| Content: | General | Sci. & Eng. Practice: | NA | Crosscutting Concept: NA |
| Title: | <i>Motivating Students: Wrapped Up in Motion</i> | | Room: | Magnolia B |
| Presenter(s): | Bonita Fallon, Pepper Misinco, Melanie Peterson, Tammy Shiflett | | | |
| Description: | Participants will be involved in hands-on activities. Stations will be force and motion related with STEM connections. | | | |
| Level: | Lower Elementary, Upper Elementary | Strand: | Integrating Science Within the CCGPS | |
| Content: | Physical Science | Sci. & Eng. Practice: | Planning & Carrying Out Investigations | Crosscutting Concept: Cause and Effect: Mechanisms and Explanations |
| Title: | <i>Accommodation and Modifications: Creating Successful Classroom (for all)</i> | | Room: | Magnolia CD |
| Presenter(s): | Sherrie Chovanec and Peter Fischer | | | |
| Description: | As the science classroom becomes more diverse in ability levels, accommodation and modifications and blending of differentiated practices has become necessary for a successful classroom. | | | |
| Level: | Middle, High | Strand: | NA | |
| Content: | General | Sci. & Eng. Practice: | NA | Crosscutting Concept: NA |

Concurrent Session: Thursday 9:00-9:50

| | | | | |
|----------------------|---|----------------------------------|--|--|
| Title: | <i>Genetics and incorporating STEM with CPO Crazy Traits Kit</i> | | Room: | 303 |
| Presenter(s): | Erik Benton | | | |
| Description: | Reinforce vocabulary and concepts while performing hands-on genetics activities based on probability and heredity. | | | |
| Level: | Middle, High | Strand: | Integrated STEM Education | |
| Content: | Biology/Life Science | Sci. & Eng. Practice: | Planning & Carrying Out Investigations | Crosscutting Concept: Cause and Effect: Mechanisms and Explanations |
| Title: | <i>Outstanding Mastery Guides for Science - Creating a Reference Resource for Middle School Students</i> | | Room: | 306 |
| Presenter(s): | Amy Gilbert, Ph.D. | | | |
| Description: | In this workshop participants create part of an Outstanding Mastery Guide – curriculum that in its entirety supports students with Disciplinary Core Ideas of NGSS. | | | |
| Level: | Middle | Strand: | Integrating Science Within the CCGPS | |
| Content: | Physical Science | Sci. & Eng. Practice: | NA | Crosscutting Concept: NA |

Science for All: Putting the Pieces Together

| Concurrent Session: Thursday 9:00-9:50 | | | | |
|--|--|----------------------------------|--|--|
| Title: | <i>How to combine the Engineering Practices, Cross Cutting Concepts, ELA, Math, Inquiry and the Disciplinary Core Ideas all together in a fun STEM lesson for the primary classroom without losing your m</i> | | | Room: 309 |
| Presenter(s): | Marilyn Enoch and Kathy Armstrong | | | Vendor: Delta Education FOSS |
| Description: | A recipe to teach it all: STEM, Engineering Practices, Disciplinary Core Ideas, Cross Cutting Concepts, ELA and Math with FOSS Next Generation Modules. | | | |
| Level: | Lower Elementary, Supervisor/Leadership, Pre-service/Early Career Teachers | | Strand: | GPS Within the Framework |
| Content: | Engineering | Sci. & Eng. Practice: | Planning & Carrying Out Investigations | Crosscutting Concept: Systems and System Models |
| Title: | <i>THE EFFECTS OF FIELD EXPERIENCES UPON STUDENTS' OUTLOOK TOWARD ENVIRONMENTAL AND ECOLOGICAL CONSERVATION</i> | | | Room: 312 |
| Presenter(s): | Stacy Wolfe | | | |
| Description: | Combating Nature Deficit Disorder, this session will focus on strategies to get students interested in nature and off the couch! | | | |
| Level: | Middle, High, AP/IB, Supervisor/Leadership | | Strand: | Integrating Science Within the CCGPS |
| Content: | Environmental Science | Sci. & Eng. Practice: | Asking Questions & Defining Problems | Crosscutting Concept: Patterns |
| Title: | <i>Making a School Garden Grow</i> | | | Room: 313 |
| Presenter(s): | David Knauft, Maria Bowie, Judy Hibbs, Susan Reinhardt | | | |
| Description: | Join fellow teachers and UGA experts to dig into their school garden website, try your hand with a GPPS school garden lesson and enjoy trivia with cool UGA swag for prizes. | | | |
| Level: | Lower Elementary, Upper Elementary, Middle | | Strand: | Integrated STEM Education |
| Content: | General | Sci. & Eng. Practice: | Obtaining, Evaluating, and Communicating Information | Crosscutting Concept: NA |
| Title: | <i>Differentiation and STEM...a Win-Win Situation</i> | | | Room: 324 |
| Presenter(s): | Lynn Larsen, Dean Laskey | | | |
| Description: | Explore the wonderful world of weather while constructing various weather instruments using STEM protocol. | | | |
| Level: | Lower Elementary, Upper Elementary | | Strand: | Integrated STEM Education |
| Content: | Earth Science | Sci. & Eng. Practice: | Constructing Explanations and Designing Solutions | Crosscutting Concept: Cause and Effect: Mechanisms and Explanations |
| Title: | <i>Say NO to STEMwashing</i> | | | Room: Ballroom A |
| Presenter(s): | Kelly Bodner, Colleen Cauffiel, Sally Creel | | | |
| Description: | Unsuspecting teachers are STEMwashing across the state. Activities, labs, and more are being labeled "STEM" just because student are building something. Children as young kindergarten can successfully participate in STEM challenges that incorporate the engineering design process. Come and learn how to avoid STEMwashing in your classroom. Sample STEM challenges correlated to GPS standards will be shared. | | | |
| Level: | Lower Elementary, Upper Elementary | | Strand: | Integrated STEM Education |
| Content: | General | Sci. & Eng. Practice: | NA | Crosscutting Concept: NA |

Science for All: Putting the Pieces Together

| Concurrent Session: Thursday 9:00-9:50 | | | |
|--|--|----------------------------------|--|
| Title: | Science Smash Up! | | Room: Ballroom D |
| Presenter(s): | Christina Hood, Cindy Gay | | |
| Description: | Looking for a quick lab, effective applications / programs, interactive notebook setup ideas, timesaving grading and time management tips? Come and visit Science Smash Up! | | |
| Level: | Middle | Strand: | Integrated STEM Education |
| Content: | General | Sci. & Eng. Practice: | Planning & Carrying Out Investigations |
| | | Crosscutting Concept: | Energy and Matter: Flows, Cycles, and Conservation |
| Title: | Science On a Shoestring | | Room: Ballroom E |
| Presenter(s): | Pamela Lane | | |
| Description: | Cheap middle grade science activities will be demonstrated and discussed. Participants will get to complete some hands-on experiments. Handouts are provided. | | |
| Level: | Middle | Strand: | GPS Within the Framework |
| Content: | General | Sci. & Eng. Practice: | NA |
| | | Crosscutting Concept: | NA |
| Title: | Are You Out Of Your Flipping Mind? | | Room: Grand Salon A |
| Presenter(s): | Randy Smith | | |
| Description: | Utilizing flipped classroom strategies to maximize student engagement. | | |
| Level: | Upper Elementary, Middle, High, AP/IB, College, Supervisor/Leadership | | Strand: Integrated STEM Education |
| Content: | General | Sci. & Eng. Practice: | Obtaining, Evaluating, and Communicating Information |
| | | Crosscutting Concept: | NA |
| Title: | Chain of Food | | Room: Grand Salon B |
| Presenter(s): | Shiona Drummer | | |
| Description: | Everyone along the Farm-to-Table Continuum plays a major role in keeping our food safe. If a link in this continuum is broken, our nation's food supply can be threatened. | | |
| Level: | Middle | Strand: | GPS Within the Framework |
| Content: | Biology/Life Science | Sci. & Eng. Practice: | Asking Questions & Defining Problems |
| | | Crosscutting Concept: | NA |
| Title: | Supporting newly hired science teachers: What the research says | | Room: Magnolia A |
| Presenter(s): | Julie A. Luft | | |
| Description: | A review of research reveals what areas are important in supporting newly hired science teachers. | | |
| Level: | Middle, High, College, Supervisor/Leadership, Pre-service/Early Career Teachers | | Strand: Preservice & Early Career Teachers |
| Content: | General | Sci. & Eng. Practice: | NA |
| | | Crosscutting Concept: | NA |
| Title: | Go Virtual! Field Trips for the Millennial Learner | | Room: Magnolia B |
| Presenter(s): | Bejanae Kareem, Tommy Clay | | |
| Description: | Limited funding for field trips? Go Virtual! This session explores web-based technologies such as Skype, Google Earth, 360Cities and Discovery Education to provide virtual field trips. | | |
| Level: | Lower Elementary, Upper Elementary, Middle, High, Pre-service/Early Career Teachers | | Strand: Integrated STEM Education |
| Content: | General | Sci. & Eng. Practice: | Obtaining, Evaluating, and Communicating Information |
| | | Crosscutting Concept: | NA |

Science for All: Putting the Pieces Together

Featured Session



State of Education in Georgia, 9:00-9:50 Exhibit Hall B

- **Presenter:** Richard Woods, Georgia State School Superintendent
- **Description:** Mr. Richard Woods, Georgia's new state school superintendent, will discuss his outlook for education policy in 2015 and beyond. Woods was born in Pensacola, Florida and while growing up in a military family, lived in California, Hawaii, and Virginia before moving to Georgia. He graduated from Fitzgerald High School, and went on to receive a Bachelor's Degree from Kennesaw State University and a Master's Degree from Valdosta State University. Woods has over 22 years of pre-k through 12th grade experience in public education. Woods was a high school teacher for 14 years, serving as department chair and teacher mentor. During his tenure, he was also selected as Teacher of the Year. For eight years, Woods served in various administrative roles such as assistant principal, principal, curriculum director, testing coordinator, pre-k director, and alternative school director. Woods also brings a business background to the superintendent's position, having been a purchasing agent for a national/multi-national laser company and a former small business owner.
- **Level:** Lower Elementary, Upper Elementary, Middle, High, AP/IB, College, Administrators, Supervisor/Leadership, Pre-service/Early Career Teachers
- **Content:** Advocacy & Leadership

Concurrent Session: Thursday 9:00-10:50

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|----------------------|---|----------------------------------|--|------------------------------|---|
| Title: | <i>Destination Imagination - Innovation STEMs from Creativity</i> | | | Room: | 308 |
| Presenter(s): | Annette Rogers, LaTrina Howell | | | Vendor: | Destination Imagination Georgia |
| Description: | 2014-15 Destination Imagination Program Materials will be provided to participants for use and dissemination in their school, organization, or district. | | | | |
| Level: | Lower Elementary, Upper Elementary, Middle, High, AP/IB, College, Pre-service/Early Career Teachers | Strand: | Integrated STEM Education | | |
| Content: | General, Physics, Technology and Engineering | Sci. & Eng. Practice: | Obtaining, Evaluating, and Communicating Information | Crosscutting Concept: | NA |
| Title: | <i>Teaching High School Epidemiology</i> | | | Room: | 310 |
| Presenter(s): | Evern Williams, Pioneer | | | | |
| Description: | Excite your students with cross curriculum integration, rigor and relevance, real world application, biostatistics, engineering, and biomedical research by teaching high school Epidemiology. This session will include: hands on labs, cross cutting concepts, engineering modules, problem based learning techniques, and differentiated instruction strategies. | | | | |
| Level: | High, AP/IB, College, Supervisor/Leadership | Strand: | Integrated STEM Education | | |
| Content: | Biology/Life Science | Sci. & Eng. Practice: | Constructing Explanations and Designing Solutions | Crosscutting Concept: | Cause and Effect: Mechanisms and Explanations |

Science for All: Putting the Pieces Together

Featured Session



Picture Perfect Science, Grades K-2, 9:00-10:50 Ballroom B

- **Presenters:** Karen Ansberry & Emily Morgan, NSTA Press Authors
- **Description:** Authors of NSTA's award-winning Picture-Perfect Science series will share K-2 lessons that integrate science and reading through the use of engaging picture books. Ansberry co-authored *Picture-Perfect Science Lessons* to give science teachers the tools they need to help students learn to read and read to learn. As a former classroom teacher, she understands teachers are crunched for time and need high-interest, ready-to-use lessons that integrate literature, reading strategies, and science. Morgan feels that tapping into students' fascination with science will give them the motivation to read about it. She believes every teacher is a reading teacher and enjoys writing lessons that use engaging picture books and integrate reading strategies.
- **Level:** Lower Elementary
- **Strand:** Integrating Science Within the CCGPS
- **Content:** General
- **Science & Engineering Practice:** Multiple
- **Crosscutting Concept:** Multiple

Featured Session



Integrating Science & Engineering, 9:00-10:50 Ballroom C

- **Presenters:** Ellen Granger, Ph.D., & Todd Bevis, Florida State University
- **Description:** Integrating engineering within the science classroom is a new challenge for science instructors. This session is an introduction to integrated science and engineering lessons. Dr. Granger is the Director of the Office of Science Teaching Activities in the College of Arts and Sciences at Florida State University and the Co-Director of the FSU-Teach program for preparing secondary science and mathematics teachers. Bevis is the Director of Teacher Professional Development for the Office of Science Teaching Activities in the College of Arts and Sciences at Florida State University.
- **Level:** Middle, High, AP/IB, Supervisor/Leadership
- **Strand:** GPS Within the Framework
- **Content:** Engineering
- **Science & Engineering Practice:** Developing and Using Models
- **Crosscutting Concept:** Cause and Effect: Mechanisms and Explanations

Science for All: Putting the Pieces Together

Concurrent Session: Thursday 9:00-10:50

| | | | | | |
|----------------------|---|----------------------------------|---|------------------------------|---|
| Title: | <i>Eco-Tech: Tools and Resources for Integrating Technology in Outdoor Learning</i> | | | Room: | Magnolia CD |
| Presenter(s): | Captain Planet Foundation | | | Organization: | Captain Planet Foundation |
| Description: | Explore exciting opportunities at the intersection of the “Maker” movement, STEM, and Environmental Science. Discover how enthusiasm for technology can be channeled into standards-based learning. | | | | |
| Level: | Lower Elementary, Upper Elementary, Middle, High, AP/IB | | | Strand: | Integrated STEM Education |
| Content: | Engineering | Sci. & Eng. Practice: | Using Mathematical and Computational Thinking | Crosscutting Concept: | Cause and Effect: Mechanisms and Explanations |
| Title: | <i>NOAA Fisheries Research in the Engineering Classroom</i> | | | Room: | Exhibit Hall A |
| Presenter(s): | Janelle Wilson | | | | |
| Description: | Compete in an engineering design challenge, and learn how NOAA’s Teacher at Sea experience aboard the Henry Bigelow led to new understanding of engineering practices. | | | | |
| Level: | Middle, High | | | Strand: | Integrated STEM Education |
| Content: | Engineering | Sci. & Eng. Practice: | Developing and Using Models | Crosscutting Concept: | Structure and Function |

Concurrent Session: Thursday 10:00-10:50

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|----------------------|---|----------------------------------|---|------------------------------|---|
| Title: | <i>STEM—Early Childhood Style!</i> | | | Room: | 303 |
| Presenter(s): | Terri George | | | Vendor: | Carolina Curriculum |
| Description: | Come experience STEM investigations, designs, and products related to Ga. weather standards. | | | | |
| Level: | Lower Elementary | | | Strand: | Integrated STEM Education |
| Content: | Earth Science | Sci. & Eng. Practice: | Planning & Carrying Out Investigations | Crosscutting Concept: | Cause and Effect: Mechanisms and Explanations |
| Title: | <i>Making the Most of Interactive Notebooks</i> | | | Room: | 306 |
| Presenter(s): | Lynn Larsen | | | | |
| Description: | All teachers love for their students to be organized! Using simple interactive notebooks helps with the organizational skills needed. | | | | |
| Level: | Lower Elementary, Upper Elementary, Middle | | | Strand: | NA |
| Content: | General | Sci. & Eng. Practice: | NA | Crosscutting Concept: | NA |
| Title: | <i>Science and Engineering Practices and STEM come alive in the Middle School Science Classroom</i> | | | Room: | 309 |
| Presenter(s): | Kathy Armstrong & Marilyn Enoch | | | Vendor: | Delta Education/FOSS |
| Description: | Incorporate STEM with the Science & Engineering Practices in your classroom using FOSS Middle School Modules | | | | |
| Level: | Middle, Supervisor/Leadership | | | Strand: | Integrated STEM Education |
| Content: | General | Sci. & Eng. Practice: | Constructing Explanations and Designing Solutions | Crosscutting Concept: | Systems and System Models |

Science for All: Putting the Pieces Together

Concurrent Session: Thursday 10:00-10:50

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|----------------------|--|----------------------------------|--------------------------------------|------------------------------|---------------------------|
| Title: | <i>Post-Secondary Partnerships: Utilizing Resources</i> | | | Room: | 312 |
| Presenter(s): | Kania Greer | | | | |
| Description: | Partnering with Post-secondary schools creates a win-win for everyone. But how do we do it effectively? | | | | |
| Level: | Lower Elementary, Upper Elementary, Middle, High, AP/IB, College, Supervisor/Leadership, Pre-service/Early Career Teachers | Strand: | Integrated STEM Education | | |
| Content: | General | Sci. & Eng. Practice: | NA | Crosscutting Concept: | NA |
| Title: | <i>Models in the Physical Sciences</i> | | | Room: | 313 |
| Presenter(s): | Ann Marie Dubick | | | | |
| Description: | Learn and practice strategies on how to incorporate models with students to promote better understanding of content standards in the physical sciences with LEGOs™, drawings, diagrams, and computer simulations. | | | | |
| Level: | Upper Elementary, Middle, High | Strand: | GPS Within the Framework | | |
| Content: | Physical Science | Sci. & Eng. Practice: | Developing and Using Models | Crosscutting Concept: | Systems and System Models |
| Title: | <i>STEM (STREAM) and Sea Turtles</i> | | | Room: | 324 |
| Presenter(s): | Susan Collins, Caitlin Crews, Jessica Timms, & Jennifer Erhardt | | | | |
| Description: | Despite teachers' best efforts, STEM activities are often abstractions of our world. Leave this presentation with STEM classroom activities based on real world experiences. | | | | |
| Level: | Upper Elementary | Strand: | Integrated STEM Education | | |
| Content: | Environmental Science | Sci. & Eng. Practice: | Asking Questions & Defining Problems | Crosscutting Concept: | NA |
| Title: | <i>Ready, Set, Go STEM</i> | | | Room: | Ballroom A |
| Presenter(s): | Erin Anderson | | | | |
| Description: | Experience an interactive example of a life science STEM activity and receive resources and examples for use in your own classroom. | | | | |
| Level: | Middle | Strand: | Integrated STEM Education | | |
| Content: | Biology/Life Science | Sci. & Eng. Practice: | Developing and Using Models | Crosscutting Concept: | Structure and Function |
| Title: | <i>STEM Teacher Leadership</i> | | | Room: | Ballroom D |
| Presenter(s): | Martha Milam | | | | |
| Description: | Develop your role as a STEM Leader for your school. Take advantage of your own strengths (and weaknesses) to support, train, and encourage other educators to create and improve STEM opportunities. All teachers can serve as informal leaders to develop a thriving STEM culture within your school. | | | | |
| Level: | Lower Elementary, Upper Elementary, Middle, High, Supervisor/Leadership | Strand: | Integrated STEM Education | | |
| Content: | Advocacy & Leadership | Sci. & Eng. Practice: | NA | Crosscutting Concept: | NA |

Science for All: Putting the Pieces Together

Concurrent Session: Thursday 10:00-10:50

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|----------------------|---|----------------------------------|--|--------------------------------------|--|
| Title: | <i>Watershed Conservation Curriculum</i> | | | Room: | Ballroom E |
| Presenter(s): | M Dias & B Ensign with B Cook, G Davis, A Dennis, K Gibson, J Gustin, S Horzewski, K Jackson, C Johnson, D LaVigne, B McClain, M Pedersen, A Pierce, B Schmidt, J Stanhope, R Tumlin, J Wolf | | | | |
| Description: | High school biology/environmental science teachers provide guided-inquiry lessons based on fieldwork and data analysis from monitoring activities in the Etowah and Chattahoochee watersheds. | | | | |
| Level: | High, AP/IB | | Strand: | Integrating Science Within the CCGPS | |
| Content: | Environmental Science | Sci. & Eng. Practice: | Analyzing and Interpreting Data | Crosscutting Concept: | Energy and Matter: Flows, Cycles, and Conservation |
| Title: | <i>Top 10 High-Tech Formative Assessment Strategies for Science</i> | | | Room: | Grand Salon A |
| Presenter(s): | Tom Brown, Mike Eby | | | | |
| Description: | This session will explore the top BYOD tools and apps that can be used to enhance engagement, rekindle curiosity, and monitor comprehension. | | | | |
| Level: | Upper Elementary, Middle, High | | Strand: | Integrated STEM Education | |
| Content: | General | Sci. & Eng. Practice: | Obtaining, Evaluating, and Communicating Information | Crosscutting Concept: | Cause and Effect: Mechanisms and Explanations |
| Title: | <i>Integrated Curriculum: Using Case Studies in Elementary School to Teach Science, Language and Literacy, and Mathematics</i> | | | Room: | Grand Salon B |
| Presenter(s): | Georgia W. Hodges, Peggy McKay, & Alex Turbyfield | | | | |
| Description: | Researchers will share developed case studies that seamlessly align science, Language and Literacy, and Mathematics | | | | |
| Level: | Upper Elementary | | Strand: | Integrated STEM Education | |
| Content: | Biology/Life Science | Sci. & Eng. Practice: | Analyzing and Interpreting Data | Crosscutting Concept: | Cause and Effect: Mechanisms and Explanations |
| Title: | <i>What Am I Really Getting Myself Into: New Teacher Panel</i> | | | Room: | Magnolia A |
| Presenter(s): | Chelsea Sexton, Nicholas Mayhew, and others. | | | | |
| Description: | Bring your questions as this panel first- and second-year teachers share their experiences and advice. | | | | |
| Level: | Pre-service/Early Career Teachers | | Strand: | Preservice & Early Career Teachers | |
| Content: | General | Sci. & Eng. Practice: | NA | Crosscutting Concept: | NA |
| Title: | <i>Engineering Made Easy</i> | | | Room: | Magnolia B |
| Presenter(s): | Bejanae Kareem | | | | |
| Description: | This session will demonstrate the engineering process and characteristics of quality engineering design challenges through a hands-on demonstration and list of resources. | | | | |
| Level: | Lower Elementary, Upper Elementary, Middle, Pre-service/Early Career Teachers | | Strand: | Integrated STEM Education | |
| Content: | Engineering | Sci. & Eng. Practice: | Planning & Carrying Out Investigations | Crosscutting Concept: | Cause and Effect: Mechanisms and Explanations |

Science for All: Putting the Pieces Together

Concurrent Session: Thursday 10:00-10:50

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|----------------------|--|----------------------------------|------------------------------------|---------------------------------|
| Title: | <i>The Model of STEM in Georgia</i> | | Room: | Exhibit Hall B |
| Presenter(s): | Gilda Lyon, Juan Carlos Aguilar | | Agency: | Georgia Department of Education |
| Description: | The Ga DOE will define what a STEM classroom should look like K-12. | | | |
| Level: | Lower Elementary, Upper Elementary, Middle, High, AP/IB, Supervisor/Leadership | | Strand: | Integrated STEM Education |
| Content: | Advocacy & Leadership | Sci. & Eng. Practice: | Engaging in Argument from Evidence | Crosscutting Concept: NA |

General Session



Building Public Understanding of Weather and Climate Science, 11:00-11:50 Exhibit Hall B

- **Presenters:** J. Marshall Sheperd, FAMS, Ph.D., University of Georgia
- **Description:** Dr. Sheperd is a fellow and past president of the American Meteorological Society, as well as a Professor of Geography and a Research Meteorologist at the University of Georgia at Athens. There, he directs the Atmospheric Sciences Program, teaches, and conducts research in the atmospheric sciences, climatology, water cycle processes, and urban climate systems. Dr. Sheperd is a leading international expert in the area of weather, climate, and atmospheric related sciences, and he regularly advises NOAA, NASA, Congress, the White House, the Department of Defense, and officials from foreign countries. Dr. Sheperd hosts *The Weather Channel's* weekly talk show, *Weather Geeks*, and has appeared contributed to multiple television, radio, and print outlets. Dr. Sheperd has BS, MS and PhD degrees in physical meteorology from Florida State University. He was the first African American to earn a PhD from the FSU Department of Meteorology, one of the nation's oldest and most respected. Dr. Sheperd is the author of a forthcoming textbook, *The Urban Climate System*, and he co-authored a children's book on weather and weather instruments.
- **Level:** Lower Elementary, Upper Elementary, Middle, High, AP/IB, College, Pre-service/Early Career Teachers
- **Content:** Earth Science

Science for All: Putting the Pieces Together

Concurrent Session: Thursday 11:00-12:50

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|----------------------|---|----------------------------------|-----------------------------|------------------------------|---------------------------|
| Title: | <i>Integrating the Art of Nanotubes</i> | | | Room: | 310 |
| Presenter(s): | Mariah Buchanan | | | | |
| Description: | Explaining the importance of nanotubes in today's world and showing how it connects to art. | | | | |
| Level: | High | | | Strand: | Integrated STEM Education |
| Content: | Engineering | Sci. & Eng. Practice: | Developing and Using Models | Crosscutting Concept: | Structure and Function |

Concurrent Session: Thursday 12:00-12:50

| | | | | | |
|----------------------|--|----------------------------------|----|------------------------------|-----|
| Title: | <i>Using Descriptive Drawings to improve understanding of biological concepts</i> | | | Room: | 303 |
| Presenter(s): | Alan Gorlin, Katrina Beasley, Lauren Billak | | | | |
| Description: | Biology includes processes that students' find difficult to learn. To better assess their level of understanding, students need opportunities to draw their own descriptive illustrations. | | | | |
| Level: | High | | | Strand: | NA |
| Content: | Biology/Life Science | Sci. & Eng. Practice: | NA | Crosscutting Concept: | NA |

| | | | | | |
|----------------------|---|----------------------------------|---|------------------------------|---------------------------|
| Title: | <i>Camp Invention and Invention Project--Be a Part of Something BIG!</i> | | | Room: | 306 |
| Presenter(s): | Kim Moore | | | | |
| Description: | Inspired by the inductees at the National Inventors Hall of Fame, Camp Invention (K-5) and Invention Project (6-8) provide an opportunity for young inventors to live their dreams. | | | | |
| Level: | Lower Elementary, Upper Elementary, Middle, Supervisor/Leadership | | | Strand: | Integrated STEM Education |
| Content: | General | Sci. & Eng. Practice: | Constructing Explanations and Designing Solutions | Crosscutting Concept: | NA |

| | | | | | |
|----------------------|---|----------------------------------|--|------------------------------|---------------------------|
| Title: | <i>Hands on STEM in Action: Ron's Habitat Adventure</i> | | | Room: | 308 |
| Presenter(s): | Debi Goodman | | | | |
| Description: | This session will preview the ETA Hand2Mind Kit-- Ron's Habitat. It will build an understanding of animals needs and habitats. We will also explore ways to incorporate this STEM kit into our Math and Literacy units. | | | | |
| Level: | Lower Elementary | | | Strand: | Integrated STEM Education |
| Content: | Biology/Life Science | Sci. & Eng. Practice: | Planning & Carrying Out Investigations | Crosscutting Concept: | Structure and Function |

| | | | | | |
|----------------------|---|----------------------------------|--------------------------------------|------------------------------|---|
| Title: | <i>What Causes Change of Motion? A STEMriffic perspective</i> | | | Room: | 309 |
| Presenter(s): | Marilyn Enoch and Kathy Armstrong | | | | |
| Description: | Create conceptual and physical models to explain how something works and look at cause/effect | | | | |
| Level: | Upper Elementary, Supervisor/Leadership | | | Strand: | Integrated STEM Education |
| Content: | Engineering | Sci. & Eng. Practice: | Asking Questions & Defining Problems | Crosscutting Concept: | Cause and Effect: Mechanisms and Explanations |

Science for All: Putting the Pieces Together

| Concurrent Session: Thursday 12:00-12:50 | | | | |
|--|--|----------------------------------|---|--|
| Title: | <i>Where the Wild Things Are - K-3 Arts Integrated STEAM Unit</i> | | | Room: 312 |
| Presenter(s): | Sherri Jarrett, Emilee Black, Tonya Rogers | | | |
| Description: | Turn STEM into STEAM by integrating the arts this delightful elementary unit - connect critical areas with arts practices for an entire pallet of learning. | | | |
| Level: | Lower Elementary | | | Strand: Integrated STEM Education |
| Content: | Engineering | Sci. & Eng. Practice: | Planning & Carrying Out Investigations | Crosscutting Concept: NA |
| Title: | <i>Group Intelligence</i> | | | Room: 313 |
| Presenter(s): | Martha Grover, Ariel Fristoe, Christopher Parsons | | | |
| Description: | a classroom MP3 activity to demonstrate concepts of chemical evolution | | | |
| Level: | High, AP/IB, College | | | Strand: NA |
| Content: | Chemistry | Sci. & Eng. Practice: | NA | Crosscutting Concept: Stability and Change |
| Title: | <i>Guided Inquiry or Just Inquiry? Physics Labs Redesigned</i> | | | Room: 324 |
| Presenter(s): | Kathy Switzer | | | |
| Description: | A presentation of classic physics labs redesigned and reworked to encourage student directed inquiry. | | | |
| Level: | High, AP/IB | | | Strand: NA |
| Content: | Physics | Sci. & Eng. Practice: | Planning & Carrying Out Investigations | Crosscutting Concept: Cause and Effect: Mechanisms and Explanations |
| Title: | <i>STEM Now--How?</i> | | | Room: Ballroom A |
| Presenter(s): | Debbie Stuckey | | | |
| Description: | Learn how to implement STEM effectively in your classroom, and leave with STEM lessons to adapt for your grade level. | | | |
| Level: | Lower Elementary, Upper Elementary | | | Strand: Integrated STEM Education |
| Content: | General | Sci. & Eng. Practice: | Planning & Carrying Out Investigations | Crosscutting Concept: Patterns |
| Title: | <i>Constructing Explanations in Science to build an Academically Challenging Environment (TKES Standard 8)</i> | | | Room: Ballroom C |
| Presenter(s): | Moneak McCrary | | | |
| Description: | Learn how to guide elementary students to construct scientific explanations. We will discuss approaches to support students in talk and writing associated with scientific explanations. | | | |
| Level: | Upper Elementary | | | Strand: GPS Within the Framework |
| Content: | General | Sci. & Eng. Practice: | Constructing Explanations and Designing Solutions | Crosscutting Concept: Cause and Effect: Mechanisms and Explanations |
| Title: | <i>Earth Science Investigation Stations</i> | | | Room: Ballroom D |
| Presenter(s): | Amber Hoke | | | |
| Description: | Use inquiry to provide learning stations for hands-on investigations in elementary Earth Science | | | |
| Level: | Lower Elementary, Upper Elementary | | | Strand: Integrating Science Within the CCGPS |
| Content: | Earth Science | Sci. & Eng. Practice: | Analyzing and Interpreting Data | Crosscutting Concept: Systems and System Models |

Science for All: Putting the Pieces Together

Featured Session



Next Time You See... Nonfiction Books, 12:00-12:50 Ballroom B

- **Presenters:** Emily Morgan, NSTA Press Authors
- **Description:** The author of the "Next Time You See" picture books from NSTA Kids will share books and classroom activities that integrate science and reading...and inspire a sense of wonder about the natural world. Morgan feels that tapping into students' fascination with science will give them the motivation to read about it. Morgan taught seventh grade science at Northridge Local Schools in Dayton, Ohio, and second through fourth grade science lab at Mason City Schools in Mason, Ohio. She has served as a science consultant for the Hamilton County Educational Service Center in Cincinnati, Ohio and as the science leader for the High AIMS Consortium.
- **Level:** Lower Elementary
- **Strand:** Integrating Science Within the CCGPS
- **Content:** General
- **Science & Engineering Practice:** Multiple
- **Crosscutting Concept:** Multiple

Concurrent Session: Thursday 12:00-12:50

| | | | | | |
|----------------------|--|----------------------------------|---|------------------------------|---------------------------|
| Title: | <i>The Engineering and Design Process in Kindergarten? Absolutely!</i> | | | Room: | Ballroom E |
| Presenter(s): | Angie Curtis | | | | |
| Description: | Come experience strategies to incorporate the engineering and design process with kindergarten. | | | | |
| Level: | Lower Elementary | | | Strand: | Integrated STEM Education |
| Content: | Physical Science | Sci. & Eng. Practice: | Constructing Explanations and Designing Solutions | Crosscutting Concept: | Structure and Function |
| Title: | <i>What's the hardest concept for you to teach?: Ideas from an MSP cohort</i> | | | Room: | Grand Salon A |
| Presenter(s): | Kristina Cummings, Amanda Erceg, Lonessa Harris, Holley Stejskal, Allison Walker, Dana Winborne | | | | |
| Description: | Activities, models, and labs to address some of the most challenging K-5 concepts are presented. Participants will receive hand-outs for each one. | | | | |
| Level: | Lower Elementary, Upper Elementary, Pre-service/Early Career Teachers | | | Strand: | GPS Within the Framework |
| Content: | General | Sci. & Eng. Practice: | NA | Crosscutting Concept: | NA |

Science for All: Putting the Pieces Together

| Concurrent Session: Thursday 12:00-12:50 | | | |
|--|---|---|--|
| Title: | <i>Biotechnology in the Classroom: A Study of the Clonality of Bristle Worms in Aquaria using Randomly Amplified Polymorphic DNA (RAPD) Fingerprinting</i> | | Room: Grand Salon B |
| Presenter(s): | Marc Pedersen | | |
| Description: | The presenter will describe an authentic inquiry-based project that utilizes cutting edge biotechnology and science to explore the genetic diversity of a marine polychaete worm. | | |
| Level: | High | Strand: | GPS Within the Framework |
| Content: | Biology/Life Science | Sci. & Eng. Practice: Planning & Carrying Out Investigations | Crosscutting Concept: Patterns |
| Title: | <i>How You Are Evaluated? The State of Teaching Science in an Age of Accountability</i> | | Room: Magnolia A |
| Presenter(s): | George W. Stickel | | |
| Description: | How to be a good science teacher & navigate through accountability? Understand TKES, edTPA, InternKeys, ethics, etc.—all the assessments required of you & new colleagues. | | |
| Level: | Lower Elementary, Upper Elementary, Middle, High, AP/IB, College, Supervisor/Leadership, Pre-service/Early Career Teachers | Strand: | Preservice & Early Career Teachers |
| Content: | Advocacy & Leadership | Sci. & Eng. Practice: Obtaining, Evaluating, and Communicating Information | Crosscutting Concept: Stability and Change |
| Title: | <i>NASA Remote Sensing Tools for Educators</i> | | Room: Magnolia B |
| Presenter(s): | Dr. Lester Morales | | Agency: NASA-Kennedy Space Center EPD |
| Description: | NASA provides Educators with the ability to participate in National and International Earth Systems programs that Utilize Remote Sensing for investigative Research | | |
| Level: | Lower Elementary, Upper Elementary, Middle | Strand: | Integrating Science Within the CCGPS |
| Content: | Earth Science | Sci. & Eng. Practice: Developing and Using Models | Crosscutting Concept: Systems and System Models |
| Title: | <i>Plastic and Recycling Awareness Curriculum</i> | | Room: Magnolia CD |
| Presenter(s): | Carter Ries, Olivia Ries (OMG Founders), Jim Ries President | | Organization: One More Generation |
| Description: | Plastic Pollution is considered one of the largest preventable environmental threats facing us all. Now is the time to teach our next generation how they can be the solution. | | |
| Level: | Lower Elementary, Upper Elementary, Middle | Strand: | Integrated STEM Education |
| Content: | Environmental Science | Sci. & Eng. Practice: Obtaining, Evaluating, and Communicating Information | Crosscutting Concept: Cause and Effect: Mechanisms and Explanations |

| Concurrent Session: Thursday 12:00-1:50 | | | |
|---|--|---|--|
| Title: | <i>Teaching Physical Science through Robotics and Engineering Design</i> | | Room: Exhibit Hall A |
| Presenter(s): | Mike Ryan, Sabrina Grossman, Jayma Koval, Jason Fiorito, Lynn Torrance, Russell Johnson | | |
| Description: | Experience how to use LEGO® robotics to integrate engineering into middle school physical science classes. Engage in inquiry activities and receive access to NSF-developed materials. | | |
| Level: | Middle | Strand: | GPS Within the Framework |
| Content: | Physical Science | Sci. & Eng. Practice: Planning & Carrying Out Investigations | Crosscutting Concept: Systems and System Models |

Science for All: Putting the Pieces Together

| Concurrent Session: Thursday 1:00-1:50 | | | | |
|--|---|----------------------------------|--|---|
| Title: | <i>Getting the Most Out of Middle Schoolers Integrating Science and Math with Data</i> | | | Room: 308 |
| Presenter(s): | Karol Stephens | | | Vendor: Ward's Science/Sargent-Welch |
| Description: | Data is a natural integration point for math and science. Technology tools can increase the rigor and provide meaningful integration opportunities. | | | |
| Level: | Middle | | | Strand: Integrated STEM Education |
| Content: | Physical Science | Sci. & Eng. Practice: | Analyzing and Interpreting Data | Crosscutting Concept: Energy and Matter: Flows, Cycles, and Conservation |
| Title: | <i>Fun Weird Science</i> | | | Room: 309 |
| Presenter(s): | Ronnie Thomas | | | Vendor: Fun Weird Science |
| Description: | Interactive Science engagement demonstration with content explanation | | | |
| Level: | Lower Elementary, Upper Elementary, Middle | | | Strand: GPS Within the Framework |
| Content: | General | Sci. & Eng. Practice: | Developing and Using Models | Crosscutting Concept: Cause and Effect: Mechanisms and Explanations |
| Title: | <i>Science Exposition to the Rescue!</i> | | | Room: 324 |
| Presenter(s): | Rachael Parr, Thomas Layfield, Tiffany Barnett | | | |
| Description: | Come and learn how we turned the Science Fair into a Science Exposition! It was a totally new and exciting way for students to display projects and have fun! | | | |
| Level: | Middle | | | Strand: Integrated STEM Education |
| Content: | General | Sci. & Eng. Practice: | Asking Questions & Defining Problems | Crosscutting Concept: NA |
| Title: | <i>Incorporating Google Classroom into Inquiry-Based Learning</i> | | | Room: Ballroom A |
| Presenter(s): | Christine Jackson and Amanda Palmer | | | |
| Description: | Students use inquiry and technology to discover relationships between shore birds, horseshoe crabs, and humans. | | | |
| Level: | Middle, High | | | Strand: Integrated STEM Education |
| Content: | Biology/Life Science | Sci. & Eng. Practice: | Planning & Carrying Out Investigations | Crosscutting Concept: Cause and Effect: Mechanisms and Explanations |
| Title: | <i>Visualization Activities for Chemistry and Physical Science</i> | | | Room: Ballroom E |
| Presenter(s): | Kelly Ramey | | | |
| Description: | Presentation of a classroom activity to help students understand basic terminology and the correlation between atoms/molecules and what we see in real life. | | | |
| Level: | Middle, High | | | Strand: NA |
| Content: | Chemistry | Sci. & Eng. Practice: | Developing and Using Models | Content: Chemistry |

Science for All: Putting the Pieces Together

Featured Session



Exploring Your Inner Fish, 1:00-1:50 Exhibit Hall B

- **Presenter:** Cary Woodruff
- **Description:** Based on the bestselling book and documentary mini-series, in this lecture we will explore our own human evolutionary history, while learning new and exciting ways to teach and incorporate evolution in the classroom. Cary Woodruff grew up in rural central Virginia, received a BS in Earth sciences with an emphasis in paleontology from Montana State University, and is currently working on an MS in geobiology at MSU under famed paleontologist Dr. Jack Horner. Cary has had several papers published ranging from the first burrowing dinosaur *Oryctodromeus cubicularis* to the majority being dedicated to sauropod dinosaurs and their growth. Cary described and named a new sauropod dinosaur *Rugocaudia cooneyi*, which is the northernmost sauropod found in North America to date.
- **Level:** Elementary, Middle, High, AP/IB
- **Content:** Earth Science, Biology/Life Science

Concurrent Session: Thursday 1:00-1:50

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|----------------------|--|----------------------------------|------------------------------------|------------------------------------|
| Title: | <i>Using Governmental Agencies as a Classroom Resource</i> | | Room: | Grand Salon A |
| Presenter(s): | Susan Collins | | | |
| Description: | The mystery is solved; pennies are saved. You will be given web sites, see samples of free materials, and walkaway with some "freebies!" | | | |
| Level: | Upper Elementary | | Strand: | NA |
| Content: | General | Sci. & Eng. Practice: | NA | Crosscutting Concept: NA |
| Title: | <i>Turning Labs into Arguments</i> | | Room: | Grand Salon B |
| Presenter(s): | Jennifer Barnes | | | |
| Description: | Argumentation & communication are two Science & Engineering Practices in the NGSS. Bring a lab that you can turn into an argument-based inquiry during this session. | | | |
| Level: | High, AP/IB | | Strand: | GPS Within the Framework |
| Content: | General | Sci. & Eng. Practice: | Engaging in Argument from Evidence | Crosscutting Concept: NA |
| Title: | <i>Finding Greatness In Your First Years</i> | | Room: | Magnolia A |
| Presenter(s): | Drew Adams, Rebekah Cordeiro, Rebecca Mortensen | | | |
| Description: | Second-year KSU Noyce teaching fellows host a session to share productive ideas to overcome bad days and make more good ones in your first years. | | | |
| Level: | Pre-service/Early Career Teachers | | Strand: | Preservice & Early Career Teachers |
| Content: | General | Sci. & Eng. Practice: | NA | Crosscutting Concept: NA |

Science for All: Putting the Pieces Together

Featured Session



Picture Perfect Science, Grades 3-5, 1:00-2:50 Ballroom B

- **Presenters:** Karen Ansberry & Emily Morgan, NSTA Press Authors
- **Description:** Authors of NSTA's award-winning Picture-Perfect Science series will share 3-5 lessons that integrate science and reading through the use of engaging picture books. Ansberry co-authored *Picture-Perfect Science Lessons* to give science teachers the tools they need to help students learn to read and read to learn. As a former classroom teacher, she understands teachers are crunched for time and need high-interest, ready-to-use lessons that integrate literature, reading strategies, and science. Morgan feels that tapping into students' fascination with science will give them the motivation to read about it. She believes every teacher is a reading teacher and enjoys writing lessons that use engaging picture books and integrate reading strategies.
- **Level:** Upper Elementary
- **Strand:** Integrating Science Within the CCGPS
- **Content:** General
- **Science & Engineering Practice:** Multiple
- **Crosscutting Concept:** Multiple

Featured Session



Developing and Using Models in the Science Classroom, 1:00-2:50 Ballroom C

- **Presenters:** Todd Bevis & Ellen Granger, Ph.D., Florida State University
- **Description:** Explore and compare the development of scientific and mathematical models as tools for learning core disciplinary content in science classrooms. Bevis is the Director of Teacher Professional Development for the Office of Science Teaching Activities in the College of Arts and Sciences at Florida State University. Dr. Granger is the Director of the Office of Science Teaching Activities in the College of Arts and Sciences at Florida State University and the Co-Director of the FSU-Teach program for preparing secondary science and mathematics teachers. **Level:** Middle, High, AP/IB, Supervisor/Leadership
- **Strand:** GPS Within the Framework
- **Content:** Engineering
- **Science & Engineering Practice:** Developing and Using Models
- **Crosscutting Concept:** Systems and System Models

Science for All: Putting the Pieces Together

Concurrent Session: Thursday 1:00-2:50

| | | | | | |
|----------------------|---|----------------------------------|--|------------------------------|--------------------------------------|
| Title: | <i>Integrating Literacy Strategies Into Middle School Life Science</i> | | | Room: | 303 |
| Presenter(s): | Terri George | | | Vendor: | Carolina Curriculum |
| Description: | Come experience literacy MS strategies with investigations of the black worm! | | | | |
| Level: | Middle | | | Strand: | Integrating Science Within the CCGPS |
| Content: | Biology/Life Science | Sci. & Eng. Practice: | Planning & Carrying Out Investigations | Crosscutting Concept: | Scale, Proportion, and Quantity |
| Title: | <i>Getting Started with STEM in the Elementary Classroom</i> | | | Room: | 306 |
| Presenter(s): | Colleen Cauffiel | | | | |
| Description: | Teachers will learn how to integrate math and science concepts at the elementary level. | | | | |
| Level: | Lower Elementary, Upper Elementary | | | Strand: | Integrated STEM Education |
| Content: | General | Sci. & Eng. Practice: | Planning & Carrying Out Investigations | Crosscutting Concept: | NA |
| Title: | <i>Making Sense of Sensors: A Hands-On Exploration</i> | | | Room: | 310 |
| Presenter(s): | Carrie Beth Rykowski | | | | |
| Description: | Have you ever turned a shoe box into a space rover? Come learn how you can easily incorporate mechanical engineering and nanotechnology in the classroom with cool STEAM lessons for Earth Science. | | | | |
| Level: | Middle | | | Strand: | Integrated STEM Education |
| Content: | Earth Science | Sci. & Eng. Practice: | NA | Crosscutting Concept: | Patterns |
| Title: | <i>A Taste of Dragons</i> | | | Room: | 312 |
| Presenter(s): | Marlee Tierce | | | | |
| Description: | Children come to school filled with curiosity. Their imaginations color everything. A goal for teachers is to keep that curiosity alive and foster it-A Thematic Unit based on Dragons. | | | | |
| Level: | Lower Elementary, Upper Elementary | | | Strand: | NA |
| Content: | General | Sci. & Eng. Practice: | Asking Questions & Defining Problems | Crosscutting Concept: | Structure and Function |
| Title: | <i>Viewing the Invisible</i> | | | Room: | 313 |
| Presenter(s): | Ann Robinson, Sharon Kirby, Dave Todd | | | | |
| Description: | Participants will discover a cost-effective method of introducing static electricity. A series of experiments will produce a "hair raising" experience and reveal static electricity phenomenon. | | | | |
| Level: | Upper Elementary, Middle, High | | | Strand: | Integrated STEM Education |
| Content: | Physical Science | Sci. & Eng. Practice: | Planning & Carrying Out Investigations | Crosscutting Concept: | Systems and System Models |
| Title: | <i>Moving Full STEAM Ahead!</i> | | | Room: | Magnolia B |
| Presenter(s): | Bejanae Kareem, Shermaine Perry, Dharma Stevens | | | Organization: | Georgia STEAM Alliance Network |
| Description: | Curious about STEAM Education? Interested in learning STEAM best practices? This session will focus on the integration of STEAM across the curriculum. Attendees will garner strategies through small group collaboratives. | | | | |
| Level: | Lower Elementary, Upper Elementary, Middle, High, Administrators, Pre-service/Early Career Teachers | | | Strand: | Integrated STEM Education |
| Content: | General | Sci. & Eng. Practice: | NA | Crosscutting Concept: | NA |

Science for All: Putting the Pieces Together

Concurrent Session: Thursday 1:00-2:50

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|----------------------|--|----------------------------------|--|---|
| Title: | <i>Citizen Science Sampler</i> | | Room: | Magnolia CD |
| Presenter(s): | Donna Barrett and Karan Wood | | Organization: | Captain Planet Foundation |
| Description: | Join Captain Planet Foundation and Metro RESA to explore Citizen Science! Engage students in field investigations and data collection shared with scientists doing exciting, authentic research. | | | |
| Level: | Upper Elementary, Middle, High, AP/IB | | Strand: | Integrated STEM Education |
| Content: | General | Sci. & Eng. Practice: | Planning & Carrying Out Investigations | Crosscutting Concept: Stability and Change |

Concurrent Session: Thursday 2:00-2:50

| | | | | |
|----------------------|---|----------------------------------|------------------------------------|---|
| Title: | <i>Yes They Can! Elementary Students Can Do Data!</i> | | Room: | 308 |
| Presenter(s): | Karol Stephens | | Vendor: | Ward's Science/Sargent-Welch |
| Description: | Elementary students can collect, use, and interpret data to better understand math and science. It's all about making it relevant, using available technology, and providing a purpose. | | | |
| Level: | Upper Elementary | | Strand: | Integrated STEM Education |
| Content: | General | Sci. & Eng. Practice: | Analyzing and Interpreting Data | Crosscutting Concept: Energy and Matter: Flows, Cycles, and Conservation |
| Title: | <i>Utilizing the NSTA Learning Center for Professional Development</i> | | Room: | 309 |
| Presenter(s): | Donna Governor | | Organization: | National Science Teachers Association |
| Description: | The NSTA Learning Center is online professional development portal to help you address your professional needs. Use the nearly 12,000 online resources (most free) to help meet your individual professional development needs. | | | |
| Level: | Lower Elementary, Upper Elementary, Middle, High, AP/IB, College, Supervisor/Leadership, Pre-service/Early Career Teachers | | Strand: | NA |
| Content: | General | Sci. & Eng. Practice: | NA | Crosscutting Concept: NA |
| Title: | <i>STEM is Literacy: Using Evidence from Collaborative Conversations to Construct a Response</i> | | Room: | 324 |
| Presenter(s): | Monia Grace, Jessica Holden, Jen Johnston, Lesley Grimes | | | |
| Description: | This session will equip teachers with literacy routines that promote critical thinking, questioning, and problem-solving, so students have a deeper understanding of science concepts. | | | |
| Level: | Middle | | Strand: | Integrating Science Within the CCGPS |
| Content: | Earth Science | Sci. & Eng. Practice: | Engaging in Argument from Evidence | Crosscutting Concept: Cause and Effect: Mechanisms and Explanations |
| Title: | <i>Science and Math Nights- Using STEM</i> | | Room: | Ballroom A |
| Presenter(s): | Susan Collins, Anita Vanbrackle, Morgan Gordon, Amie Sorrow, Shay Laughton, & Karen Woodleif | | | |
| Description: | Have you ever wanted to get parents involved in your students' school activities? See how hands-on STEM activities get parents included in their child's education. | | | |
| Level: | Lower Elementary, Upper Elementary | | Strand: | Integrated STEM Education |
| Content: | General | Sci. & Eng. Practice: | NA | Crosscutting Concept: NA |

Science for All: Putting the Pieces Together

| Concurrent Session: Thursday 2:00-2:50 | | | | | |
|--|---|----------------------------------|--|------------------------------|------------------------------------|
| Title: | <i>The Georgia Vision Project: A Vision for Public Education</i> | | | Room: | Ballroom D |
| Presenter(s): | Stanley DeJarnett | | | Organization: | A Vision for Public Education |
| Description: | 0 | | | | |
| Level: | Lower Elementary, Upper Elementary, Middle, High, AP/IB, College, Administrators, Supervisor/Leadership, Pre-service/Early Career Teachers | | | Strand: | NA |
| Content: | Advocacy & Leadership | Sci. & Eng. Practice: | NA | Crosscutting Concept: | NA |
| Title: | <i>Fully Integrated Problem and Place-Based Projects</i> | | | Room: | Ballroom E |
| Presenter(s): | Bonnie Pratt and Nancy Cobb | | | | |
| Description: | An overview of how our STEM Cohort team integrates math and science with a "workshop" session to develop P3BL's | | | | |
| Level: | High | | | Strand: | Integrated STEM Education |
| Content: | General | Sci. & Eng. Practice: | Planning & Carrying Out Investigations | Crosscutting Concept: | Scale, Proportion, and Quantity |
| Title: | <i>Safety and Professional Responsibility for Science Teachers</i> | | | Room: | Grand Salon A |
| Presenter(s): | Nick Zomer | | | | |
| Description: | This session will foster collaboration and dialogue regarding best practices to ensure student safety during science lessons. Topics will include teacher responsibilities and guidelines, student expectations, and legal ramifications. | | | | |
| Level: | Lower Elementary, Upper Elementary, Middle, High, AP/IB, Pre-service/Early Career Teachers | | | Strand: | NA |
| Content: | General | Sci. & Eng. Practice: | NA | Crosscutting Concept: | NA |
| Title: | <i>Show me what you've Learned-Part 2</i> | | | Room: | Grand Salon B |
| Presenter(s): | Sue L Burrell, Barbara Mullis | | | | |
| Description: | Using inexpensive, easy to construct manipulative learning "kits", students are able to demonstrate their knowledge while the teacher, through purposeful questioning, increases depth of knowledge. | | | | |
| Level: | Middle, High | | | Strand: | GPS Within the Framework |
| Content: | Biology/Life Science | Sci. & Eng. Practice: | NA | Crosscutting Concept: | NA |
| Title: | <i>Teach science and stay sane!</i> | | | Room: | Magnolia A |
| Presenter(s): | Louisa McDonald, Alan McGough, Jenna Harvey | | | | |
| Description: | Tame that paper monster! | | | | |
| Level: | Middle, High, Pre-service/Early Career Teachers | | | Strand: | Preservice & Early Career Teachers |
| Content: | General | Sci. & Eng. Practice: | NA | Crosscutting Concept: | NA |
| Title: | <i>Middle School Share-a-thon</i> | | | Room: | Exhibit Hall A |
| Presenter(s): | Nathan Watson | | | | |
| Description: | Middle school teachers are encouraged to bring and share quick activities and ideas. | | | | |
| Level: | Middle | | | Strand: | NA |
| Content: | General | Sci. & Eng. Practice: | NA | Crosscutting Concept: | NA |

Science for All: Putting the Pieces Together

| Concurrent Session: Thursday 3:00-3:50 | | | | |
|--|--|----------------------------------|---|---|
| Title: | <i>CPO Science Wind Turbine with a focus on STEM</i> | | | Room: 303 |
| Presenter(s): | Erik Benton | | | Vendor: CPO Science/School Specialty Science |
| Description: | Apply key science concepts, technology, and math to engineer a wind turbine. | | | |
| Level: | Middle, High | | | Strand: Integrated STEM Education |
| Content: | Engineering | Sci. & Eng. Practice: | Planning & Carrying Out Investigations | Crosscutting Concept: Cause and Effect: Mechanisms and Explanations |
| Title: | <i>There's an App for That!</i> | | | Room: 309 |
| Presenter(s): | Donna Governor | | | |
| Description: | Discover free apps with real-time data students can use to explore earth science concepts. Explore STEM integrated activities using your smart phone in this session. | | | |
| Level: | Upper Elementary, Middle, High | | | Strand: Integrated STEM Education |
| Content: | Earth Science | Sci. & Eng. Practice: | Analyzing and Interpreting Data | Crosscutting Concept: Patterns |
| Title: | <i>Applying the GPS to Stabilize Earth Hazards</i> | | | Room: 312 |
| Presenter(s): | Bill Witherspoon, Pamela J.W. Gore | | | |
| Description: | From the Leaning Tower of Pisa to the LBJ Rocks on Jekyll Island, spice up your lessons with real-world problems caused by Earth phenomena. | | | |
| Level: | Upper Elementary, Middle, High, AP/IB, College, Pre-service/Early Career Teachers | | | Strand: GPS Within the Framework |
| Content: | Earth Science | Sci. & Eng. Practice: | Constructing Explanations and Designing Solutions | Crosscutting Concept: Stability and Change |
| Title: | <i>Secrets in the Garden</i> | | | Room: 324 |
| Presenter(s): | Rachael Parr, Jenny Buley | | | |
| Description: | Engage students in reading, writing, and thinking about science concepts through investigations in a school garden. | | | |
| Level: | Upper Elementary, Middle | | | Strand: Integrating Science Within the CCGPS |
| Content: | General | Sci. & Eng. Practice: | Planning & Carrying Out Investigations | Crosscutting Concept: Energy and Matter: Flows, Cycles, and Conservation |
| Title: | <i>Using pHETs in the Classroom and Writing them Too</i> | | | Room: Ballroom D |
| Presenter(s): | Erica Peddi | | | |
| Description: | Understanding how to use and work through the PhET simulation site and the process of writing an assignment and submitting it for them. | | | |
| Level: | Middle, High, AP/IB | | | Strand: Integrated STEM Education |
| Content: | Chemistry | Sci. & Eng. Practice: | Analyzing and Interpreting Data | Crosscutting Concept: Systems and System Models |
| Title: | <i>Bring STEM into Your Classroom with Datalogging</i> | | | Room: Grand Salon A |
| Presenter(s): | Alan Gorlin, Gaganjot Singh, John Cox, & Linda Stockton | | | |
| Description: | Datalogging allows any student to apply technology in the science classroom. Participate in NGSSS correlated, hands-on lessons and try your hand at digital data collection. | | | |
| Level: | Upper Elementary, Middle, High | | | Strand: Integrated STEM Education |
| Content: | General | Sci. & Eng. Practice: | Planning & Carrying Out Investigations | Crosscutting Concept: Scale, Proportion, and Quantity |

Science for All: Putting the Pieces Together

Concurrent Session: Thursday 3:00-3:50

| | | | | | |
|----------------------|--|----------------------------------|-----------------------------------|------------------------------|----------------|
| Title: | <i>Beak of the Finch - Evolution + Math</i> | | | Room: | Grand Salon B |
| Presenter(s): | Jennifer Barnes | | | | |
| Description: | Continuity & Change - an ironic concept seen within Evolution. Come work through an activity from HHMI Biointeractive that integrates science, math and argumentation. | | | | |
| Level: | AP/IB | Strand: | GPS Within the Framework Patterns | | |
| Content: | Biology/Life Science | Sci. & Eng. Practice: | Analyzing and Interpreting Data | Crosscutting Concept: | |
| Title: | <i>Elementary Share-a-thon</i> | | | Room: | Exhibit Hall A |
| Presenter(s): | Denise Webb | | | | |
| Description: | Elementary school teachers are encouraged to bring and share quick activities and ideas. | | | | |
| Level: | Lower Elementary, Upper Elementary | Strand: | NA | | |
| Content: | General | Sci. & Eng. Practice: | NA | Crosscutting Concept: | NA |

Concurrent Session: Thursday 3:00-4:50

| | | | | | |
|----------------------|--|----------------------------------|--|------------------------------|--|
| Title: | <i>STEM-Sational Science</i> | | | Room: | 306 |
| Presenter(s): | Donita Legoas and Kristina Istre | | | | |
| Description: | With almost 20 years of teaching experience each, the "Science Sisters" will share some of their cheap, easy, and tried-and-true hands-on ideas for teaching science and STEM in your classroom. | | | | |
| Level: | Lower Elementary, Upper Elementary, Middle, Pre-service/Early Career Teachers | Strand: | Integrated STEM Education | | |
| Content: | General | Sci. & Eng. Practice: | Planning & Carrying Out Investigations | Crosscutting Concept: | NA |
| Title: | <i>PINEMAP Southeastern Forest and Climate Change Curriculum</i> | | | Room: | 308 |
| Presenter(s): | Lauren C. Johnson, Janet Forrest Kent | | | | |
| Description: | PINEMAP Southeastern Forest and Climate Change Curriculum; a FREE curriculum for middle and high school. | | | | |
| Level: | Middle, High, AP/IB, College | Strand: | Integrated STEM Education | | |
| Content: | Earth Science | Sci. & Eng. Practice: | Analyzing and Interpreting Data | Crosscutting Concept: | Stability and Change |
| Title: | <i>Mechanochemical Phenomena in Blood: A STEAM Lesson</i> | | | Room: | 310 |
| Presenter(s): | Dr. Renuka Rajasekaran, accompanied by her 5 students: Ashley Johnson, Shailyn Moore, Shaena Carter, Jahmar Jordan, and Myka Lowery | | | | |
| Description: | The mechanochemical phenomena in Blood are learned by modeling in a STEAM integrated chemistry Lesson | | | | |
| Level: | High, AP/IB | Strand: | Integrated STEM Education | | |
| Content: | Engineering | Sci. & Eng. Practice: | Developing and Using Models | Crosscutting Concept: | Cause and Effect: Mechanisms and Explanations |
| Title: | <i>Mechanisms of Solar Energy: Exploring the fundamentals of waves, energy, circuits, and solar cells</i> | | | Room: | 313 |
| Presenter(s): | Tyson Harty Ph.D., Sharmistha Basu-Dutt Ph.D. | | | | |
| Description: | Solar energy will be vital for humanity's future, yet its fundamentals can be confusing to students. Explore hands-on methods to integrate waves, circuits, and energy. | | | | |
| Level: | Middle, High, AP/IB | Strand: | Integrated STEM Education | | |
| Content: | General | Sci. & Eng. Practice: | Planning & Carrying Out Investigations | Crosscutting Concept: | Energy and Matter: Flows, Cycles, and Conservation |

Science for All: Putting the Pieces Together

| Concurrent Session: Thursday 3:00-4:50 | | | | |
|--|---|----------------------------------|---|--|
| Title: | <i>STEM the "Right Way": Building Collaboration with Vital Team Members</i> | | | Room: Ballroom A |
| Presenter(s): | Jessica Holden, Monica Grace, Lesley Grimes, Lisa Lee & Jen Johnston | | | |
| Description: | Identifying and recruiting the right people for your STEM team will foster collaboration across the content areas and ensure program success. | | | |
| Level: | Lower Elementary, Upper Elementary, Middle, High | | Strand: | Integrated STEM Education |
| Content: | General | Sci. & Eng. Practice: | Planning & Carrying Out Investigations | Crosscutting Concept: NA |
| Title: | <i>Using a Technology-Enhanced 5E Learning Cycle to Support Literacy in the Science Classroom</i> | | | Room: Ballroom B |
| Presenter(s): | Adam Shirley, Jeremy Peacock | | | |
| Description: | Technology can both engage student interest and support scientific thinking. At the same time, the 5E learning cycle provides a research-based approach to inquiry-based science teaching. Engage in a model lessons that shows how you can combine these strategies to move your students' learning forward. | | | |
| Level: | Lower Elementary, Upper Elementary, Middle, High, AP/IB | | Strand: | Integrating Science Within the CCGPS |
| Content: | General | Sci. & Eng. Practice: | NA | Crosscutting Concept: NA |
| Title: | <i>Integrating Engineering Standards, Common Core ELA Standards, Common Core Mathematics Standards, and Elementary Science Performance Standards</i> | | | Room: Ballroom C |
| Presenter(s): | Barbara Rascoe | | | |
| Description: | This session will provide methodologies for designing science instruction for elementary teachers that comply with integrating common core, science performance standards, and engineering standards. | | | |
| Level: | Upper Elementary, Middle | | Strand: | GPS Within the Framework |
| Content: | Engineering | Sci. & Eng. Practice: | Constructing Explanations and Designing Solutions | Crosscutting Concept: Cause and Effect: Mechanisms and Explanations |
| Title: | <i>Stuck Like Glue: Integrated STEM challenge</i> | | | Room: Ballroom E |
| Presenter(s): | Patricia Ucciferri | | | |
| Description: | Work through an integrated STEM challenge designed for second grade matter. | | | |
| Level: | Lower Elementary | | Strand: | Integrated STEM Education |
| Content: | Physical Science | Sci. & Eng. Practice: | Planning & Carrying Out Investigations | Crosscutting Concept: NA |
| Title: | <i>Integrate the Basics First! 3 Main Elements for Effective Classroom Management</i> | | | Room: Magnolia A |
| Presenter(s): | Marjorie Bateman M.Ed. | | | |
| Description: | Participants will learn the critical elements to developing a classroom management style that communicates to students observable behaviors that will help them be successful. | | | |
| Level: | Lower Elementary, Upper Elementary, Middle, High, Supervisor/Leadership, Pre-service/Early Career Teachers | | Strand: | Preservice & Early Career Teachers |
| Content: | General | Sci. & Eng. Practice: | NA | Crosscutting Concept: NA |

Science for All: Putting the Pieces Together

Concurrent Session: Thursday 3:00-4:50

| | | | | | |
|----------------------|--|----------------------------------|--|------------------------------|--|
| Title: | Georgia Rocks and Minerals | | | Room: | Magnolia B |
| Presenter(s): | Naomi Thompson, Donna Mullenax | | | Organization: | Stone Mountain Memorial Association |
| Description: | Participate in map activities and rock observation to learn about the regions of Georgia and the rocks, minerals, and sand that can be collected. Takeaway your own samples for classroom use. | | | | |
| Level: | Upper Elementary, Middle, High | | | Strand: | GPS Within the Framework |
| Content: | Earth Science | Sci. & Eng. Practice: | Planning & Carrying Out Investigations | Crosscutting Concept: | Patterns |
| Title: | Learning Gardens: Transforming Your Schoolyard into an Outdoor STEM Lab | | | Room: | Magnolia CD |
| Presenter(s): | Captain Planet Foundation | | | Organization: | Captain Planet Foundation |
| Description: | Explore standards-based activities that turn school gardens into outdoor STEM labs; learn tips for managing students productively outdoors; and discover ways to make gardens sustainable. | | | | |
| Level: | Lower Elementary, Upper Elementary, Middle | | | Strand: | Integrated STEM Education |
| Content: | General | Sci. & Eng. Practice: | Planning & Carrying Out Investigations | Crosscutting Concept: | Energy and Matter: Flows, Cycles, and Conservation |

Featured Session



The Work of Scientists: Why the Questions are as Important as the Answers, 4:00-4:50 Exhibit Hall B

- **Presenter:** Cary Woodruff
- **Description:** How reading, writing, and problem solving lead to effective and engaging science research. As stated in the NGSS, we need methods for importing knowledge of the tactics and strategies of science to those who are not scientists. Join us for this discussion of the nature of science. Cary Woodruff grew up in rural central Virginia, received a BS in Earth sciences with an emphasis in paleontology from Montana State University, and is currently working on an MS in geobiology at MSU under famed paleontologist Dr. Jack Horner. Cary has had several papers published ranging from the first burrowing dinosaur *Oryctodromeus cubicularis* to the majority being dedicated to sauropod dinosaurs and their growth. Cary described and named a new sauropod dinosaur *Rugocaudia cooneyi*, which is the northernmost sauropod found in North America to date.
- **Level:** Elementary, Middle, High, AP/IB
- **Content:** Earth Science

Science for All: Putting the Pieces Together

| Concurrent Session: Thursday 4:00-4:50 | | | | |
|--|--|----------------------------------|--|---|
| Title: | <i>Project-Based Inquiry Learning (PBIL): Science Teaching and Learning for the 21st Century</i> | | | Room: 303 |
| Presenter(s): | Sabrina Grossman | | | |
| Description: | Learn how to incorporate Project-Based Inquiry Learning and critical thinking skills in your classroom through participation in online professional development through the Georgia STEM Incubator | | | |
| Level: | Upper Elementary, Middle, High, AP/IB, Supervisor/Leadership, Pre-service/Early Career Teachers | Strand: | Integrated STEM Education | |
| Content: | General | Sci. & Eng. Practice: | Planning & Carrying Out Investigations | Crosscutting Concept: Systems and System Models |
| Title: | <i>Activities for High School Biology- POGIL</i> | | | Room: 309 |
| Presenter(s): | Denise Lester | | | |
| Description: | Process Oriented Guided Inquiry Learning is a group-learning, researched based instructional strategy. | | | |
| Level: | High | Strand: | GPS Within the Framework | |
| Content: | Biology/Life Science | Sci. & Eng. Practice: | Obtaining, Evaluating, and Communicating Information | Crosscutting Concept: Structure and Function |
| Title: | <i>Vertical Teaming: Using NGSS to Give Students Tools for Success in Advanced Secondary STEM Classes</i> | | | Room: 312 |
| Presenter(s): | Rabieh Jamal Hafza | | | |
| Description: | This session will focus on the implementation of the NGSS physical science core ideas as students progress from elementary through high school, focusing on diversity. | | | |
| Level: | Lower Elementary, Upper Elementary, Middle, High, AP/IB | Strand: | Integrated STEM Education | |
| Content: | Physics | Sci. & Eng. Practice: | Using Mathematical and Computational Thinking | Crosscutting Concept: Patterns |
| Title: | <i>This is not your mother's environmental science class.</i> | | | Room: 324 |
| Presenter(s): | Claudia Hagan | | | |
| Description: | This isn't your mother's environmental science course. Wait. She didn't have one. You probably didn't either. Tips and Tricks to teach today's environmental science class. | | | |
| Level: | High | Strand: | GPS Within the Framework | |
| Content: | Environmental Science | Sci. & Eng. Practice: | Analyzing and Interpreting Data | Crosscutting Concept: Energy and Matter: Flows, Cycles, and Conservation |
| Title: | <i>How to Flip Your Science Classroom</i> | | | Room: Ballroom D |
| Presenter(s): | Michele Langhans | | | |
| Description: | Do you want to flip your classroom, but have no idea how to start? Then my session will help you by providing you a list of tools that I use to flip my class. | | | |
| Level: | Middle | Strand: | NA | |
| Content: | Physical Science | Sci. & Eng. Practice: | NA | Crosscutting Concept: NA |

Science for All: Putting the Pieces Together

Concurrent Session: Thursday 4:00-4:50

| | | | | |
|----------------------|---|----------------------------------|--------------------------------------|--|
| Title: | <i>Surviving Science Fair</i> | | Room: | Grand Salon A |
| Presenter(s): | Nick Zomer | | | |
| Description: | Simple tips for teachers to make the Science Fair a more rewarding and less stressful experience. | | | |
| Level: | Upper Elementary, Middle | | Strand: | Integrated STEM Education |
| Content: | General | Sci. & Eng. Practice: | Asking Questions & Defining Problems | Crosscutting Concept: Cause and Effect: Mechanisms and Explanations |
| Title: | <i>Interactive Notebooks: How to get ALL students to succeed</i> | | Room: | Grand Salon B |
| Presenter(s): | Tanya Flynn, AnnMarie Alford | | | |
| Description: | Using notebooks to enhance mastery along the Science Standards | | | |
| Level: | Middle, High, Supervisor/Leadership, Pre-service/Early Career Teachers | | Strand: | GPS Within the Framework |
| Content: | Biology/Life Science | Sci. & Eng. Practice: | Analyzing and Interpreting Data | Crosscutting Concept: NA |
| Title: | <i>High School Share-a-thon</i> | | Room: | Exhibit Hall A |
| Presenter(s): | Jennifer Barnes | | | |
| Description: | High school teachers are encouraged to bring and share quick activities and ideas. | | | |
| Level: | High, AP/IB | | Strand: | NA |
| Content: | General | Sci. & Eng. Practice: | NA | Crosscutting Concept: NA |

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Science for All: Putting the Pieces Together

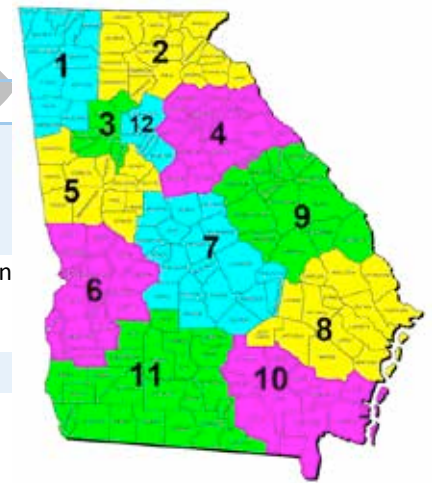


District Meet & Greet Social

- This is a great, informal opportunity to meet your District Director, network with others from your district, and enjoy light hors d'oeuvres.
- Thursday, 5:00 pm In Registration Area

GSTA Districts & District Directors

| District | School Districts | Director |
|----------|---|-------------------|
| 1 | Bartow, Bremen City, Calhoun City, Cartersville City, Catoosa, Chattooga, Chickamauga City, Dade, Dalton City, Floyd, Gordon, Haralson, Murray, Paulding, Polk, Rome City, Trion City, Walker, and Whitfield | Erin Anderson |
| 2 | Banks, Cherokee, Dawson, Fannin, Forsyth, Franklin, Gainesville City, Gilmer, Hall, Habersham, Hart, Lumpkin, Pickens, Rabun, Stephens, Towns, Union, and White | Dr. Karen Henman |
| 3 | Atlanta City, Clayton, Cobb, Douglas, Fulton, and Marietta City | Tonya Pugh |
| 4 | Barrow, Clarke, Commerce City, Elbert, Greene, Jackson, Jasper, Jefferson City, Lincoln, Madison, Morgan, Oconee, Oglethorpe, Putnam, Social Circle City, Taliaferro, Walton, and Wilkes | Dr. Amy Peacock |
| 5 | Butts, Carroll, Carrollton City, Coweta, Fayette, Heard, Henry, Lamar, Meriwether, Pike, Spalding, Thomaston-Upson, and Troup | Stephanie Miles |
| 6 | Chattahoochee, Clay, Harris, Macon, Marion, Muscogee, Quitman, Randolph, Schley, Stewart, Sumter, Talbot, Taylor, and Webster | Moneak McCrary |
| 7 | Baldwin, Bibb, Bleckley, Crawford, Dodge, Dooly, Dublin City, Houston, Jones, Laurens, Monroe, Montgomery, Peach, Pulaski, Telfair, Treutlen, Twiggs, Wheeler, Wilcox, and Wilkinson | Latrina Howell |
| 8 | Appling, Bryan, Bulloch, Candler, Chatham, Effingham, Evans, Jeff Davis, Liberty, Long, McIntosh, Tattnall, Toombs, Vidalia City, and Wayne | Dr. Heather Scott |
| 9 | Burke, Columbia, Emanuel, Glascock, Hancock, Jefferson, Jenkins, Johnson, McDuffie, Richmond, Screven, Warren, and Washington | Donita Legoas |
| 10 | Atkinson, Bacon, Brantley, Camden, Charlton, Clinch, Coffee, Glynn, Pierce, and Ware | Marty Howard |
| 11 | Baker, Ben Hill, Berrien, Brooks, Calhoun, Colquitt, Cook, Crisp, Decatur, Dougherty, Early, Echols, Grady, Irwin, Lanier, Lee, Lowndes, Miller, Mitchell, Pelham City, Terrell, Thomas, Thomasville City, Tift, Turner, Seminole, Valdosta City, and Worth | Michelle Bergozza |
| 12 | Buford City, Decatur City, DeKalb, Gwinnett, Newton, and Rockdale | Joey Nunn |



Science for All: Putting the Pieces Together



Conference Sessions - Friday

Session Feedback Surveys - Friday

- Please provide feedback on each session you attend today by following the URL or QR code to access the online feedback form.
- ???add URL???

| Concurrent Session: Friday 8:00-8:50 | | | |
|--------------------------------------|---|---|--|
| Title: | <i>Chemistry and the Atom: Atom Building and the Periodic Table</i> | | Room: 303 |
| Presenter(s): | Erik Benton | | Vendor: CPO Science/School Specialty Science |
| Description: | Our understanding of matter is so abstract that students have a hard time making sense of these fascinating concepts. | | |
| Level: | Middle, High | | Strand: Integrated STEM Education |
| Content: | Physical Science | Sci. & Eng. Practice: Developing and Using Models | Crosscutting Concept: Structure and Function |
| Title: | <i>Life jackets, density, & STEM</i> | | Room: 306 |
| Presenter(s): | Donna Barrett | | |
| Description: | In this STEM activity, you will design life jackets for a toy soldier; experience an application of density, and the inverse relationship between volume and density. | | |
| Level: | Middle, High | | Strand: Integrated STEM Education |
| Content: | Physical Science | Sci. & Eng. Practice: Using Mathematical and Computational Thinking | Crosscutting Concept: Scale, Proportion, and Quantity |
| Title: | <i>Streamline Your Preparation & Presentation with Student Notebooks</i> | | Room: 308 |
| Presenter(s): | Doug Miller | | |
| Description: | Explore science notebooking strategies and learn how to efficiently prepare your instruction to meet the latest standards. Participants will receive free samples and lesson plans. | | |
| Level: | Middle, High, Supervisor/Leadership, Pre-service/Early Career Teachers | | Strand: GPS Within the Framework |
| Content: | General | Sci. & Eng. Practice: Obtaining, Evaluating, and Communicating Information | Crosscutting Concept: NA |
| Title: | <i>Crosscutting Concepts: What Do They Look Like in an Elementary Classroom?</i> | | Room: 309 |
| Presenter(s): | Kathy Armstrong and Marilyn Enoch | | |
| Description: | Learn how utilizing crosscutting concepts can deepen student's understanding across the science disciplines. Engage in experiences exposing cause and effect, patterns, and structure and function. | | |
| Level: | Lower Elementary, Upper Elementary, Supervisor/Leadership | | Strand: GPS Within the Framework |
| Content: | General | Sci. & Eng. Practice: Constructing Explanations and Designing Solutions | Crosscutting Concept: Patterns |

Science for All: Putting the Pieces Together



The Learning Continues in the Exhibit Hall

- Learn about resources, products, and services from a variety of vendors.
- Stop by the GSTA Store
- Collect 15 stamps in your Exhibit Hall Passport for a chance to win great door prizes. Drop your passport in the door prize box at the Exhibit Hall Registration Desk, by 4:30 PM on Friday.
- Door Prize drawing will be held on Friday at 5:10 pm in the Exhibit Hall. **You must be present to win.**

| Concurrent Session: Friday 8:00-8:50 | | | | |
|--------------------------------------|--|----------------------------------|--|---|
| Title: | <i>Morphing Physics and Engineering</i> | | | Room: 310 |
| Presenter(s): | Sheila Harmony | | | |
| Description: | Traditional 9th grade physics and engineering courses are morphed into what is known today as PhysEng in hopes of accomplishing three major teaching and learning goals. | | | |
| Level: | High | | | Strand: GPS Within the Framework |
| Content: | Physics | Sci. & Eng. Practice: | Constructing Explanations and Designing Solutions | Crosscutting Concept: NA |
| Title: | <i>From Biology to Bio-engineering: Changing Paradigm and Practice</i> | | | Room: 312 |
| Presenter(s): | Joan Graham | | | |
| Description: | The purpose of this session is to share the experience infusing Biology with engineering, math, and technology. | | | |
| Level: | High | | | Strand: Integrated STEM Education |
| Content: | Biology/Life Science | Sci. & Eng. Practice: | Obtaining, Evaluating, and Communicating Information | Crosscutting Concept: Structure and Function |
| Title: | <i>A Paradigm Shift: Redefining Traditional High School Physics Using the Engineering Design Process</i> | | | Room: 313 |
| Presenter(s): | Hyunjin Son, Dr. Jeff Matthews | | | |
| Description: | The journey one high school embarked upon to provide equal access to STEM experiences for their 11th grade physics students emphasizing rigor, relevance, and relationships. | | | |
| Level: | High, Supervisor/Leadership | | | Strand: Integrated STEM Education |
| Content: | Physics | Sci. & Eng. Practice: | Constructing Explanations and Designing Solutions | Crosscutting Concept: NA |
| Title: | <i>Earth Science Sure Fire Winners!</i> | | | Room: 324 |
| Presenter(s): | Stephanie Miles and Brandie Freeman | | | |
| Description: | Walk away will several Earth Science sure fire activities | | | |
| Level: | Middle, High | | | Strand: NA |
| Content: | Earth Science | Sci. & Eng. Practice: | NA | Crosscutting Concept: NA |

Science for All: Putting the Pieces Together

Concurrent Session: Friday 8:00-8:50

| | | | | | |
|----------------------|---|----------------------------------|--|------------------------------|--|
| Title: | <i>ENGAGE, EMPOWER, and EXCEL with Integrated STEM In Your Classroom!</i> | | | Room: | Ballroom A |
| Presenter(s): | Alana Davis | | | | |
| Description: | Many educators might think that you can't integrate your STEM challenges with the other subjects, well you are WRONG! YOU CAN and it's easy! | | | | |
| Level: | Lower Elementary, Upper Elementary, Pre-service/Early Career Teachers | | | Strand: | Integrated STEM Education |
| Content: | General | Sci. & Eng. Practice: | Planning & Carrying Out Investigations | Crosscutting Concept: | NA |
| Title: | <i>Literacy in Science</i> | | | Room: | Ballroom B |
| Presenter(s): | Whitney Patterson, Jane Smith, Ashli Jay | | | | |
| Description: | Printable literacy strategies | | | | |
| Level: | Upper Elementary, Middle | | | Strand: | Integrating Science Within the CCGPS |
| Content: | General | Sci. & Eng. Practice: | Obtaining, Evaluating, and Communicating Information | Crosscutting Concept: | Patterns |
| Title: | <i>Teaching Outdoor Science with Children's Literature</i> | | | Room: | Ballroom C |
| Presenter(s): | Steve Rich | | | | |
| Description: | Discover resources from the author of Outdoor Science, My School Yard Garden, & Mrs. Carter's Butterfly Garden. Free seeds. | | | | |
| Level: | Lower Elementary, Upper Elementary, Middle | | | Strand: | GPS Within the Framework |
| Content: | Environmental Science | Sci. & Eng. Practice: | Analyzing and Interpreting Data | Crosscutting Concept: | Energy and Matter: Flows, Cycles, and Conservation |
| Title: | <i>Using apps for student presentations</i> | | | Room: | Ballroom D |
| Presenter(s): | Lisa Henriquez, Erin Wood | | | | |
| Description: | Several apps students can use during presentations | | | | |
| Level: | Lower Elementary, Upper Elementary, Middle | | | Strand: | Integrated STEM Education |
| Content: | General | Sci. & Eng. Practice: | Obtaining, Evaluating, and Communicating Information | Crosscutting Concept: | NA |
| Title: | <i>Flipping the Classroom in Advanced Placement Environmental Science</i> | | | Room: | Ballroom E |
| Presenter(s): | Brandie Freeman | | | | |
| Description: | Take home a year's worth of ready-to-use discussion prompts, reading strategy ideas, and meaningful ways to get your APES students to do their homework! Tips for math in APES will also be provided. | | | | |
| Level: | High, AP/IB | | | Strand: | NA |
| Content: | Environmental Science | Sci. & Eng. Practice: | Obtaining, Evaluating, and Communicating Information | Crosscutting Concept: | Energy and Matter: Flows, Cycles, and Conservation |

Science for All: Putting the Pieces Together

Concurrent Session: Friday 8:00-8:50

| | | | | | |
|----------------------|---|----------------------------------|------------------------------------|------------------------------|---|
| Title: | <i>Let's Talk About Science: Engaging Students in Productive Science Talk</i> | | | Room: | Grand Salon A |
| Presenter(s): | Kenneth Linsley, Jeremy Peacock | | | | |
| Description: | Helping students become scientific thinkers requires that we help them get their science ideas out into the open for reinforcement or revision. Productive, evidence-based discussions in the science classroom allow students to clarify their own thinking and draw on their peer's thinking. This session will demonstrate several "talk moves" that will help you move from basic Q&A sessions to in-depth discussions that support science learning. | | | | |
| Level: | Lower Elementary, Upper Elementary, Middle, High, AP/IB | | | Strand: | GPS Within the Framework |
| Content: | General | Sci. & Eng. Practice: | Engaging in Argument from Evidence | Crosscutting Concept: | Cause and Effect: Mechanisms and Explanations |
| Title: | <i>Notebooking for HS Biology</i> | | | Room: | Grand Salon B |
| Presenter(s): | Sue L Burrell, Barbara Mullis | | | | |
| Description: | Notebooks used for the development and inclusion of visuals and foldables to help students organize, visualize, and make connections with their learning. An excellent tool to incorporate science lite | | | | |
| Level: | High | | | Strand: | GPS Within the Framework |
| Content: | Biology/Life Science | Sci. & Eng. Practice: | NA | Crosscutting Concept: | NA |
| Title: | <i>If Neville can do it, so can you.</i> | | | Room: | Magnolia A |
| Presenter(s): | Claudia Hagan | | | | |
| Description: | In this interactive presentation, teachers will gain resources and strategies to conquer their first year in the science classroom. | | | | |
| Level: | High, Pre-service/Early Career Teachers | | | Strand: | Preservice & Early Career Teachers |
| Content: | General | Sci. & Eng. Practice: | NA | Crosscutting Concept: | NA |
| Title: | <i>Learning Power - Home As A System</i> | | | Room: | Magnolia B |
| Presenter(s): | Cedric Sheffield | | | | |
| Description: | The Home as a system lesson addresses the natural forces of Heat, Air, and Moisture through the lenses of physical science, environmental science, and economics. | | | | |
| Level: | High | | | Strand: | Integrated STEM Education |
| Content: | Physical Science | Sci. & Eng. Practice: | Developing and Using Models | Crosscutting Concept: | Systems and System Models |
| Title: | <i>K-5 NASA Education Resources</i> | | | Room: | Magnolia CD |
| Presenter(s): | Lester Morales | | | | |
| Description: | Learn about NASA's vast resources for K-5 Educators from books, websites, videos, and NASA missions. | | | | |
| Level: | Lower Elementary, Upper Elementary | | | Strand: | Integrated STEM Education |
| Content: | General | Sci. & Eng. Practice: | Developing and Using Models | Crosscutting Concept: | Cause and Effect: Mechanisms and Explanations |

Science for All: Putting the Pieces Together

Concurrent Session: Friday 8:00-8:50

| | | | | |
|----------------------|---|----------------------------------|----------------|---------------------------------|
| Title: | <i>Poster Session from Earth Systems Teacher Quality Workshop</i> | | Room: | Exhibit Hall A |
| Presenter(s): | Judy Cox, Stephanie Miles, Cobb County Teachers | | | |
| Description: | Poster Session from Earth Systems Teacher Quality Workshop | | | |
| Level: | Middle, High, College | | Strand: | NA |
| Content: | Earth Science | Sci. & Eng. Practice: | NA | Crosscutting Concept: NA |

Featured Session



Doughnuts & Dinos: The Scientific Legacy of Jurassic Park, 8:30-9:50 Exhibit Hall B

- **Presenter:** Cary Woodruff
- **Description:** Enjoy complimentary doughnuts while learning about the science behind the blockbuster dinosaur movies. Twenty-two years ago Jurassic Park forever changed our perception of paleontology. This film united a scientific discipline and the public in a way unique to our generation. With the fourth installment of the film to be released this summer, we will explore the science of the series and how teachers can incorporate this film into the classroom to engage and educate students about paleontology. Cary Woodruff grew up in rural central Virginia, received a BS in Earth sciences with an emphasis in paleontology from Montana State University, and is currently working on an MS in geobiology at MSU under famed paleontologist Dr. Jack Horner. Cary has had several papers published ranging from the first burrowing dinosaur *Oryctodromeus cubicularis* to the majority being dedicated to sauropod dinosaurs and their growth. Cary described and named a new sauropod dinosaur *Rugocaudia cooneyi*, which is the northernmost sauropod found in North America to date.
- **Level:** Elementary, Middle, High, AP/IB
- **Content:** Earth Science

Concurrent Session: Friday 9:00-9:50

| | | | | |
|----------------------|--|----------------------------------|---------------------------------|--|
| Title: | <i>STEM In Action-Sidewalk Safety Exploration</i> | | Room: | 308 |
| Presenter(s): | Debi Goodman | | Vendor: | ETA Hand2Mind |
| Description: | This session will preview the ETA Hand2Mind kit-- Sidewalk Safety. We will discover the world of safety and the motion of pushes and pulls with slopes and going uphill. | | | |
| Level: | Lower Elementary | | Strand: | Integrated STEM Education |
| Content: | Physical Science | Sci. & Eng. Practice: | Analyzing and Interpreting Data | Crosscutting Concept: Cause and Effect: Mechanisms and Explanations |

Science for All: Putting the Pieces Together

Concurrent Session: Friday 9:00-9:50

| | | | | | |
|----------------------|---|----------------------------------|--|------------------------------|--------------------------------------|
| Title: | <i>Motion, Engineering, Design and Redesign for the Primary Classroom</i> | | | Room: | 309 |
| Presenter(s): | Marilyn Enoch and Kathy Armstrong | | | Vendor: | Delta Education FOSS |
| Description: | A study in different ways to produce and predict rotational motion while communicating, comparing, predicting and recording data | | | | |
| Level: | Lower Elementary | | | Strand: | Integrated STEM Education |
| Content: | Engineering | Sci. & Eng. Practice: | Planning & Carrying Out Investigations | Crosscutting Concept: | Systems and System Models |
| Title: | <i>"It's not all Black and White! Implementing R.A.C.E. in the Science classroom."</i> | | | Room: | 310 |
| Presenter(s): | Shandreka Gibson, Travis Phelps, Felicia Poole, Daphne Todd. | | | | |
| Description: | Using the R.A.C.E. strategy in our classrooms to help students with critical aspects of writing in science: engaging in a task, understanding a prompt, and transitioning to writing under the CCGPS. | | | | |
| Level: | Middle, High | | | Strand: | Integrating Science Within the CCGPS |
| Content: | General | Sci. & Eng. Practice: | Obtaining, Evaluating, and Communicating Information | Crosscutting Concept: | NA |
| Title: | <i>A layered way to think about science: Using multiple frameworks to represent science concepts</i> | | | Room: | 312 |
| Presenter(s): | Ben Campbell, Ryan Nixon | | | | |
| Description: | Participants in this session will be introduced to and discuss multiple frameworks for reconsidering biology, chemistry, and physics concepts for their teaching. | | | | |
| Level: | Middle, High | | | Strand: | NA |
| Content: | General | Sci. & Eng. Practice: | Constructing Explanations and Designing Solutions | Crosscutting Concept: | NA |
| Title: | <i>AP Chemistry for All</i> | | | Room: | 313 |
| Presenter(s): | Jamie Akin | | | | |
| Description: | Strategies to teach both Chemistry and AP Chemistry so that all students will have an opportunity to do well on the AP exam. | | | | |
| Level: | High, AP/IB | | | Strand: | NA |
| Content: | Chemistry | Sci. & Eng. Practice: | Planning & Carrying Out Investigations | Crosscutting Concept: | NA |
| Title: | <i>Teaching STEM through Literacy for All</i> | | | Room: | Ballroom A |
| Presenter(s): | Maria Thurmond, Beth Feustel | | | | |
| Description: | Science Literacy can be increased by applying the NGSS through project based learning and formative assessment throughout the projects. | | | | |
| Level: | High | | | Strand: | Integrated STEM Education |
| Content: | General | Sci. & Eng. Practice: | Obtaining, Evaluating, and Communicating Information | Crosscutting Concept: | NA |

Science for All: Putting the Pieces Together

Concurrent Session: Friday 9:00-9:50

| | | | | | |
|----------------------|--|----------------------------------|--|------------------------------|--------------------------------------|
| Title: | <i>Got Bones?</i> | | | Room: | Ballroom D |
| Presenter(s): | Sarida Hoy | | | | |
| Description: | Participants will identify a set of "human bones" in this cross-curricular lesson that incorporates science, math, social studies and literacy. This lesson can be implemented/modified for any level. | | | | |
| Level: | Upper Elementary, Middle, High | | | Strand: | Integrating Science Within the CCGPS |
| Content: | Biology/Life Science | Sci. & Eng. Practice: | Asking Questions & Defining Problems | Crosscutting Concept: | Structure and Function |
| Title: | <i>Getting Physical with I-Pads</i> | | | Room: | Ballroom E |
| Presenter(s): | Tracy Robinson | | | | |
| Description: | If you are currently wanting to increase the rigor and relevance through technology via I-Pads, Google classroom and Google drive this is the session for you. | | | | |
| Level: | Middle | | | Strand: | Integrated STEM Education |
| Content: | Physical Science | Sci. & Eng. Practice: | Obtaining, Evaluating, and Communicating Information | Crosscutting Concept: | NA |
| Title: | <i>Mitosis and Meiosis, Let's List It</i> | | | Room: | Grand Salon A |
| Presenter(s): | Paul Barber, Jefferey Hargrove | | | | |
| Description: | A hands on strategy to make mitosis and meiosis tangible | | | | |
| Level: | Upper Elementary, Middle, High | | | Strand: | GPS Within the Framework |
| Content: | Biology/Life Science | Sci. & Eng. Practice: | Developing and Using Models | Crosscutting Concept: | NA |
| Title: | <i>Classroom Redesign Pt. 1: Putting the Framework into Practice in Middle School and High School Life Science</i> | | | Room: | Grand Salon B |
| Presenter(s): | Jennifer Barnes, Chelsea Sexton, Jeremy Peacock, Zoe Evans | | | | |
| Description: | How can you incorporate the science and engineering practices and crosscutting concepts into your life science classroom? See the three-dimensional approach of the Framework in action in a model life science investigation. | | | | |
| Level: | Middle, High, AP/IB | | | Strand: | GPS Within the Framework |
| Content: | Biology/Life Science | Sci. & Eng. Practice: | Multiple | Crosscutting Concept: | Multiple |
| Title: | <i>Survival Guide for New Science Teachers</i> | | | Room: | Magnolia A |
| Presenter(s): | Michelle Bergozza | | | | |
| Description: | Hidden Resources Revealed | | | | |
| Level: | Lower Elementary, Upper Elementary, Pre-service/Early Career Teachers | | | Strand: | Preservice & Early Career Teachers |
| Content: | General | Sci. & Eng. Practice: | NA | Crosscutting Concept: | NA |
| Title: | <i>Shark Trackers: Utilizing STEM to Connect Research and Education</i> | | | Room: | Magnolia CD |
| Presenter(s): | Chantal Audran | | | Organization: | Tybee Island Marine Science Center |
| Description: | An exploration of the latest OCEARCH tracking technology is implemented into learning basic skills and methods of conducting scientific research. | | | | |
| Level: | Upper Elementary, Middle, High | | | Strand: | Integrated STEM Education |
| Content: | Biology/Life Science | Sci. & Eng. Practice: | Analyzing and Interpreting Data | Crosscutting Concept: | Patterns |

Science for All: Putting the Pieces Together

Concurrent Session: Friday 9:00-9:50

| | | | | | |
|----------------------|---|----------------------------------|--|------------------------------|-----------------------------------|
| Title: | <i>Enrich Your STEM Curriculum with Ham Radio I</i> | | | Room: | Exhibit Hall A |
| Presenter(s): | Martha Muir, Chuck Catledge, Jim Stafford, John Kludt, Mike Cohen, Wes Lamboley (all members of the North Fulton Amateur Radio League) | | | Organization: | North Fulton Amateur Radio League |
| Description: | Ham Radio provides a means to vastly increase the STEM curriculum at your school. We'll show you how and why! This session will give attendees hands on exposure to the topics "Electricity is Magnetic!," "Components That Make Radios Work," and "Ham Radio = Science." | | | | |
| Level: | Upper Elementary, Middle, High | | | Strand: | Integrated STEM Education |
| Content: | Engineering | Sci. & Eng. Practice: | Obtaining, Evaluating, and Communicating Information | Crosscutting Concept: | Structure and Function |

Featured Session



Picture Perfect Science, Grades 3-5, 9:00-10:50 Ballroom B

- **Presenters:** Karen Ansberry & Emily Morgan, NSTA Press Authors
- **Description:** Authors of NSTA's award-winning Picture-Perfect Science series will share 3-5 lessons that integrate science and reading through the use of engaging picture books. Ansberry co-authored *Picture-Perfect Science Lessons* to give science teachers the tools they need to help students learn to read and read to learn. As a former classroom teacher, she understands teachers are crunched for time and need high-interest, ready-to-use lessons that integrate literature, reading strategies, and science. Morgan feels that tapping into students' fascination with science will give them the motivation to read about it. She believes every teacher is a reading teacher and enjoys writing lessons that use engaging picture books and integrate reading strategies.
- **Level:** Upper Elementary
- **Strand:** Integrating Science Within the CCGPS
- **Content:** General
- **Science & Engineering Practice:** Multiple
- **Crosscutting Concept:** Multiple

Concurrent Session: Friday 9:00-10:50

| | | | | | |
|----------------------|---|----------------------------------|-----------------------------|------------------------------|--|
| Title: | <i>Focus and Explore Wave Energy and STEM Education K-8</i> | | | Room: | 303 |
| Presenter(s): | Terri George | | | Vendor: | Carolina Curriculum |
| Description: | Come explore alternative energy sources for K-8 STEM. | | | | |
| Level: | Lower Elementary, Upper Elementary, Middle | | | Strand: | Integrated STEM Education |
| Content: | Earth Science | Sci. & Eng. Practice: | Developing and Using Models | Crosscutting Concept: | Energy and Matter: Flows, Cycles, and Conservation |

Science for All: Putting the Pieces Together

| Concurrent Session: Friday 9:00-10:50 | | | |
|---------------------------------------|---|---|---|
| Title: | <i>Building Science Vocabulary via Notebook Foldables®</i> | | Room: 306 |
| Presenter(s): | Nancy Wisker | | Vendor: Dinah-Might Adventures |
| Description: | Time flies in this session on as you create Notebook Foldables® that can help your instruction of, and student retention of, science vocabulary. | | |
| Level: | Upper Elementary, Middle, High, AP/IB | | Strand: GPS Within the Framework |
| Content: | General | Sci. & Eng. Practice: NA | Crosscutting Concept: NA |
| Title: | <i>Lunar and Meteorites Disk Program</i> | | Room: 324 |
| Presenter(s): | Lester Morales | | Agency: NASA-Kennedy Space Center-EPD |
| Description: | Provide students the opportunity to work with Moon and Meteorites rock samples | | |
| Level: | Lower Elementary, Upper Elementary, Middle, High | | Strand: Integrating Science Within the CCGPS |
| Content: | Earth Science | Sci. & Eng. Practice: Analyzing and Interpreting Data | Crosscutting Concept: Patterns |
| Title: | <i>Using Argument-Driven Inquiry to Support Students' Science Proficiency</i> | | Room: Ballroom C |
| Presenter(s): | Jonathon Grooms | | |
| Description: | Teachers and administrators will experience Argument-Driven Inquiry by participating in an investigation that emphasizes the essential practices of science and discipline specific writing skills. | | |
| Level: | High, Supervisor/Leadership | | Strand: GPS Within the Framework |
| Content: | Physical Science | Sci. & Eng. Practice: Engaging in Argument from Evidence | Crosscutting Concept: Energy and Matter: Flows, Cycles, and Conservation |
| Title: | <i>The Centers for Disease Control and Prevention (CDC): The why, what, and how of teaching epidemiology and public health science in middle and high school</i> | | Room: Magnolia B |
| Presenter(s): | Ralph Cordell, Kelly Cordeira | | Agency: Centers for Disease Control and Prevention |
| Description: | CDC will outline the rationale for teaching public health in high school, present NGSS-aligned standards to guide course development, and discuss how to adapt CDC resources for classroom use. | | |
| Level: | Middle, High, AP/IB, College, Supervisor/Leadership, Pre-service/Early Career Teachers | | Strand: Integrated STEM Education |
| Content: | General | Sci. & Eng. Practice: Analyzing and Interpreting Data | Crosscutting Concept: Patterns |



The Learning Continues in the Exhibit Hall

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- Stop by the GSTA Store
- Collect 15 stamps in your Exhibit Hall Passport for a chance to win great door prizes. Drop your passport in the door prize box at the Exhibit Hall Registration Desk, by 4:30 PM on Friday.
- Door Prize drawing will be held on Friday at 5:10 pm in the Exhibit Hall. **You must be present to win.**

Science for All: Putting the Pieces Together

Concurrent Session: Friday 10:00-10:50

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|----------------------|---|----------------------------------|--|------------------------------|---|
| Title: | <i>Science Reimagined: Using Claims, Evidence, and Reasoning to Promote Literacy in Science</i> | | | Room: | 308 |
| Presenter(s): | Melinda Roberson | | | | |
| Description: | Evidence-based argumentation is a cornerstone concept across CC, NGSS, and GPS frameworks. Come explore C-E-R strategies that can boost student literacy and achievement in science. | | | | |
| Level: | Upper Elementary, Middle, High | | | Strand: | Integrating Science Within the CCGPS |
| Content: | General | Sci. & Eng. Practice: | Engaging in Argument from Evidence | Crosscutting Concept: | NA |
| Title: | <i>Building an Electric Motor the STEM way with CPO Science</i> | | | Room: | 309 |
| Presenter(s): | Erik Benton | | | Vendor: | CPO Science/School Specialty Science |
| Description: | Use the highly versatile CPO Science Electric Motor to change variables in a hands-on learning environment. | | | | |
| Level: | Middle, High | | | Strand: | Integrated STEM Education |
| Content: | Physical Science | Sci. & Eng. Practice: | Planning & Carrying Out Investigations | Crosscutting Concept: | Cause and Effect: Mechanisms and Explanations |
| Title: | <i>Futures in Histotechnology and Plastination</i> | | | Room: | 310 |
| Presenter(s): | Shirley Powell, HT(ASCP)HTL, Technical Director | | | Organization: | Histology Curricular Support Laboratory, Mercer University School of Medicine, Pathology Department |
| Description: | Histology is the study of tissue; Pathology is the study of disease. Tissues removed in the hospital Operating Room or clinics, in the doctor's office, or at autopsy have to be examined by a Pathologist grossly and microscopically, in order to make a diagnosis to help the clinicians to treat the patient correctly. Histotechnology is an allied Health Field that is widely overlooked for students looking for a future profession. This presentation will discuss the profession, the requirements to achieve certification, as well as a little background of what happens to specimens that arrive at the histology laboratory. The second part of this presentation will use plastinated specimens to explain plastination, what it is, its use in medical education, veterinary medicine, as well as archiving museum specimens. | | | | |
| Level: | Middle, High, AP/IB | | | Strand: | NA |
| Content: | Biology/Life Science | Sci. & Eng. Practice: | NA | Crosscutting Concept: | NA |
| Title: | <i>Approaches to Attract underrepresented students into STEM career learning pathways</i> | | | Room: | 312 |
| Presenter(s): | Lawrence King | | | | |
| Description: | Review of economic need, examples of successful programs, and suggestions for improvement | | | | |
| Level: | Upper Elementary, Middle, High, AP/IB, Supervisor/Leadership | | | Strand: | Integrated STEM Education |
| Content: | General | Sci. & Eng. Practice: | Engaging in Argument from Evidence | Crosscutting Concept: | NA |

Science for All: Putting the Pieces Together

Concurrent Session: Friday 10:00-10:50

| | | | | | |
|----------------------|---|----------------------------------|---|------------------------------|---|
| Title: | <i>NASA Powers of Ten: Scaling the Universe</i> | | | Room: | 313 |
| Presenter(s): | Tyson Harty | | | | |
| Description: | How big is big? How small is small? Help your students "Scale the Universe" as we investigate the Powers of Ten with free NASA materials. | | | | |
| Level: | Upper Elementary, Middle, High, AP/IB | | | Strand: | Integrating Science Within the CCGPS |
| Content: | General | Sci. & Eng. Practice: | Using Mathematical and Computational Thinking | Crosscutting Concept: | Scale, Proportion, and Quantity |
| Title: | <i>Fostering STEM collaboration and preparedness between high school and elementary school teachers</i> | | | Room: | Ballroom A |
| Presenter(s): | John Murnan, Michelle Barthlow | | | | |
| Description: | Insights from a workshop led by HS teachers for ES teachers that fostered collaboration and communication to increase future student preparedness for HS STEM courses. | | | | |
| Level: | Lower Elementary, Upper Elementary, Middle, High | | | Strand: | GPS Within the Framework |
| Content: | General | Sci. & Eng. Practice: | Engaging in Argument from Evidence | Crosscutting Concept: | Cause and Effect: Mechanisms and Explanations |
| Title: | <i>Robotic Bee and Bugs - Let's Learn About Our Environment!!</i> | | | Room: | Ballroom D |
| Presenter(s): | Joannah Shoushtarian | | | | |
| Description: | Can K-2 learn to program robotic bees? I believe so and I show you how to teach students to love the environment while learning basic logo path programming. | | | | |
| Level: | Lower Elementary | | | Strand: | Integrated STEM Education |
| Content: | Biology/Life Science | Sci. & Eng. Practice: | Developing and Using Models | Crosscutting Concept: | Stability and Change |
| Title: | <i>Using Interactive Science Notebooks in the Gifted Classroom</i> | | | Room: | Ballroom E |
| Presenter(s): | Heather Davison, Denise Finley | | | | |
| Description: | Middle school science teachers will learn how to use ISN in a gifted science classroom as a way for students to demonstrate mastery of the content. | | | | |
| Level: | Middle | | | Strand: | GPS Within the Framework |
| Content: | Physical Science | Sci. & Eng. Practice: | Asking Questions & Defining Problems | Crosscutting Concept: | NA |
| Title: | <i>Explaining Science Mysteries</i> | | | Room: | Grand Salon A |
| Presenter(s): | Kenneth Linsley | | | | |
| Description: | Students often struggle to provide a scientific explanation of the phenomena they experience in their everyday lives. This session will introduce participants to the C-E-R (Claim, Evidence, Reasoning) Framework. This framework will help guide students in writing a quality explanation of scientific phenomena. | | | | |
| Level: | Lower Elementary, Upper Elementary, Middle | | | Strand: | Integrating Science Within the CCGPS |
| Content: | General | Sci. & Eng. Practice: | Engaging in Argument from Evidence | Crosscutting Concept: | NA |

Science for All: Putting the Pieces Together

Concurrent Session: Friday 10:00-10:50

| | | | | |
|----------------------|---|----------------------------------|--|---|
| Title: | <i>Classroom Redesign Pt. 2: Putting the Framework into Practice in Middle School and High School Life Science</i> | | Room: | Grand Salon B |
| Presenter(s): | Jennifer Barnes, Chelsea Sexton, Jeremy Peacock, Zoe Evans | | | |
| Description: | How can you incorporate the science and engineering practices and crosscutting concepts into your life science classroom? Come and translate your favorite biology lab into a student-centered, three-dimensional investigation. | | | |
| Level: | Middle, High, AP/IB | Strand: | GPS Within the Framework | |
| Content: | Biology/Life Science | Sci. & Eng. Practice: | Multiple | Crosscutting Concept: Multiple |
| Title: | <i>The Elephant in the Room</i> | | Room: | Magnolia A |
| Presenter(s): | Sue L Burrell | | | |
| Description: | Everyone knows it's there but no one addresses it...ineffective instruction. Presentation reviews classroom management research, styles, practices, and procedures to enhance instruction. | | | |
| Level: | Middle, High | Strand: | Preservice & Early Career Teachers | |
| Content: | General | Sci. & Eng. Practice: | NA | Crosscutting Concept: NA |
| Title: | <i>CPALMS: Thousands of Free, Vetted Resources</i> | | Room: | Magnolia CD |
| Presenter(s): | Michelle Ferro, Meghan Hauptli, Rabieh Razzouk | | | |
| Description: | Looking for free high-quality resources? CPALMS was built primarily for Florida's educators but transformed to a global resource. Find out what CPALMS can offer you! | | | |
| Level: | Lower Elementary, Upper Elementary, Middle, High | | Strand: | NA |
| Content: | General | Sci. & Eng. Practice: | NA | Crosscutting Concept: NA |
| Title: | <i>Enrich Your STEM Curriculum with Ham Radio II</i> | | Room: | Exhibit Hall A |
| Presenter(s): | Martha Muir, Chuck Catledge, Jim Stafford, John Kludt, Mike Cohen, Wes Lamboley (all members of the North Fulton Amateur Radio League) | | Organization: | North Fulton Amateur Radio League |
| Description: | Ham Radio provides a means to vastly increase the STEM curriculum at your school. We'll show you how and why! This session will give attendees hands on exposure to the topics "On the Air with Ham Radio!" and "Ham Radio is Digital." Computers have not replaced ham radio, they enhance it! | | | |
| Level: | Upper Elementary, Middle, High | | Strand: | Integrated STEM Education |
| Content: | Engineering | Sci. & Eng. Practice: | Obtaining, Evaluating, and Communicating Information | Crosscutting Concept: Structure and Function |

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Science for All: Putting the Pieces Together



Georgia Science Teachers Association Annual Business Meeting, 11:00-11:30 Exhibit Hall B

- **President:** Donna Governor, Ph.D., GSTA President
- **Agenda:**
 - Annual Membership and Financial Reports
 - Introduction of Candidates for GSTA Board of Directors
 - Introduction of featured speaker

General Session



Using Your Teacher Voice, 11:30-12:30 Exhibit Hall B

- **Presenter:** Stephen Pruitt, Ph.D., Achieve, Inc.
- **Description:** Have you ever found yourself or a colleague saying, "It's not my job to set policy, I'm just a teacher." Dr. Pruitt will discuss the importance of putting aside such thoughts and using your specialized professional knowledge and connection to students as a platform to speak up on behalf of those students and their learning. Dr. Pruitt is Achieve's Senior Vice President for Content, Research and Development. He led the development of and is currently working to support the implementation of the *Next Generation Science Standards*. Dr. Pruitt began his career as a high school Chemistry teacher in Georgia, where he taught for 12 years. Dr. Pruitt served as the Program Manager for Science, Director of Academic Standards, Associate Superintendent of Assessment and Accountability, and then Chief of Staff to State School Superintendent Kathy Cox. **Level:** Lower Elementary, Upper Elementary, Middle, High, AP/IB, College, Pre-service/Early Career Teachers
- **Content:** Advocacy & Leadership



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Science for All: Putting the Pieces Together

Concurrent Session: Friday 1:00-1:50

| | | | | | |
|----------------------|--|----------------------------------|--|------------------------------|---|
| Title: | <i>STEM—Early Childhood Style!</i> | | | Room: | 303 |
| Presenter(s): | Terri George | | | Vendor: | Carolina Curriculum |
| Description: | Come experience STEM investigations, designs, and products related to Ga. weather standards. | | | | |
| Level: | Lower Elementary | | | Strand: | Integrated STEM Education |
| Content: | Earth Science | Sci. & Eng. Practice: | Planning & Carrying Out Investigations | Crosscutting Concept: | Cause and Effect: Mechanisms and Explanations |
| Title: | <i>The Envelope Please...Creating Science Projects that Pop!</i> | | | Room: | 306 |
| Presenter(s): | Nancy Wisker | | | Vendor: | Dinah-Might Adventures |
| Description: | How can a simple manila envelope be transformed into a science project that pops? Discover how in this hands-on session and watch the possibilities unFOLD! | | | | |
| Level: | Lower Elementary, Upper Elementary, Middle, High | | | Strand: | NA |
| Content: | General | Sci. & Eng. Practice: | NA | Crosscutting Concept: | NA |
| Title: | <i>Engineering Design with FOSS Next Generation!</i> | | | Room: | 309 |
| Presenter(s): | Marilyn Enoch and Kathy Armstrong | | | Vendor: | Delta Education and FOSS |
| Description: | FOSS Next Generation modules provide students with opportunities to engage in engineering experiences, develop solutions to problems, construct and evaluate models, and use systems thinking. | | | | |
| Level: | Upper Elementary | | | Strand: | GPS Within the Framework |
| Content: | Engineering | Sci. & Eng. Practice: | Planning & Carrying Out Investigations | Crosscutting Concept: | Cause and Effect: Mechanisms and Explanations |
| Title: | <i>Solutions in Chemistry: a GPS Unit Plan</i> | | | Room: | 310 |
| Presenter(s): | Nancy Brim | | | Vendor: | |
| Description: | Go through the solutions unit in chemistry - labs, demos, | | | | |
| Level: | High | | | Strand: | GPS Within the Framework |
| Content: | Chemistry | Sci. & Eng. Practice: | NA | Crosscutting Concept: | Stability and Change |
| Title: | <i>Incorporating ELA into Science labs (K-5)</i> | | | Room: | 312 |
| Presenter(s): | Heather Hayes and Heidi Morea | | | Vendor: | |
| Description: | Incorporate writing in your Science block | | | | |
| Level: | Lower Elementary, Upper Elementary | | | Strand: | Integrating Science Within the CCGPS |
| Content: | General | Sci. & Eng. Practice: | Obtaining, Evaluating, and Communicating Information | Crosscutting Concept: | NA |
| Title: | <i>Using STEAM to teach Chemistry NGSS</i> | | | Room: | 324 |
| Presenter(s): | Maria Thurmond, Beth Feustel | | | Vendor: | |
| Description: | Build permanent products that apply the NGSS to the Chemistry content that make an impact on student learning. | | | | |
| Level: | High | | | Strand: | Integrated STEM Education |
| Content: | Chemistry | Sci. & Eng. Practice: | Constructing Explanations and Designing Solutions | Crosscutting Concept: | NA |

Science for All: Putting the Pieces Together

Concurrent Session: Friday 1:00-1:50

| | | | | | |
|----------------------|--|----------------------------------|--|------------------------------|---|
| Title: | <i>Take a Bite out of Data Analysis!</i> | | | Room: | Ballroom D |
| Presenter(s): | Sarida Hoy | | | | |
| Description: | Can bite marks assist in identifying an individual? Let's find out by making our own bite impressions. Inexpensive materials, yet effective in introducing statistics to your student's data analysis. | | | | |
| Level: | Middle, High | Strand: | Integrating Science Within the CCGPS | | |
| Content: | Forensic Science | Sci. & Eng. Practice: | Asking Questions & Defining Problems | Crosscutting Concept: | Structure and Function |
| Title: | <i>Creating a Blended Learning Environment</i> | | | Room: | Grand Salon A |
| Presenter(s): | Kelly Ingle, Philip Matthews | | | | |
| Description: | We will discuss how we have transformed our classes from traditional, lecture-based to a student-centered environment with an online component. | | | | |
| Level: | Middle, High, AP/IB | Strand: | NA | | |
| Content: | General | Sci. & Eng. Practice: | NA | Crosscutting Concept: | NA |
| Title: | <i>Using Interactive Case Studies in the Biology Classroom: Leveraging Technology to teach the Scientific Practices and Crosscutting Concepts</i> | | | Room: | Grand Salon B |
| Presenter(s): | Georgia W. Hodges, Sophia Jeong, Peggy McKay, & Matt Baker | | | | |
| Description: | Bring your laptop and experience newly created interactive case studies that address the NGSS framework and the GPS. | | | | |
| Level: | High, AP/IB | Strand: | GPS Within the Framework | | |
| Content: | Biology/Life Science | Sci. & Eng. Practice: | Obtaining, Evaluating, and Communicating Information | Crosscutting Concept: | Cause and Effect: Mechanisms and Explanations |
| Title: | <i>Successful Ideas for Co-teaching and Collaboration</i> | | | Room: | Magnolia CD |
| Presenter(s): | Sherrie Chovanec and Peter Fischer | | | | |
| Description: | Collaboration and co-teaching between special education/science teachers is not an option, but necessary. Learn about successful practices to meet the needs of individual students. | | | | |
| Level: | Middle, High | Strand: | NA | | |
| Content: | General | Sci. & Eng. Practice: | NA | Crosscutting Concept: | NA |

Concurrent Session: Friday 1:00-2:50

| | | | | | |
|----------------------|---|----------------------------------|---------------------------|------------------------------|-----|
| Title: | <i>MDJunior - An Integrated Afterschool STEM Program</i> | | | Room: | 308 |
| Presenter(s): | Sid Verma, Shaun Verma, Deepa Ranganathan MD | | | | |
| Description: | MDJunior - "Inspiring Selfless Service through Mentorship" with Knowledge, Skills and Attitude sessions that exemplify a truly integrative approach to learning the Science of Medicine | | | | |
| Level: | Middle, High, AP/IB, Supervisor/Leadership | Strand: | Integrated STEM Education | | |
| Content: | General | Sci. & Eng. Practice: | NA | Crosscutting Concept: | NA |

Science for All: Putting the Pieces Together

Featured Session



Picture Perfect Science, Grades K-2, 1:00-2:50 Ballroom B

- **Presenters:** Karen Ansberry & Emily Morgan, NSTA Press Authors
- **Description:** Authors of NSTA's award-winning Picture-Perfect Science series will share K-2 lessons that integrate science and reading through the use of engaging picture books. Ansberry co-authored *Picture-Perfect Science Lessons* to give science teachers the tools they need to help students learn to read and read to learn. As a former classroom teacher, she understands teachers are crunched for time and need high-interest, ready-to-use lessons that integrate literature, reading strategies, and science. Morgan feels that tapping into students' fascination with science will give them the motivation to read about it. She believes every teacher is a reading teacher and enjoys writing lessons that use engaging picture books and integrate reading strategies.
- **Level:** Lower Elementary
- **Strand:** Integrating Science Within the CCGPS
- **Content:** General
- **Science & Engineering Practice:** Multiple
- **Crosscutting Concept:** Multiple

Featured Session



Argumentation in the Science Classroom, 1:00-2:50 Ballroom C

- **Presenters:** Ellen Granger, Ph.D., & Todd Bevis Florida State University
- **Description:** An introduction to argumentation in the science classroom. This instructional technique includes all of the Practices of Science. Dr. Granger is the Director of the Office of Science Teaching Activities in the College of Arts and Sciences at Florida State University and the Co-Director of the FSU-Teach program for preparing secondary science and mathematics teachers. Bevis is the Director of Teacher Professional Development for the Office of Science Teaching Activities in the College of Arts and Sciences at Florida State University.
- **Level:** Middle, High, AP/IB, Supervisor/Leadership
- **Strand:** GPS Within the Framework
- **Content:** Engineering
- **Science & Engineering Practice:** Constructing Explanations and Designing Solutions
- **Crosscutting Patterns**

Science for All: Putting the Pieces Together

| Concurrent Session: Friday 1:00-2:50 | | | | |
|--------------------------------------|--|----------------------------------|--|--|
| Title: | <i>Fun with Science!!!</i> | | | Room: 313 |
| Presenter(s): | Jamie Akin | | | |
| Description: | Demonstrations for physics and chemistry can be fun for the kiddies as well as an awesome learning experience. I'll be sharing and doing lots of excellent demos and labs. Bring a flash drive and a | | | |
| Level: | High | | | Strand: NA |
| Content: | Physics | Sci. & Eng. Practice: | NA | Crosscutting Concept: NA |
| Title: | <i>STEMstars: Explore STEM resources generated from a long-standing university-school district partnership</i> | | | Room: Ballroom A |
| Presenter(s): | Laura Regassa, Missy Bennett, Louise Zehr, Laura Ike, Cynthia Dean, Alicia Garcia | | | |
| Description: | Join STEMstars faculty, graduate students and partner teachers for a highly interactive, hands-on session exploring inquiry-based STEM classroom activities. | | | |
| Level: | High, AP/IB, Supervisor, Leadership, Pre-service/Early Career Teachers | | | Strand: Integrated STEM Education |
| Content: | General | Sci. & Eng. Practice: | NA | Crosscutting Concept: NA |
| Title: | <i>Using hands-on water activities to teach physical and earth science concepts in elementary and middle grades.</i> | | | Room: Ballroom E |
| Presenter(s): | Catherine A. Teare Ketter, Seth Crew, and Students | | | |
| Description: | Participants will use water to demonstrate concepts such as friction, density, and wave morphology using everyday items. | | | |
| Level: | Upper Elementary, Middle, Pre-service/Early Career Teachers | | | Strand: Integrating Science Within the CCGPS |
| Content: | General | Sci. & Eng. Practice: | Planning & Carrying Out Investigations | Crosscutting Concept: Systems and System Models |
| Title: | <i>Classroom Management-Is this piece missing from your science education puzzle?</i> | | | Room: Magnolia A |
| Presenter(s): | Peter Vajda, Ph.D | | | |
| Description: | Proven research-based classroom management strategies to reduce discipline issues by 70% or more | | | |
| Level: | Lower Elementary, Upper Elementary, Middle, High, AP/IB | | | Strand: Preservice & Early Career Teachers |
| Content: | General | Sci. & Eng. Practice: | NA | Crosscutting Concept: NA |
| Title: | <i>Plants of the Muck & Mire</i> | | | Room: Magnolia B |
| Presenter(s): | Jerry Hightower, Penny Costanzo | | | |
| Description: | Teachers investigate the external and internal structures of hydrophytic plants by dissecting, sketching and recording notes in provided field journals. | | | |
| Level: | Upper Elementary, Middle, High | | | Strand: NA |
| Content: | Biology/Life Science | Sci. & Eng. Practice: | Planning & Carrying Out Investigations | Crosscutting Concept: NA |
| Title: | <i>And the Tide Comes In</i> | | | Room: Exhibit Hall A |
| Presenter(s): | Venetia Butler | | | |
| Description: | Teaching science concepts is easier and more fun when taught through experiential learning and books and activities focused on Georgia's own coast. | | | |
| Level: | Lower Elementary, Upper Elementary, Middle | | | Strand: Integrating Science Within the CCGPS |
| Content: | Environmental Science | Sci. & Eng. Practice: | Obtaining, Evaluating, and Communicating Information | Crosscutting Concept: Stability and Change |

Science for All: Putting the Pieces Together

Featured Session



How can we "Walk with the Dinosaurs?," 2:00-2:50 Exhibit Hall B

- **Presenter:** Cary Woodruff
- **Description:** Every child grows up fascinated by dinosaurs. These towering, bizarre behemoths captivate us because they were real monsters. All that remains of them today are their fossilized bones, and while we can examine and study these remnants, a part of the dinosaur allure remains in the mystique these near fabricated beasts. While children are near professionally versed in dinosaur knowledge, most reflect back on that time of their life as simply a hobby or fascination. So how does one take that childhood passion and turn it into a serious career? And why on Earth would anyone want to make a career out of dinosaurs? Cary Woodruff grew up in rural central Virginia, received a BS in Earth sciences with an emphasis in paleontology from Montana State University, and is currently working on an MS in geobiology at MSU under famed paleontologist Dr. Jack Horner. Cary has had several papers published ranging from the first burrowing dinosaur *Oryctodromeus cubicularis* to the majority being dedicated to sauropod dinosaurs and their growth. Cary described and named a new sauropod dinosaur *Rugocaudia cooneyi*, which is the northernmost sauropod found in North America to date.
- **Level:** Elementary, Middle, High, AP/IB
- **Content:** Earth Science

Concurrent Session: Friday 2:00-2:50

| | | | | | |
|----------------------|--|----------------------------------|---|------------------------------|--------------------------------------|
| Title: | <i>Interested? Tell me about it!</i> | | | Room: | 303 |
| Presenter(s): | Lynn Weber | | | Vendor: | Activate Learning |
| Description: | Elicit questions, start conversations, facilitate discussions and encourage argumentation all while doing science. Let's ask questions, talk about what you know and get our "hands on" science! | | | | |
| Level: | Lower Elementary, Upper Elementary | | | Strand: | Integrating Science Within the CCGPS |
| Content: | Biology/Life Science | Sci. & Eng. Practice: | Constructing Explanations and Designing Solutions | Crosscutting Concept: | NA |
| Title: | <i>STEM: Engineering Design Process</i> | | | Room: | 306 |
| Presenter(s): | Michael Bush | | | | |
| Description: | Participants will learn how to implement the steps of the Engineering Design Process by utilizing engineering concepts in the classroom. | | | | |
| Level: | Lower Elementary, Upper Elementary | | | Strand: | Integrated STEM Education |
| Content: | General | Sci. & Eng. Practice: | Planning & Carrying Out Investigations | Crosscutting Concept: | Structure and Function |

Science for All: Putting the Pieces Together

| Concurrent Session: Friday 2:00-2:50 | | | | |
|--------------------------------------|---|----------------------------------|--|---|
| Title: | <i>Using Science Notebooks to Impact Student Learning for Middle School</i> | | Room: | 309 |
| Presenter(s): | Kathy Armstrong & Marilyn Enoch | | Vendor: | FOSS- Delta Education-School Specialty, Science. |
| Description: | Using active investigations see how science notebooks impact student achievement; develop conceptual understanding, aid in gathering evidence and facilitate argumentation. | | | |
| Level: | Middle, Supervisor/Leadership | | Strand: | GPS Within the Framework |
| Content: | General | Sci. & Eng. Practice: | Obtaining, Evaluating, and Communicating Information | Crosscutting Concept: NA |
| Title: | <i>Futures in Histotechnology and Plastination</i> | | Room: | 310 |
| Presenter(s): | Shirley Powell, HT(ASCP)HTL, Technical Director | | Organization: | Histology Curricular Support Laboratory, Mercer University School of Medicine, Pathology Department |
| Description: | Histology is the study of tissue; Pathology is the study of disease. Tissues removed in the hospital Operating Room or clinics, in the doctor's office, or at autopsy have to be examined by a Pathologist grossly and microscopically, in order to make a diagnosis to help the clinicians to treat the patient correctly. Histotechnology is an allied Health Field that is widely overlooked for students looking for a future profession. This presentation will discuss the profession, the requirements to achieve certification, as well as a little background of what happens to specimens that arrive at the histology laboratory. The second part of this presentation will use plastinated specimens to explain plastination, what it is, its use in medical education, veterinary medicine, as well as archiving museum specimens. | | | |
| Level: | Middle, High, AP/IB | | Strand: | NA |
| Content: | Biology/Life Science | Sci. & Eng. Practice: | NA | Crosscutting Concept: NA |
| Title: | <i>Clueless No More</i> | | Room: | 312 |
| Presenter(s): | Dan Maley | | Strand: | NA |
| Description: | Getting underachievers engaged with forensic science | | | |
| Level: | High | | Crosscutting Concept: | Cause and Effect: Mechanisms and Explanations |
| Content: | Forensic Science | Sci. & Eng. Practice: | Engaging in Argument from Evidence | |
| Title: | <i>Engineering in Elementary Grades Where do I start?</i> | | Room: | 324 |
| Presenter(s): | Denise Webb and Amber Hoke | | Strand: | Integrated STEM Education |
| Description: | Engage K-5 students in engineering design activities with real world applications. Packet full of Ideas and resources you can use in your classroom right away with low cost materials is provided. | | | |
| Level: | Lower Elementary, Upper Elementary | | Crosscutting Concept: | NA |
| Content: | Engineering | Sci. & Eng. Practice: | Developing and Using Models | |
| Title: | <i>Who Are You?</i> | | Room: | Ballroom D |
| Presenter(s): | Sarida Hoy | | Strand: | Integrating Science Within the CCGPS |
| Description: | Use fingerprint patterns in a cross-curricular lesson that incorporates science, math, literacy, and social studies. This lesson can be modified for use from elementary through high school level. | | | |
| Level: | Upper Elementary, Middle, High | | Crosscutting Concept: | Structure and Function |
| Content: | Biology/Life Science | Sci. & Eng. Practice: | Asking Questions & Defining Problems | |

Science for All: Putting the Pieces Together

Concurrent Session: Friday 2:00-2:50

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|----------------------|---|----------------------------------|--|------------------------------|---|
| Title: | <i>Biodiversity Big and Small: Exploring Georgia's Flora and Fauna</i> | | | Room: | Grand Salon A |
| Presenter(s): | Karen Garland | | | | |
| Description: | Bring diverse ecological concepts to life by exploring various Georgia ecosystems. Explore engaging hands-on activities to complete seasonal science projects for the indoor and outdoor classroom. | | | | |
| Level: | Lower Elementary, Upper Elementary | | | Strand: | GPS Within the Framework |
| Content: | Biology/Life Science | Sci. & Eng. Practice: | Planning & Carrying Out Investigations | Crosscutting Concept: | Systems and System Models |
| Title: | <i>Gene Regulation & the Evolution of the Stickleback</i> | | | Room: | Grand Salon B |
| Presenter(s): | Jennifer Barnes | | | | |
| Description: | Wondering how to teach eukaryotic gene regulation? Participate in a modeling activity that goes through how genes are regulated in the Stickleback Fish, and how this relates to Evolution. | | | | |
| Level: | AP/IB | | | Strand: | GPS Within the Framework |
| Content: | Biology/Life Science | Sci. & Eng. Practice: | Developing and Using Models | Crosscutting Concept: | Cause and Effect: Mechanisms and Explanations |
| Title: | <i>Teaching genetics with case-based learning</i> | | | Room: | Magnolia CD |
| Presenter(s): | Sarah Eales, Laura Kohnke, Amy Maxwell, Christine Wahl | | | | |
| Description: | Come see how a group of biology teachers have integrated case-based learning into a genetics unit. | | | | |
| Level: | High | | | Strand: | NA |
| Content: | Biology/Life Science | Sci. & Eng. Practice: | Analyzing and Interpreting Data | Crosscutting Concept: | Patterns |

Concurrent Session: Friday 3:00-3:50

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|----------------------|--|----------------------------------|---|------------------------------|--|
| Title: | <i>Modeling: A Scientific Beauty Contest</i> | | | Room: | 306 |
| Presenter(s): | Lynn Weber | | | | |
| Description: | What do you think of when you hear the word "model"? A pie plate cell? A globe? A supermodel? Learn how scientific models explain a phenomenon. | | | | |
| Level: | Middle | | | Strand: | GPS Within the Framework |
| Content: | Physical Science | Sci. & Eng. Practice: | Developing and Using Models | Crosscutting Concept: | Systems and System Models |
| Title: | <i>Make Motion Physics Engaging and Accessible with Robots</i> | | | Room: | 308 |
| Presenter(s): | Tom Hsu | | | | |
| Description: | Hands-on workshop uses extraordinary classroom robot to teach speed, acceleration, graphs, vectors, and more. Come apply physics to STEM challenges such navigating a real maze. | | | | |
| Level: | High, AP/IB | | | Strand: | GPS Within the Framework |
| Content: | Physics | Sci. & Eng. Practice: | Constructing Explanations and Designing Solutions | Crosscutting Concept: | Cause and Effect: Mechanisms and Explanations |
| Title: | <i>Composting and the Next Generation Science Standards</i> | | | Room: | 310 |
| Presenter(s): | Paige Flores | | | | |
| Description: | Integrate science and engineering practices with the GPS through composting! Learn how students can design and build their own compost bins to optimize the decomposition process. | | | | |
| Level: | Middle, High | | | Strand: | GPS Within the Framework |
| Content: | Environmental Science | Sci. & Eng. Practice: | Planning & Carrying Out Investigations | Crosscutting Concept: | Energy and Matter: Flows, Cycles, and Conservation |

Science for All: Putting the Pieces Together

Concurrent Session: Friday 3:00-3:50

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|----------------------|---|----------------------------------|--|---|
| Title: | <i>Project-Based Learning Partnership between Language Arts and Science</i> | | Room: | 312 |
| Presenter(s): | Michele Langhans | | | |
| Description: | The session will include how one middle school has integrated Language Arts and Science in a PBL environment. | | | |
| Level: | Middle | Strand: | Integrating Science Within the CCGPS | |
| Content: | Physical Science | Sci. & Eng. Practice: | Obtaining, Evaluating, and Communicating Information | Crosscutting Concept: Energy and Matter: Flows, Cycles, and Conservation |
| Title: | <i>Show that you know</i> | | Room: | 313 |
| Presenter(s): | Monica Baker-Eady | | | |
| Description: | Show that you know-long term and short term projects | | | |
| Level: | Middle, High | Strand: | GPS Within the Framework | |
| Content: | General | Sci. & Eng. Practice: | Obtaining, Evaluating, and Communicating Information | Crosscutting Concept: NA |
| Title: | <i>Moleo makes Stoichiometry easy!</i> | | Room: | 324 |
| Presenter(s): | Maria Thurmond, Beth Feustel | | | |
| Description: | Moleo is a teacher created graphic organizer that is used as a teaching tool so that students can learn the math reasoning involved in stoichiometric conversion. | | | |
| Level: | High | Strand: | NA | |
| Content: | Chemistry | Sci. & Eng. Practice: | Using Mathematical and Computational Thinking | Crosscutting Concept: Patterns |
| Title: | <i>Reading a Test is Hard Work!</i> | | Room: | Ballroom B |
| Presenter(s): | Jodi Wheeler-Toppen | | | |
| Description: | Standardized tests represent a reading genre that challenges many students. Join the author of NSTA Press' Once Upon a Science Book series to learn a fun way to help your students read this genre. | | | |
| Level: | Middle, High | Strand: | Integrating Science Within the CCGPS | |
| Content: | General | Sci. & Eng. Practice: | NA | Crosscutting Concept: NA |
| Title: | <i>Ranking Activities for Science</i> | | Room: | Ballroom C |
| Presenter(s): | Rie Cowan, Ouida Dunton | | | |
| Description: | Reinforce content and expose misconceptions using ranking activities in secondary sciences. Activities in chemistry/physical science, biological sciences, & earth science will be presented. | | | |
| Level: | High, AP/IB | Strand: | GPS Within the Framework | |
| Content: | General | Sci. & Eng. Practice: | Engaging in Argument from Evidence | Crosscutting Concept: Patterns |
| Title: | <i>Speaking Up for Science Education in Georgia</i> | | Room: | Ballroom D |
| Presenter(s): | Brian Butler, Jeremy Peacock, T.J. Kaplan | | | |
| Description: | Many GSTA members are already leaders in your schools and districts, but our work is directly affected by decisions made at the state level. Are you ready to work to influence these decisions rather than simply waiting for them to be announced? Come and learn about GSTA's efforts to advocate for science education in our state, and learn about how you can use your teacher voice to support excellent science learning for all our students. | | | |
| Level: | Lower Elementary, Upper Elementary, Middle, High, AP/IB, College, Administrators, Supervisor/Leadership, Pre-service/Early Career Teachers | Strand: | NA | |
| Content: | Advocacy & Leadership | Sci. & Eng. Practice: | NA | Crosscutting Concept: NA |

Science for All: Putting the Pieces Together

Concurrent Session: Friday 3:00-3:50

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|----------------------|---|----------------------------------|--|------------------------------------|
| Title: | <i>Save the drama for your Mama.</i> | | Room: | Magnolia A |
| Presenter(s): | Deketa Cobb | | | |
| Description: | Keep student drama on the stage and out of your classrooms! Here are some strategies and tools to significantly reduce classroom drama and discipline issues. | | | |
| Level: | Lower Elementary, Upper Elementary, Middle, High, Supervisor/Leadership, Pre-service/Early Career Teachers | | Strand: | Preservice & Early Career Teachers |
| Content: | General | Sci. & Eng. Practice: | NA | Crosscutting Concept: |
| Title: | <i>Enrich Your STEM Curriculum with Ham Radio III</i> | | Room: | Exhibit Hall A |
| Presenter(s): | Martha Muir, Chuck Catledge, Jim Stafford, John Kludt, Mike Cohen, Wes Lamboley (all members of the North Fulton Amateur Radio League) | | | Organization: |
| Description: | Ham Radio provides a means to vastly increase the STEM curriculum at your school. We'll show you how and why! This session will give attendees hands on exposure to the topics "Space the Final Frontier: ARISS, FUNcube, Radio Jove and Other Adventures," and "Resources to Support Your Use of Wireless Technology in the Classroom." Take your classroom into space with ham radio! | | | |
| Level: | Upper Elementary, Middle, High | | Strand: | Integrated STEM Education |
| Content: | Engineering | Sci. & Eng. Practice: | Obtaining, Evaluating, and Communicating Information | Crosscutting Concept: |
| | | | | Structure and Function |

Concurrent Session: Friday 3:00-4:50

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|----------------------|--|----------------------------------|--|---|
| Title: | <i>Creating and Implementing Effective Watersheds of Georgia Lessons for All Students: Use of Brain-based Learning Stations and Next Generation Science Standards' Appendix D and Case Studies</i> | | Room: | 303 |
| Presenter(s): | Cherry C. Brewton, Ed.D. | | | |
| Description: | Putting together GPS, CCGPS, and STEM for ALL students. Rotate through hands-on, Watershed Stations. Collect data; make scientific claims. Brain-based and NGSS "All Standards, All Students" emphasis | | | |
| Level: | Lower Elementary, Upper Elementary, Middle, High, AP/IB | | Strand: | Integrated STEM Education |
| Content: | Earth Science | Sci. & Eng. Practice: | Planning & Carrying Out Investigations | Crosscutting Concept: |
| | | | | Cause and Effect: Mechanisms and Explanations |
| Title: | <i>21st Century Instruction: Problem-Based Learning in the Middle and High School Classroom</i> | | Room: | 309 |
| Presenter(s): | John Schafer | | | Vendor: |
| Description: | PBL is a curricular methodology that begins with real-world problems, progresses through cooperative learning, and concludes with potential solutions. | | | |
| Level: | Middle, High, AP/IB | | Strand: | Integrated STEM Education |
| Content: | General | Sci. & Eng. Practice: | NA | Crosscutting Concept: |
| | | | | NA |
| Title: | <i>Integrated STEM Instruction through Project Based Learning</i> | | Room: | Ballroom A |
| Presenter(s): | Michael Reilly, Bonnie Driscoll, Jonathon Wetherington | | | |
| Description: | This session will immerse participants in a STEM experience that will help teachers connect Science, Technology, Engineering, and Mathematics in an interdisciplinary way through project based learning | | | |
| Level: | Lower Elementary, Upper Elementary, Middle, High | | Strand: | Integrated STEM Education |
| Content: | Engineering | Sci. & Eng. Practice: | NA | Crosscutting Concept: |
| | | | | NA |

Science for All: Putting the Pieces Together

Concurrent Session: Friday 3:00-4:50

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|----------------------|--|----------------------------------|--|---|
| Title: | <i>Biotechnology Tool Box</i> | | Room: | Ballroom E |
| Presenter(s): | Catherine A. Teare Ketter, John Rose, Chip Pollard | | | |
| Description: | Basic Biotechnology lab skills and content alignment will be highlighted. | | | |
| Level: | High, AP/IB | | Strand: | Integrated STEM Education |
| Content: | Biology/Life Science | Sci. & Eng. Practice: | NA | Crosscutting Concept: Structure and Function |
| Title: | <i>Teaching STEM through Birds</i> | | Room: | Grand Salon A |
| Presenter(s): | Deb Jenkins, Melanie Furr, Area Teachers | | | |
| Description: | How teachers have used Learning About Birds bilingual curriculum to teach STEM. | | | |
| Level: | Lower Elementary, Upper Elementary, Middle, High, AP/IB, Pre-service/Early Career Teachers | | Strand: | Integrated STEM Education |
| Content: | Biology/Life Science | Sci. & Eng. Practice: | Planning & Carrying Out Investigations | Crosscutting Concept: Energy and Matter: Flows, Cycles, and Conservation |
| Title: | <i>Moving Beyond the Candy Cell: Bringing Authentic Modeling Into the Science Classroom</i> | | Room: | Grand Salon B |
| Presenter(s): | Zoe Evans, Jeremy Peacock | | | |
| Description: | Teachers and students are familiar with tactile, 3D models but often lack experience with other types of scientific models. Yet, modeling lies at the center of both a crosscutting concept and a science and engineering practice in A Framework for K-12 Science Education. This session will use a hands-on task to help you answer these questions: What are authentic scientific models? Why are they important? and How can you bring them into your teaching? | | | |
| Level: | Lower Elementary, Upper Elementary, Middle, High, AP/IB | | Strand: | GPS Within the Framework |
| Content: | General | Sci. & Eng. Practice: | Developing and Using Models | Crosscutting Concept: Systems and System Models |
| Title: | <i>Science Driven Interactive Writing</i> | | Room: | Magnolia B |
| Presenter(s): | Bejanae Kareem, Tommy Clay | | | |
| Description: | This session will demonstrate how to integrate science, writing and technology through a hands-on demonstration and list of resources. | | | |
| Level: | Lower Elementary, Upper Elementary, Middle, Pre-service/Early Career | | Strand: | Integrating Science Within the CCGPS |
| Content: | General | Sci. & Eng. Practice: | Obtaining, Evaluating, and Communicating Ideas | Crosscutting Concept: NA |
| Title: | <i>Environmental Stewardship: 5 Engaging Project-Based Learning Activities</i> | | Room: | Magnolia CD |
| Presenter(s): | Karan Wood | | | |
| Description: | Empower your class to solve real-world environmental problems through stewardship projects such as restoring wildlife habitat, designing and building rain gardens, mitigating pollution with mushrooms | | | |
| Level: | Upper Elementary, Middle, High, AP/IB | | Strand: | Integrated STEM Education |
| Content: | General | Sci. & Eng. Practice: | Planning & Carrying Out Investigations | Crosscutting Concept: Systems and System Models |

Concurrent Session: Friday 4:00-4:50

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|----------------------|---|----------------------------------|------------------------------------|---------------------------------|
| Title: | <i>Argumentation and Discourse in the STEM Classroom</i> | | Room: | 306 |
| Presenter(s): | Heather Wilde | | | |
| Description: | Building the Skills of Argumentation and Collaboration in STEM | | | |
| Level: | Lower Elementary, Upper Elementary, Middle, High | | Strand: | GPS Within the Framework |
| Content: | General | Sci. & Eng. Practice: | Engaging in Argument from Evidence | Crosscutting Concept: NA |

Science for All: Putting the Pieces Together

| Concurrent Session: Friday 4:00-4:50 | | | | |
|--------------------------------------|--|----------------------------------|--|--|
| Title: | <i>POST-it: Vocabulary fit for 5E's classrooms</i> | | | Room: 308 |
| Presenter(s): | Amy Rejmer | | | |
| Description: | An authentic vocabulary strategy for 5E/ inquiry-based classrooms | | | |
| Level: | Upper Elementary, Middle, High | | | Strand: Integrating Science Within the CCGPS |
| Content: | General | Sci. & Eng. Practice: | Obtaining, Evaluating, and Communicating Information | Crosscutting Concept: Cause and Effect: Mechanisms and Explanations |
| Title: | <i>Energizing your students with Robotics, Sponsors and Resources</i> | | | Room: 310 |
| Presenter(s): | Walton Robotics | | | |
| Description: | Description of all levels of FIRST Robotics and supporting information about funding/resource support | | | |
| Level: | Lower Elementary, Upper Elementary, Middle, High, AP/IB, Supervisor/Leadership, Pre-service/Early Career Teachers | | | Strand: Integrated STEM Education |
| Content: | Engineering | Sci. & Eng. Practice: | NA | Crosscutting Concept: NA |
| Title: | <i>Using Interdependence to Foster Inquiry</i> | | | Room: 312 |
| Presenter(s): | Heather Scott, Missy Bennett, Lauren Stallard, Megan Troutt, Elizabeth Lozano, Donna Morgan | | | |
| Description: | Classroom teachers share their experiences from a summer course immersed in inquiry. | | | |
| Level: | Middle, High | | | Strand: Integrated STEM Education |
| Content: | Environmental Science | Sci. & Eng. Practice: | Planning & Carrying Out Investigations | Crosscutting Concept: Cause and Effect: Mechanisms and Explanations |
| Title: | <i>Student-Centered Physics Activities that Promote Engagement and Conceptual Understanding</i> | | | Room: 313 |
| Presenter(s): | Jason Goodman, Philip Matthews | | | |
| Description: | Explore various methods of ensuring engagement in a student-centered physics classroom. | | | |
| Level: | High, AP/IB | | | Strand: NA |
| Content: | Physics | Sci. & Eng. Practice: | Using Mathematical and Computational Thinking | Crosscutting Concept: Systems and System Models |
| Title: | <i>Georgia Envirothon: an outdoor natural resource high school competition</i> | | | Room: 324 |
| Presenter(s): | Josh Seehorn, Tyson Harty | | | |
| Description: | The Georgia Envirothon is an interactive, outdoor competition for high school students in the areas of Wildlife, Forestry, Soils/Land Use, Aquatic Ecology, and Current Issue. | | | |
| Level: | Middle, High, AP/IB | | | Strand: Integrated STEM Education |
| Content: | Environmental Science | Sci. & Eng. Practice: | Constructing Explanations and Designing Solutions | Crosscutting Concept: Cause and Effect: Mechanisms and Explanations |
| Title: | <i>Technology in Science</i> | | | Room: Ballroom B |
| Presenter(s): | Whitney Patterson, Jane Smith, Ashli Jay | | | |
| Description: | Integrating technology | | | |
| Level: | Upper Elementary, Middle, High | | | Strand: Integrating Science Within the CCGPS |
| Content: | General | Sci. & Eng. Practice: | Developing and Using Models | Crosscutting Concept: NA |

Science for All: Putting the Pieces Together

Concurrent Session: Friday 4:00-4:50

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|----------------------|--|----------------------------------|---|--|
| Title: | <i>Equations Don't Fall from the Ceiling, or Anywhere Higher</i> | | Room: | Ballroom C |
| Presenter(s): | Frank Lock | | | |
| Description: | Strategies used in the modeling pedagogy to develop mathematical models (equations) that enable students to make predictions about how nature works will be introduced. | | | |
| Level: | Middle, High | | Strand: | GPS Within the Framework |
| Content: | General | Sci. & Eng. Practice: | Developing and Using Models | Crosscutting Concept: Systems and System Models |
| Title: | <i>Host a STEAM Summer Camp at your Middle School</i> | | Room: | Ballroom D |
| Presenter(s): | Kari Salomon, David Schoenrock | | | |
| Description: | Planning and Strategies for a successful STEAM Summer Camp | | | |
| Level: | Middle | | Strand: | Integrated STEM Education |
| Content: | Engineering | Sci. & Eng. Practice: | Constructing Explanations and Designing Solutions | Crosscutting Concept: Structure and Function |
| Title: | <i>Scientific Argumentation Through Explicit Inquiry and Immersion</i> | | Room: | Magnolia A |
| Presenter(s): | Jayma Koval, Beth Kostka, Sabrina Grossman, Mike Ryan | | | |
| Description: | Experience how to imbed scientific argument into your secondary science classroom using a one-week argument tutorial plus immersion model. Engage in inquiry activities and receive access to NSF-developed materials. | | | |
| Level: | Middle | | Strand: | Integrating Science Within the CCGPS |
| Content: | General | Sci. & Eng. Practice: | Engaging in Argument from Evidence | Crosscutting Concept: Cause and Effect: Mechanisms and Explanations |
| Title: | <i>Elementary Science Olympiad - No Experience Necessary!</i> | | Room: | Exhibit Hall A |
| Presenter(s): | Amber Hoke | | | |
| Description: | Whether starting a team at your school, or using events for a Science Fun Day, Science Olympiad promotes cooperative problem solving and a love for Science. | | | |
| Level: | Upper Elementary | | Strand: | NA |
| Content: | General | Sci. & Eng. Practice: | NA | Crosscutting Concept: NA |

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Science for All: Putting the Pieces Together



Exhibit Hall Closing & Door Prize Giveaway

- After collecting 15 stamps, drop your Exhibit Hall Passport in the door prize box at the Exhibit Hall Registration Desk, by 4:30 PM on Friday.
- Be present for the Door Prize drawing Friday afternoon to win great prizes from our vendors. ***You must be present to win.***
- Friday, 5:00 pm in the Exhibit Hall

Exhibitors Providing Door Prizes:

DRAFT

Science for All: Putting the Pieces Together



Awards Ceremony & Baquet

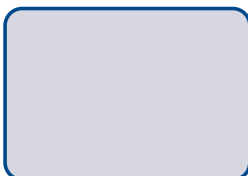
- Amory Ballroom, 484 First Street, Downtown Macon
- Friday 6:30 - 10:00 pm
 - Reception Begins at 6:30
 - Dinner & Ceremony Begin at 7:00
- Southern Menu Catered by Moonhanger Group
- Banquet Address by **Bill Badders, NSTA Past President**. Badders is retired from the Cleveland Metropolitan School District (CMSD) in Cleveland, Ohio, where he was the director of the Cleveland Math and Science Partnership. For more than four decades, Badders has been a devoted teacher and leader in science education.
- Tickets Available at Registration \$26.00

Special Thanks to Our Award Sponsors



Conference Sessions - Saturday

Session Feedback Surveys - Saturday



- Please provide feedback on each session you attend today by following the URL or QR code to access the online feedback form.
- ???add URL???

Special Workshop



Touching Triton High School Biology Workshop,

8:00 am - 3:00 pm Magnolia A

- **Presenters:** Adam Hott, HudsonAlpha Institute for Biotechnology
- **Description:** GSTA and HudsonAlpha are partnering to provide a special professional learning opportunity Saturday, February 7th, as part of our annual conference. Participants must be registered for the GSTA Annual Conference, but there is no additional fee for this workshop. This will include lunch and take-aways. Touching Triton is an online activity focused on teaching the genetic, environmental and family history influences on common complex disease. The session will last 7 hours and will train teachers to use and implement the activity into the high school life science classroom. Registration will be limited to 40 participants. **Separate, FREE registration required.**
- **Level:** High, AP/IB
- **Content:** Biology/Life Science
- **Science & Engineering Practice:** Multiple
- **Crosscutting Concept:** Multiple

Concurrent Session: Saturday 8:00-8:50

| | | | | | |
|----------------------|--|----------------------------------|----------------|------------------------------|----|
| Title: | <i>Coteaching: How to make the marriage work</i> | | Room: | 306 | |
| Presenter(s): | Tanya Flynn | | | | |
| Description: | How to be an effective team | | | | |
| Level: | Middle, High | | Strand: | GPS Within the Framework | |
| Content: | General | Sci. & Eng. Practice: | NA | Crosscutting Concept: | NA |

Science for All: Putting the Pieces Together

Concurrent Session: Saturday 8:00-8:50

| | | | | | |
|----------------------|--|----------------------------------|--|------------------------------|---|
| Title: | <i>Science E Learning tool for parents and Teachers</i> | | | Room: | 309 |
| Presenter(s): | Sudeep Kumar | | | Vendor: | www.echildstudy.com |
| Description: | How to improve science in education system | | | | |
| Level: | Lower Elementary, Upper Elementary, Middle, High | | | Strand: | Integrated STEM Education |
| Content: | General | Sci. & Eng. Practice: | Obtaining, Evaluating, and Communicating Information | Crosscutting Concept: | Systems and System Models |
| Title: | <i>Are science courses changing again?????</i> | | | Room: | 310 |
| Presenter(s): | Marion Reeves | | | | |
| Description: | Science is science right? No starting over is needed. Rethinking the best GPS lessons will move smoothly into the three strands of NGSS lessons | | | | |
| Level: | Middle, High | | | Strand: | GPS Within the Framework |
| Content: | General | Sci. & Eng. Practice: | NA | Crosscutting Concept: | NA |
| Title: | <i>PBL What? A Newbie's Journey.</i> | | | Room: | 313 |
| Presenter(s): | Mr. Freddy A Perry | | | | |
| Description: | A brief presentation of our school and our struggle/success implementing STEAM/PBL lessons | | | | |
| Level: | Upper Elementary, Middle | | | Strand: | NA |
| Content: | General | Sci. & Eng. Practice: | NA | Crosscutting Concept: | NA |
| Title: | <i>GEOLOGY! Straight out of the box and on to your classroom lab table.</i> | | | Room: | 324 |
| Presenter(s): | Stephen Csukas, Desmond Lee, Angela Sauve' | | | | |
| Description: | Engage your students! Use our pre-packaged earth science kits tested in actual classrooms and revised by science teachers. Come participate - take away geology lessons and kits. | | | | |
| Level: | Middle | | | Strand: | GPS Within the Framework |
| Content: | Earth Science | Sci. & Eng. Practice: | NA | Crosscutting Concept: | NA |
| Title: | <i>Sun Power for Schools Solar Energy Modules: Using real-time solar energy data to engage students in earth systems and earth science investigations.</i> | | | Room: | Ballroom A |
| Presenter(s): | Judy Cox and Gail Marshall | | | | |
| Description: | Developers of lesson modules for Green Power EMC's Solar Energy Curriculum will provide descriptions, with some hands on experiences, to introduce participants to the modules and lessons in this curriculum related to earth systems/ earth science for middle and high school levels. Information will be provided to introduce the easily accessible website that houses real-time and archived data from solar panels on approximately 35 school campuses around the state. Each module for earth science/ earth systems contains three inquiry, "ready to use" standards-based lesson (Content/Characteristics of Science/Literacy) that help students investigate, collect and analyze data, and to apply what they are learning to real-life situations. | | | | |
| Level: | Middle, High | | | Strand: | Integrated STEM Education |
| Content: | Earth Science | Sci. & Eng. Practice: | Analyzing and Interpreting Data | Crosscutting Concept: | Cause and Effect: Mechanisms and Explanations |

Science for All: Putting the Pieces Together

| Concurrent Session: Saturday 8:00-8:50 | | | | |
|--|--|----------------------------------|--|--|
| Title: | <i>Integrating science with confidence</i> | | | Room: Ballroom C |
| Presenter(s): | Lynette Clark, Rochelle Mungin | | | |
| Description: | Middle school teachers incorporate science in daily reading and math lessons for elementary schools lessons to a | | | |
| Level: | Lower Elementary, Upper Elementary | | | Strand: GPS Within the Framework |
| Content: | General | Sci. & Eng. Practice: | Planning & Carrying Out Investigations | Crosscutting Concept: NA |
| Title: | <i>Fast, easy and CHEAP STEM</i> | | | Room: Ballroom D |
| Presenter(s): | Lisa Henriquez, Erin Wood | | | |
| Description: | Fast, easy and cheap ways to incorporate STEM activities at your school | | | |
| Level: | Lower Elementary, Upper Elementary, Middle | | | Strand: Integrated STEM Education |
| Content: | General | Sci. & Eng. Practice: | Planning & Carrying Out Investigations | Crosscutting Concept: NA |
| Title: | <i>A Science Intensive Program at the Satit Kaset International Program School, Bangkok, Thailand</i> | | | Room: Ballroom E |
| Presenter(s): | Larry K. Hampton, Dr. Naruemon Yutakom, David Paperno, Darryl Brese, Hannah Elaine James | | | |
| Description: | A discussion on the experiences of four Georgia science teachers participating in a novel approach to science education at the Satit Kaset IP School in Bangkok, Thailand. | | | |
| Level: | High, Supervisor/Leadership | | | Strand: Integrated STEM Education |
| Content: | General | Sci. & Eng. Practice: | Developing and Using Models | Crosscutting Concept: NA |
| Title: | <i>Just Go With the Flow! Classroom STEM Integration in an Inclusion Setting</i> | | | Room: Grand Salon A |
| Presenter(s): | Alana Davis | | | |
| Description: | Learn how to integrate weekly STEM challenges in your inclusion classroom with ideas on how to plan, manage, and follow-through with engaging STEM challenges! | | | |
| Level: | Upper Elementary | | | Strand: Integrated STEM Education |
| Content: | Engineering | Sci. & Eng. Practice: | Planning & Carrying Out Investigations | Crosscutting Concept: NA |
| Title: | <i>Capturing Students for Science through Photography</i> | | | Room: Grand Salon B |
| Presenter(s): | John Behr, Deb Jenkins, Melanie Furr | | | |
| Description: | Take and modify bird photographs to help teach GPS standards | | | |
| Level: | Upper Elementary, Middle, High | | | Strand: GPS Within the Framework |
| Content: | Biology/Life Science | Sci. & Eng. Practice: | NA | Crosscutting Concept: NA |

| Concurrent Session: Saturday 8:00-9:50 | | | | |
|--|--|----------------------------------|---|---------------------------------------|
| Title: | <i>Making music: Exploring the nature of sound</i> | | | Room: 303 |
| Presenter(s): | Brian Williams, Olga S. Jarrett, Betsy Stuart | | | |
| Description: | Following physics of sound demonstrations, participants will make and experiment with wind, percussion, and stringed instruments. Experiment with sound and music. Take away handouts. | | | |
| Level: | Lower Elementary, Upper Elementary, Pre-service/Early Career Teachers | | | Strand: NA |
| Content: | Physics | Sci. & Eng. Practice: | Constructing Explanations and Designing Solutions | Crosscutting Concept: Patterns |

Science for All: Putting the Pieces Together

Concurrent Session: Saturday 8:00-9:50

| | | | | | |
|----------------------|---|----------------------------------|--|------------------------------|---|
| Title: | <i>Learning Technology</i> | | | Room: | 308 |
| Presenter(s): | Carnellia Ajasin and Kina Champion | | | Vendor: | Mind Katalyst |
| Description: | Computer Science in the Class | | | Strand: | Integrated STEM Education |
| Level: | Middle, High | | | Crosscutting Concept: | Systems and System Models |
| Content: | General | Sci. & Eng. Practice: | Asking Questions & Defining Problems | | |
| Title: | <i>Quick Literacy Strategies that Increase Student Engagement</i> | | | Room: | Ballroom B |
| Presenter(s): | Cheryl Hudson | | | | |
| Description: | How can you support literacy development in science and increase engagement simultaneously? Three strategies will be modeled and practiced that are easy to implement and incorporate technology. | | | Strand: | Integrating Science Within the CCGPS |
| Level: | High | | | Crosscutting Concept: | Stability and Change |
| Content: | General | Sci. & Eng. Practice: | Obtaining, Evaluating, and Communicating Information | | |
| Title: | <i>Field Testing SAGES: an Engaging Environmental Pathway through Standards-based STEM Learning</i> | | | Room: | Magnolia B |
| Presenter(s): | Captain Planet Foundation teachers | | | Organization: | Captain Planet Foundation |
| Description: | Transform science education by teaching the K-12 CCGPSS core ideas from an environmental perspective, engaging students in science practices and engineering design challenges. | | | Strand: | Integrating Science Within the CCGPS |
| Level: | Lower Elementary, Upper Elementary, Middle, High, AP/IB, Supervisor/Leadership, Pre-service/Early Career Teachers | | | Crosscutting Concept: | Cause and Effect: Mechanisms and Explanations |
| Content: | General | Sci. & Eng. Practice: | Constructing Explanations and Designing Solutions | | |
| Title: | <i>"Hot Doughnuts Now" Integrating Scientific Literacy and Problem Based Learning</i> | | | Room: | Magnolia CD |
| Presenter(s): | Dr. Mashawn Duncan-Young, Dr. Franklin-Jones, Mari-De Kilcrease | | | | |
| Description: | This hands-on engaging session will embed scientific literacy and Problem Based Learning in High School Biology. | | | Strand: | Integrating Science Within the CCGPS |
| Level: | High | | | Crosscutting Concept: | Cause and Effect: Mechanisms and Explanations |
| Content: | Biology/Life Science | Sci. & Eng. Practice: | Planning & Carrying Out Investigations | | |

Science for All: Putting the Pieces Together

Concurrent Session: Saturday 9:00-9:50

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|----------------------|--|----------------------------------|--|--|
| Title: | <i>Teaching 21st Century Reasoning Skills Through an Interdisciplinary STEM Research Experience</i> | | Room: | 306 |
| Presenter(s): | Deborah Walker, Robert Mayes | | | |
| Description: | How teachers are using Place-based Education, Problem Based Learning and UbD to design authentic, real-world experiences that develop 21st Century reasoning skills will be shared. | | | |
| Level: | Middle, High, AP/IB, Supervisor/Leadership | Strand: | Integrated STEM Education | |
| Content: | General | Sci. & Eng. Practice: | Asking Questions & Defining Problems | Crosscutting Concept: Systems and System Models |
| Title: | <i>Physics Labs: Starting from Scratch</i> | | Room: | 309 |
| Presenter(s): | Laura A. Whitlock, Ioana Beldeanu | | | |
| Description: | A set of physics labs were developed, without the limitations of prior equipment or manuals, but with the new standards in mind. | | | |
| Level: | High, AP/IB | Strand: | Integrating Science Within the CCGPS | |
| Content: | Physics | Sci. & Eng. Practice: | Analyzing and Interpreting Data | Crosscutting Concept: Cause and Effect: Mechanisms and Explanations |
| Title: | <i>Breathe easy with hands-on STEM for Middle School.</i> | | Room: | 310 |
| Presenter(s): | Joseph Giunta, Gretchen Gigley | | Organization: | Clean Air Campaign |
| Description: | Breathe easy with this STEM-based service-learning activity for grades 3rd-8th. | | | |
| Level: | Upper Elementary, Middle | Strand: | Integrated STEM Education | |
| Content: | Environmental Science | Sci. & Eng. Practice: | Planning & Carrying Out Investigations | Crosscutting Concept: Cause and Effect: Mechanisms and Explanations |
| Title: | <i>Focusing on Change Across the Curriculum</i> | | Room: | 313 |
| Presenter(s): | Katie Brkich, Tamra Lamb | | | |
| Description: | Come learn about how we integrated the NGSS cross-cutting concept of Stability and Change across our elementary curriculum in an interdisciplinary fashion including science, engineering, writing, reading, and social studies through use of Change Notebooks. | | | |
| Level: | Lower Elementary, Upper Elementary, Pre-service/Early Career Teachers | Strand: | GPS Within the Framework | |
| Content: | General | Sci. & Eng. Practice: | NA | Crosscutting Concept: Stability and Change |
| Title: | <i>Using Maps, Fossils, and Place-Based Learning To Explore the History of Life in Georgia</i> | | Room: | 324 |
| Presenter(s): | Christy Visaggi, Rebecca Pickering, Laura Streib, Jessica Martinez, Matthew Toro | | | |
| Description: | This session will examine the paleontology of Georgia through our physiographic regions as based on a 2014 workshop organized by the Georgia Geographic Alliance. | | | |
| Level: | Lower Elementary, Upper Elementary, Middle, High, AP/IB, College, Supervisor/Leadership, Pre-service/Early Career Teachers | Strand: | Integrated STEM Education | |
| Content: | Earth Science | Sci. & Eng. Practice: | Analyzing and Interpreting Data | Crosscutting Concept: Stability and Change |

Science for All: Putting the Pieces Together

Concurrent Session: Saturday 9:00-9:50

| | | | | |
|----------------------|--|---|------------------------------|---|
| Title: | <i>Using Contextualized STEM to Engage At-Risk Students</i> | | Room: | Ballroom A |
| Presenter(s): | Jeremy Dockery | | | |
| Description: | Exploring STEM careers, tools, and technologies in an innovative online platform. | | | |
| Level: | Middle, High | | Strand: | Integrated STEM Education |
| Content: | General | Sci. & Eng. Practice: Obtaining, Evaluating, and Communicating Information | Crosscutting Concept: | Cause and Effect: Mechanisms and Explanations |
| Title: | <i>Work Smarter Not Harder: Making Learning Targets and Formative Assessment Work in the Classroom</i> | | Room: | Ballroom C |
| Presenter(s): | Brian Butler, Julie Scott, Lisa Thompson | | | |
| Description: | Strategies you can implement tomorrow to make your assessments more meaningful. Learning targets and formative assessments make your teaching easier not more complex. Learn how. | | | |
| Level: | Middle, High | | Strand: | NA |
| Content: | General | Sci. & Eng. Practice: NA | Crosscutting Concept: | NA |
| Title: | <i>Science Ambassadors</i> | | Room: | Ballroom D |
| Presenter(s): | Donna Governor and Denise Webb | | | |
| Description: | Looking for a way to have Science and Engineering night at your school and don't know where to start? Come to our session and we will share how to utilize high school students to run your program. | | | |
| Level: | Lower Elementary, Upper Elementary, High | | Strand: | Integrated STEM Education |
| Content: | General | Sci. & Eng. Practice: Developing and Using Models | Crosscutting Concept: | NA |
| Title: | <i>Integrating a STEM Day and STEM Lessons</i> | | Room: | Ballroom E |
| Presenter(s): | Lucas Findlay | | | |
| Description: | Instructors and schools that are new to STEM are encouraged to attend to receive ideas on the integration of a STEM day and STEM lessons. | | | |
| Level: | Upper Elementary | | Strand: | Integrated STEM Education |
| Content: | Engineering | Sci. & Eng. Practice: Constructing Explanations and Designing Solutions | Crosscutting Concept: | NA |
| Title: | <i>Guided Inquiry and Digital Video Technologies in Physical Science</i> | | Room: | Grand Salon A |
| Presenter(s): | Karen Chassereau, Lucy Green | | | |
| Description: | Student-created video projects developed within the framework of guided inquiry, help learners shift from a focus on abstract, scientific concepts to practical scientific applications. | | | |
| Level: | Middle, High | | Strand: | NA |
| Content: | Physical Science | Sci. & Eng. Practice: Obtaining, Evaluating, and Communicating Information | Crosscutting Concept: | Systems and System Models |
| Title: | <i>How to Revolutionize Ordinary Labs</i> | | Room: | Grand Salon B |
| Presenter(s): | Marc Pedersen | | | |
| Description: | This session will describe how one teacher was able to completely revolutionize his labs to increase rigor and inquiry in the classroom. | | | |
| Level: | High | | Strand: | Integrated STEM Education |
| Content: | Biology/Life Science | Sci. & Eng. Practice: Planning & Carrying Out Investigations | Crosscutting Concept: | NA |

Science for All: Putting the Pieces Together

| Concurrent Session: Saturday 10:00-10:50 | | | | |
|--|--|----------------------------------|---|---|
| Title: | <i>Lighten Your STEM Load with Color and Optics</i> | | | Room: 309 |
| Presenter(s): | Tom Hsu | | | Vendor: Ergopedia, Inc. |
| Description: | Insightful experiments, lessons, and tools to teach light and optics. Hands-on session covers color, energy, reflection, refraction, magnification, telescopes, microscopes and even quantum light! | | | |
| Level: | High, AP/IB | | | Strand: Integrating Science Within the CCGPS |
| Content: | Physics | Sci. & Eng. Practice: | Developing and Using Models | Crosscutting Concept: Energy and Matter: Flows, Cycles, and Conservation |
| Title: | <i>Enacting Teacher Leadership to Support Science for All</i> | | | Room: 310 |
| Presenter(s): | Zoe Evans, Jeremy Peacock | | | |
| Description: | Meaningful change in science education in Georgia can only be accomplished through the efforts of teacher leaders throughout the state. Learn how you can leverage your teaching practice to promote change in your school and district leading to excellent science education for all students. | | | |
| Level: | Lower Elementary, Upper Elementary, Middle, High, AP/IB, College, Administrators, Supervisor/Leadership, Pre-service/Early Career Teachers | | | Strand: NA |
| Content: | Advocacy & Leadership | Sci. & Eng. Practice: | NA | Crosscutting Concept: NA |
| Title: | <i>Stemulating Science Lessons for the Elementary Science Classroom</i> | | | Room: Ballroom A |
| Presenter(s): | Steven King | | | |
| Description: | STEM-based Science Lessons and Classroom Ideas for K-5 Science Classes | | | |
| Level: | Lower Elementary, Upper Elementary | | | Strand: Integrated STEM Education |
| Content: | General | Sci. & Eng. Practice: | Planning & Carrying Out Investigations | Crosscutting Concept: Cause and Effect: Mechanisms and Explanations |
| Title: | <i>Scientific Explanation in Elementary Classrooms</i> | | | Room: Ballroom B |
| Presenter(s): | Michelle Bergozza | | | |
| Description: | Use the C-E-R framework in Kindergarten through Fifth Grade to encourage scientific discussion and argumentation in the elementary classroom. | | | |
| Level: | Lower Elementary, Upper Elementary | | | Strand: Integrating Science Within the CCGPS |
| Content: | General | Sci. & Eng. Practice: | Constructing Explanations and Designing Solutions | Crosscutting Concept: NA |
| Title: | <i>See. Do. Experience.</i> | | | Room: Ballroom C |
| Presenter(s): | Christopher Holmes | | | |
| Description: | Focusing of the intentional implementation of the instructional frameworks by establishing teacher roles, learning targets, performance and cognitive demand of science content via modes of instruction | | | |
| Level: | Lower Elementary, Upper Elementary, Middle, High | | | Strand: GPS Within the Framework |
| Content: | General | Sci. & Eng. Practice: | Asking Questions & Defining Problems | Crosscutting Concept: Structure and Function |

Science for All: Putting the Pieces Together

Concurrent Session: Saturday 10:00-10:50

| | | | | |
|----------------------|--|----------------------------------|---|--|
| Title: | <i>What's "App"ening With You?</i> | | Room: | Ballroom D |
| Presenter(s): | Erica Peddi | | | |
| Description: | This session will highlight apps and websites to use in many different science classrooms. | | | |
| Level: | Upper Elementary, Middle, High, AP/IB, Pre-service/Early Career Teachers | | Strand: | NA |
| Content: | General | Sci. & Eng. Practice: | Developing and Using Models | Crosscutting Concept: Systems and System Models |
| Title: | <i>"Meet me at your iPad?" Rich, differentiated environments for active learning</i> | | Room: | Grand Salon B |
| Presenter(s): | Amber Morgan, Randall Spaid, Michael Ryan | | | |
| Description: | In this session, we will describe how we create Personal Learning Environments and demonstrate effective strategies to increase student learning using technology iPads, iBook Author, and Prezi | | | |
| Level: | Middle, High | | Strand: | GPS Within the Framework |
| Content: | Biology/Life Science | Sci. & Eng. Practice: | Constructing Explanations and Designing Solutions | Crosscutting Concept: Systems and System Models |
| Title: | <i>Classroom websites</i> | | Room: | Magnolia B |
| Presenter(s): | Ann Alford, Tanya Flynn | | | |
| Description: | It's easy as 1. 2. 3...How to set up a website for your class | | | |
| Level: | Upper Elementary, Middle, High, AP/IB | | Strand: | GPS Within the Framework |
| Content: | General | Sci. & Eng. Practice: | NA | Crosscutting Concept: NA |
| Title: | <i>A Vacation Through the Solar System</i> | | Room: | Magnolia CD |
| Presenter(s): | April Leachman | | | |
| Description: | How to incorporate FREE NASA and AGI curriculum materials into your classroom. Learn how to video conference with NASA Scientists using the Digital Learning Network. | | | |
| Level: | Middle | | Strand: | Integrated STEM Education |
| Content: | Earth Science | Sci. & Eng. Practice: | Analyzing and Interpreting Data | Crosscutting Concept: Systems and System Models |

Concurrent Session: Saturday 10:00-11:50

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|----------------------|--|----------------------------------|---------------------------------|--|
| Title: | <i>Science from sand: Integrated activities for the elementary and middle school</i> | | Room: | 303 |
| Presenter(s): | Olga S. Jarrett, Brian Williams | | | |
| Description: | This workshop, focusing on the sands of Georgia, includes eight hands-on learning stations to explore. Make sand viewers and receive a handout of classroom ideas. | | | |
| Level: | Lower Elementary, Upper Elementary, Middle, Pre-service/Early Career Teachers | | Strand: | NA |
| Content: | Earth Science | Sci. & Eng. Practice: | Analyzing and Interpreting Data | Crosscutting Concept: Scale, Proportion, and Quantity |

Science for All: Putting the Pieces Together

Concurrent Session: Saturday 10:00-11:50

| | | | | | |
|----------------------|--|----------------------------------|---|------------------------------|---|
| Title: | <i>Robots on the Move</i> | | | Room: | 306 |
| Presenter(s): | Ronnie Thomas, Reggie Oneil, Tommy Clay | | | | |
| Description: | Teachers will engage in programming the robotic ball Sphero to complete task | | | | |
| Level: | Lower Elementary, Upper Elementary, Middle, High, AP/IB, College, Supervisor/Leadership, Pre-service/Early Career Teachers | Strand: | Integrated STEM Education | | |
| Content: | Physics | Sci. & Eng. Practice: | Using Mathematical and Computational Thinking | Crosscutting Concept: | Cause and Effect: Mechanisms and Explanations |
| Title: | <i>Breadboards are Not Just for Kitchens!</i> | | | Room: | 308 |
| Presenter(s): | Susannah Lomant | | | | |
| Description: | Learn how to integrate breadboard and circuit concepts into your STEM classroom. Participants will build simple circuits, then move on to music-making machines using 555 timer chips. Several lucky people will get their own circuit kits for the classroom. | | | | |
| Level: | Middle, High, AP/IB, College | Strand: | Integrated STEM Education | | |
| Content: | Physics | Sci. & Eng. Practice: | Planning & Carrying Out Investigations | Crosscutting Concept: | NA |
| Title: | <i>Got CSI?</i> | | | Room: | 313 |
| Presenter(s): | Linnell Burton | | | | |
| Description: | This workshop will demonstrate several investigative techniques for properly preserving, processing, documenting, and collecting physical evidence from a crime scene. The students will learn homemade skills to gather information and apply their knowledge to the forensic science world of Crime Scene Investigation. | | | | |
| Level: | Middle, High, AP/IB, College, Supervisor/Leadership, Pre-service/Early Career Teachers | Strand: | Integrated STEM Education | | |
| Content: | Forensic Science | Sci. & Eng. Practice: | Planning & Carrying Out Investigations | Crosscutting Concept: | Patterns |
| Title: | <i>Mars Colony STEM</i> | | | Room: | 324 |
| Presenter(s): | Joanna Beck, Timothy Lees, Katie Williams | | | | |
| Description: | Integrating STEM through an IB project about landing and living on Mars | | | | |
| Level: | Middle | Strand: | Integrated STEM Education | | |
| Content: | Earth Science | Sci. & Eng. Practice: | Planning & Carrying Out Investigations | Crosscutting Concept: | Structure and Function |
| Title: | <i>Engineering the Periodic Table, An Arts Integration Unit</i> | | | Room: | Ballroom E |
| Presenter(s): | Stanley Adkins | | | | |
| Description: | Students collaboratively construct a three-dimensional visual representation of the periodic table. | | | | |
| Level: | High | Strand: | Integrated STEM Education | | |
| Content: | Chemistry | Sci. & Eng. Practice: | Developing and Using Models | Crosscutting Concept: | Patterns |
| Title: | <i>I AM SOME BODY</i> | | | Room: | Grand Salon A |
| Presenter(s): | ROSLYNN STEWART | | | | |
| Description: | This activity include the science, technology, engineering, and mathematic components. Student groups plan, create, and construct the 11 human body system on a 20" paper boy or girl doll. | | | | |
| Level: | Middle | Strand: | Integrated STEM Education | | |
| Content: | Biology/Life Science | Sci. & Eng. Practice: | Developing and Using Models | Crosscutting Concept: | Systems and System Models |

Science for All: Putting the Pieces Together

Concurrent Session: Saturday 11:00-11:50

| | | | | | |
|----------------------|--|----------------------------------|---|------------------------------|---|
| Title: | <i>The Delightful STEM Science of Music and Sound Waves</i> | | | Room: | 309 |
| Presenter(s): | Dr. Tom Hsu | | | Vendor: | Ergopedia, Inc. |
| Description: | Ears-on exploration of sound using real and recorded instruments. Learn about resonance, wavelength, interference, voice recognition, and the science and technology of sound waves. | | | | |
| Level: | High, AP/IB | | | Strand: | Integrating Science Within the CCGPS |
| Content: | Physics | Sci. & Eng. Practice: | Constructing Explanations and Designing Solutions | Crosscutting Concept: | Patterns |
| Title: | <i>The Work of an Engineer</i> | | | Room: | Ballroom A |
| Presenter(s): | Amy Gilbert, Katie Wade | | | | |
| Description: | Do you need a "hook" for the year? This 5E teaches science and engineering practices that students can apply all year. | | | | |
| Level: | Middle, High | | | Strand: | Integrated STEM Education |
| Content: | Engineering | Sci. & Eng. Practice: | Planning & Carrying Out Investigations | Crosscutting Concept: | NA |
| Title: | <i>STEMming out in AP Science & Electives</i> | | | Room: | Ballroom B |
| Presenter(s): | Amy Coleman, Lauren Ferguson, Lauren Horton, Tasha Young | | | | |
| Description: | Are you looking for fun and exciting STEM activities to integrate in your class? Come join us and get ideas! FREE handouts to the first 25 attendees!! | | | | |
| Level: | High, AP/IB | | | Strand: | Integrated STEM Education |
| Content: | General | Sci. & Eng. Practice: | Planning & Carrying Out Investigations | Crosscutting Concept: | NA |
| Title: | <i>STEM overhaul for your classroom</i> | | | Room: | Ballroom C |
| Presenter(s): | Patti Grammens, Lilly Turpin | | | | |
| Description: | Two dynamic educators will lead you through ways to incorporate STEM into your classroom | | | | |
| Level: | Upper Elementary, Middle, High, Pre-service/Early Career Teachers | | | Strand: | Integrated STEM Education |
| Content: | General | Sci. & Eng. Practice: | Planning & Carrying Out Investigations | Crosscutting Concept: | Structure and Function |
| Title: | <i>Get There Green: Transportation Challenge</i> | | | Room: | Ballroom D |
| Presenter(s): | Joseph Giunta, Gretchen Gigley | | | Organization: | Clean Air Campaign |
| Description: | The environmental science competition puts high school students in the shoes of a transportation planner as they investigate air quality, traffic, and behavior choices. | | | | |
| Level: | High, AP/IB | | | Strand: | Integrated STEM Education |
| Content: | Environmental Science | Sci. & Eng. Practice: | Planning & Carrying Out Investigations | Crosscutting Concept: | Cause and Effect: Mechanisms and Explanations |

Science for All: Putting the Pieces Together

Concurrent Session: Saturday 11:00-11:50

| | | | | | |
|----------------------|--|----------------------------------|---|------------------------------|---------------------------|
| Title: | <i>Science Virtually</i> | | | Room: | Grand Salon B |
| Presenter(s): | Belynda Songer | | | | |
| Description: | Science (STEM) teaching in a virtual world. Live synchronous lessons for full time online students or integrated online for traditional classrooms. | | | | |
| Level: | Middle, High, AP/IB, College | | | Strand: | Integrated STEM Education |
| Content: | Biology/Life Science | Sci. & Eng. Practice: | Constructing Explanations and Designing Solutions | Crosscutting Concept: | Structure and Function |
| Title: | <i>Sisters in Science</i> | | | Room: | Magnolia B |
| Presenter(s): | Tynisha Harris | | | | |
| Description: | Sisters in Science- Promoting gender advancement in science-related fields by increasing the number of female role models girls encounter and creating an environment that promotes curiosity. | | | | |
| Level: | Lower Elementary, Upper Elementary, Middle, High, Pre-Service, Early Career Teachers | | | Strand: | Integrated STEM Education |
| Content: | General | Sci. & Eng. Practice: | Planning & Carrying Out Investigations | Crosscutting Concept: | NA |
| Title: | <i>Coastal Connections</i> | | | Room: | Magnolia CD |
| Presenter(s): | Vicki Albritton | | | | |
| Description: | Explore how to integrate technology and the outdoors to teach about our Georgia coast and its creatures. | | | | |
| Level: | Middle | | | Strand: | NA |
| Content: | Environmental Science | Sci. & Eng. Practice: | NA | Crosscutting Concept: | NA |

Science for All: Putting the Pieces Together

Make Yourself at Home: Macon Hospitality Information

DRAFT

Science for All: Putting the Pieces Together

Exhibitors List and Map

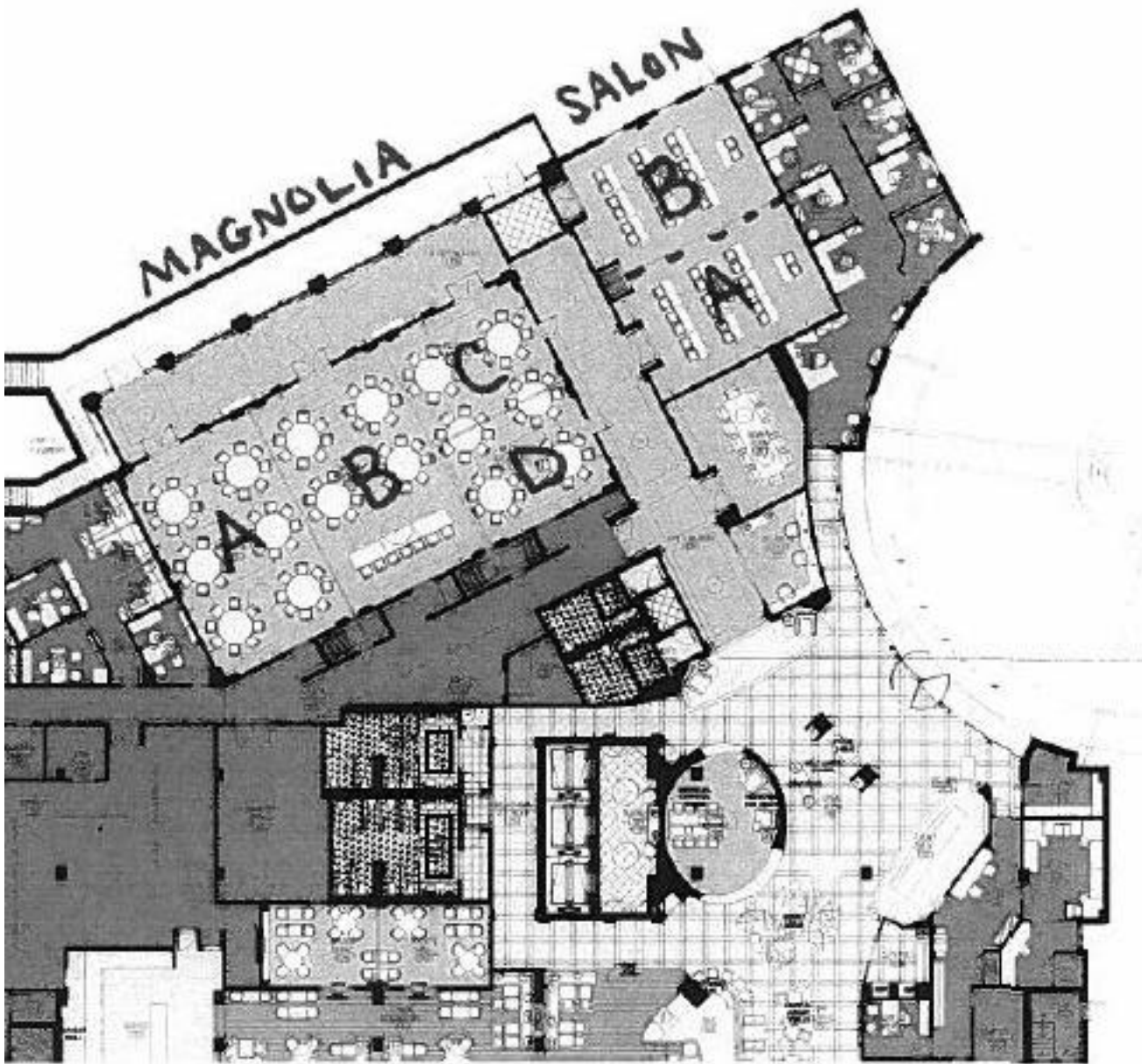
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Science for All: Putting the Pieces Together

Meeting Room Maps

Marriott Meeting Rooms

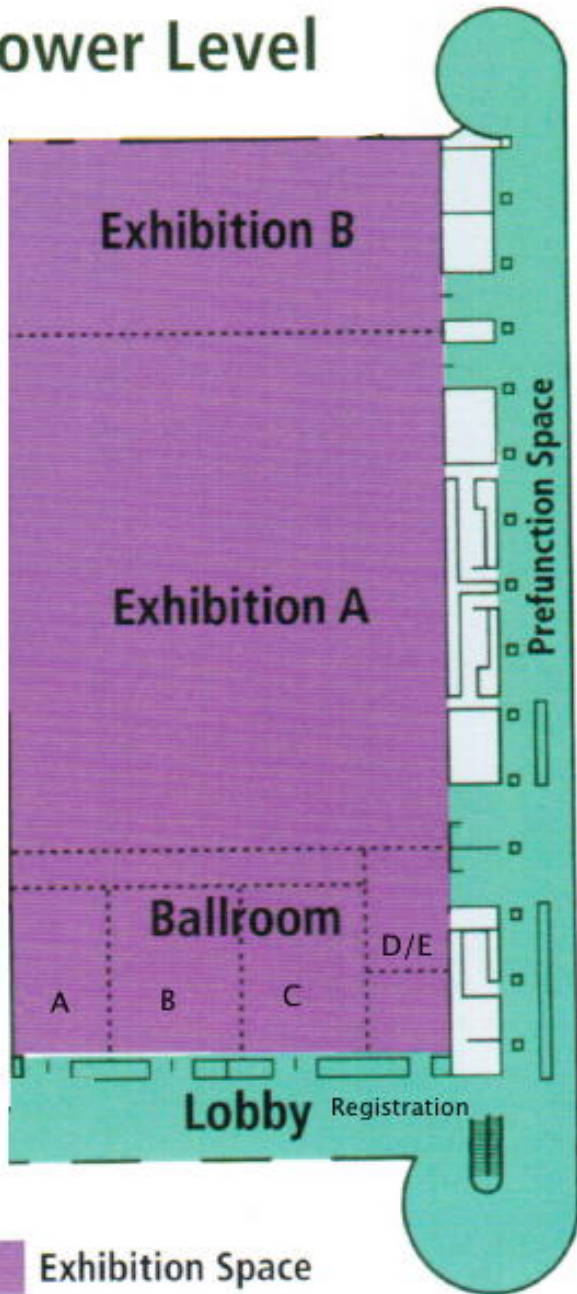
Macon Marriott City Center



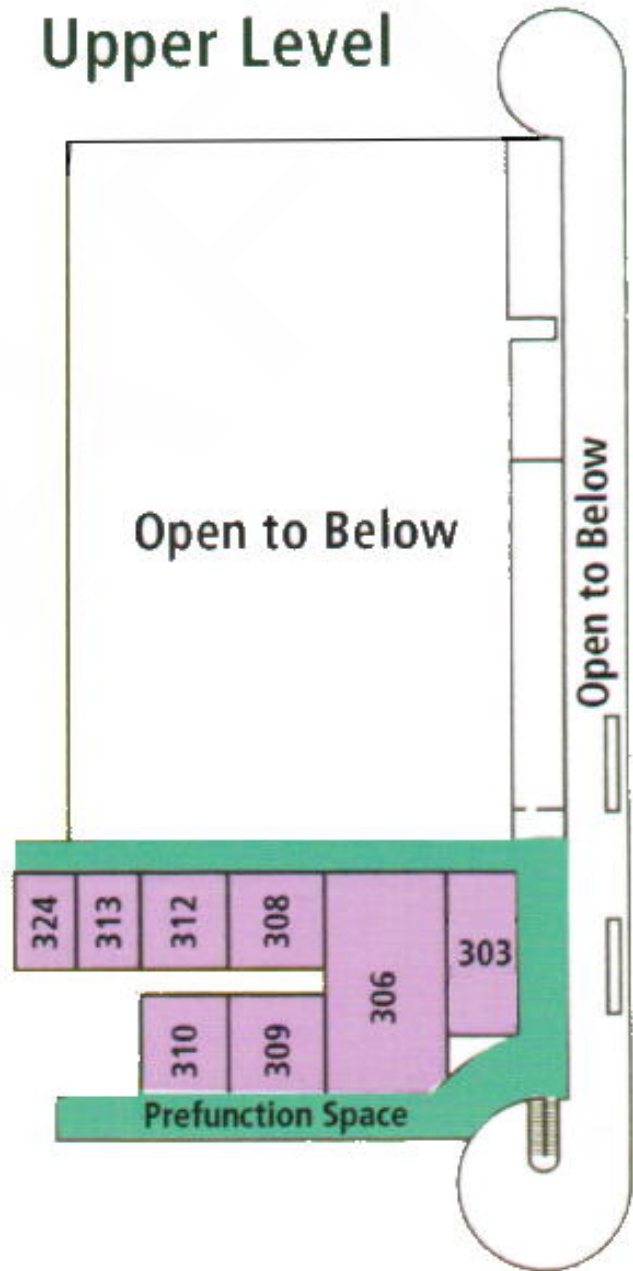
Science for All: Putting the Pieces Together

Conference Center Meeting Rooms

Lower Level



Upper Level



- Exhibition Space
- Meeting Rooms

Science for All: Putting the Pieces Together

Personal Scheduler

Thursday Planner

| Time | Room | Session |
|-------|--------------------|---|
| 8 am | | |
| 9 am | | |
| 10 am | | |
| 11 am | Exhibit Hall B | Featured Speaker: Dr. Marshall Shepherd |
| 12 pm | | |
| 1 pm | | |
| 2 pm | | |
| 3 pm | | |
| 4 pm | | |
| 5 pm | Registration Lobby | District Meet & Greet |

Friday Planner

| Time | Room | Session |
|----------|-----------------|--|
| 8 am | | |
| 9 am | | |
| 10 am | | |
| 11 am | Exhibit Hall B | GSTA Annual Meeting |
| 11:30 pm | Exhibit Hall B | Featured Speaker: Dr. Stephen Pruitt |
| 1 pm | | |
| 2 pm | | |
| 3 pm | | |
| 4 pm | | |
| 5 pm | Exhibit Hall | Exhibit Hall Door Prizes – Must be Present to Win! |
| 6:30 pm | Armory Ballroom | Awards Banquet – Ticket Required |

Saturday Planner

| Time | Room | Session |
|-------|------|---------|
| 8 am | | |
| 9 am | | |
| 10 am | | |
| 11 am | | |