Science is FUNdamental, Relevant and Engaging!

Centripetal Force

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Gravity

Florida Association of Science Teachers
Annual Conference

DoubleTree by Hilton Hotel at the Entrance to Universal Orlando
October 20—22, 2016
**PRESIDENT’S WELCOME**

*Science is FUNdamental, Relevant and Engaging*

Welcome to the 2016 Florida Association of Science Teachers Conference in Orlando Florida! We are proud to be the state’s largest nonprofit organization hosting our conference in a **FUNdamental** city offering current, **Relevant** science trends, while **Engaging** our participants in current “best practice” methods.

As educators, dedicated to helping our students become tomorrow’s leaders in the scientific world, our FAST conference is a method to help us accomplish our goals. Over a three-day period, participants will be able to meet and confer with leaders in the scientific community as well as actively participate in cutting-edge workshops or captivating field trips.

With varied course offerings to expand current levels of expertise, this conference provides a quality educational experience for teachers at all grade levels from kindergarten to college. These specific content workshops are being offered all day Thursday until noon on Saturday by teachers, vendors and experts in the field to heighten our scientific awareness and pedagogy with lessons and/or materials. Participation in various workshops will insure updated lesson planning for a successful school year.

Thank you for attending our conference for your educational experiences!

Sharon Cutler  
FAST President

**2016 Conference Committee**

Barbara Rapoza  
Amy Trujillo  
Dr. Gary A. Yoham  
Dr. Erick M. Hueck  
Dr. Yvette Greenspan
Dr. Lara Croft is one of four SeaWorld Orlando staff veterinarians. In this capacity, Dr. Croft maintains the health of the park’s animals, including killer whales, dolphins, sea lions, seals, birds, fish, and turtles. She also provides medical support during rescue and rehabilitation of injured animals such as manatees, sandhill cranes, and sea turtles.

Croft began her career as an Associate Veterinarian at Alameda East in Denver, Co., the veterinary hospital featured on the Animal Planet television program, “Emergency Vets.” After leaving Colorado, Croft conducted a three-year residency in Aquatic Animal Medicine at the University of Florida.

Croft has done extensive research and published scientific papers on fish nutrition, harbor seal thiamine analysis, hand-rearing formula for orphaned manatee calves, and MRI in sea turtles. She has a special interest in pharmacokinetics and endocrinology in exotic animals.

Croft earned her bachelor’s degree in biology and environmental science from Tufts University and her doctorate of veterinary medicine from University of Florida. Croft resides in Orlando, has a six-year old daughter and a four-year old son, and is an avid football fan and trivia buff.

Every day, ocean life faces difficult challenges. As an aquatic animal veterinarian, Dr. Croft's job is to help sick and injured animals. In this key-note presentation, Dr. Croft will give insights on what she and other specialists do, and how you can help. Dr. Croft will discuss the technologies used in sea animal health care, and talk about the many special patients she works with daily at SeaWorld, and the rescues that she works with around the state. Dr. Croft will be giving tips on how we, as educators, can help promote responsible stewardship of our ocean resources. For more information on Dr. Croft's mission to help provide guidance and education, visit http://doctorlaracroft.com.
Social Events
Thursday, October 20, 2016

Pearson’s Pool Party

Thursday, October 20, 2016
Time: 5:30 PM – 7:30 PM
Cost-FREE! MUST REGISTER!
Location: Doubletree Pool Deck
Educators only, no guests!

FAST Members, get social and network with your peers!
PEARSON representatives will give two free drink tickets for beer, wine or soft drinks.
Social Events  
Friday, October 21, 2016

The Science of Wine  
PASCO Scientific Social

Friday, October 21, 2016  
Time: 5:00 PM – 6:30 PM  
Cost-FREE! MUST REGISTER!  
Educators only, no guests. No one under 21. Must show registration badge.

Come join the staff of PASCO Scientific as we showcase new software, hardware and exciting technologies as applied to the science of wine. Biology, Chemistry, and Physics specialists will be on hand to answer questions, demonstrate new technologies and enjoy this social opportunity with you. Take the opportunity to examine new tools for your classroom on this self-guided tour of science and wine. Former State STEM Director, Dr. JP Keener will be making the connections between the tools and the standards, and writer/author Tom Hsu will be available to sign his Essential Physics book, and discuss his new creation, “Essential Chemistry”. Wine and cheese will be provided for the first 150 attendees.
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Featured Speaker

Zipporah Miller

11:45 am—12:45 pm on Thursday in Room: Volusia

Zipporah Miller is one of the authors for the K-8 Pearson Interactive Science Program. Mrs. Miller also currently serves as the Senior Manager for Organizational Learning with the Anne Arundel County Public School System. Zipporah also served as the K-12 Coordinator for science in Anne Arundel County. In that role, she served as the team leader of the science team to oversee the K-12 science program. Mrs. Miller recently focused on developing a cadre of science instructional leaders who were well versed in the Next Generation Standards (NGSS) and assist in the transition to implement the NGSS in the county. Zipporah also continues to provide professional learning opportunities to teachers, administrators, higher education staff and informal science stakeholders on the Next Generation Science Standards, nationally. Prior to her appointment, Mrs. Miller served as the associate executive director for professional development programs and conferences at the National Science Teachers Association (NSTA). In this position, she led the Association’s efforts in providing professional development and e-learning opportunities to teachers of science nationwide. As the lead staff member for professional development, Mrs. Miller served as a reviewer during the development of Next Generation Science Standards. She also developed and delivered professional development to stakeholders in the science community on understanding the Framework for K-12 Science Education; A closer look at the scientific and engineering practices; NGSS and the Common Core State Standards; and Implementing NGSS in you District. Mrs. Miller has also served as the K-12 science supervisor and STEM coordinator for the Prince George’s County (MD) Public School System, the Program Administrator for the Howard B. Owens Science Center, Assistant Principal at Central High School, Science, Mathematics and Technology Coordinator at a Middle School and a High School Science Teacher. At the higher Education level, Mrs. Miller has served as an Adjunct Professor at Towson University. Mrs. Miller holds a master’s degree in school administration and supervision from Bowie State University, and a bachelor’s degree from Chadron State College. She is currently pursuing a doctoral degree at the University of Maryland College Park. Mrs. Miller’s passion for STEM education is evident in every aspect of her personal and professional life. She serves as a member of the Science in Everyday Experiences with her sorority, Delta Sigma Theta Inc. She is also continues to provide professional development on NGSS and STEM Leadership to educators nationally and internationally. Most importantly, Mrs. Miller is a wife to Peter Miller and a mother of two boys, David and Daniel.

FEATURED PRESENTATION 9:30am Friday in room: Osceola

What Is Science Bits?
It’s how students learn. It’s user-friendly. It will fire up your science class.

Science Bits provides teachers with lessons that help them teach science in a way that engages their students. Based on the constructivist 5E Instructional Model, Science Bits lessons use high quality multimedia interactive content to develop an inquiry-based, learning-by-doing method. Science Bits is the most awarded science curriculum to date with 16 international awards for Innovative Science Curriculum and e Learning. This is a unique presentation with contribution directly from Spain of Dr. Hector R. Martin founder of Newton Learning.

Presenters:

Walter Mackelburg
Dr. Hector Martin
1. Self-driving Cars and Standards Driven Content—Coding for Curriculum:
Robots are technically fascinating and also fun and engaging. With the new Florida Computer Science Standards, schools will be seeing more exciting applications of robotics and programming. This hands-on workshop presents technology-enhanced lessons focusing on force and motion using some incredible classroom-scale robots. Using coding basics, Author and Physicist Tom Hsu will explore essential kinematics ideas from the 6-12 curriculum—such as velocity, acceleration, motion graphing and vector analysis. This will get students doing physics like nothing else. Physics and physical science resources, web-links to interactive equations, access to assessment banks and signed copies of Tom Hsu’s newest text, “Essential Physics” will also be provided. There will be other give-aways to the winners of our various robotics competitions. As a thank you for joining us, each participant will be receiving a gift certificate to be applied towards a PASCO purchase—possibly the robotics module or physics demonstration tools. This is a $100.00 value—Limit first 25 to the workshop.

Time: 9:00am until 12:00pm  
Location: F2 and F3  
Cost: $5.00  
Maximum: 25  
Pre-registration is Required

2. Wine Tasting Chemistry—Spectroscopy and Acidity
Wines are described by their color and taste. In this workshop, we go beyond reds and whites and actually measure the color of the wine. Using spectroscopy, we will distinguish between different types of wine—applying principles and procedures that may be used in any classroom (with other types of samples of course!). We will be doing some wine tasting to see how sensitive we are to the acidity of a wine. Acidity is a word that is often used to describe the taste of wine, but what does it really mean? In this hands-on activity we can use PASCO’s Wireless Spectrometer, and pH sensor to explore the science of behind a favorite beverage. Wine (for testing and tasting), and cheese provided. As a thank you for joining us, each participant will be receiving a wireless pH sensor, and a personal license to the software: Sparkvue. This is a $150.00 value—Limit first 25 to the workshop.

Time: 1:00pm until 4:00pm  
Location: F2 and F3  
Cost: $5.00  
Maximum: 25  
Pre-registration Required

Project WILD is a national program sponsored in our state by the Florida Fish and Wildlife Conservation Commission (FWC) and housed within the Florida Youth Conservation Centers Network. The mission of Project WILD is to provide wildlife-based conservation and environmental education that fosters responsible action toward wildlife and natural resources. This 3.5-hour K-12 Project WILD workshop will provide participants with supplemental standards-based, scientifically sound curricula that make use of the learner’s natural curiosity about wildlife. Each participant will receive a free activity guide with over 150 lessons.

Time: 8:00am until 12:00pm  
Location: D3  
Cost: free  
Maximum: 25  
Pre-registration Required
4. Mad Science

Join Mad Science in learning how to incorporate STEM in your classroom on a daily basis! Mad Science is on a mission to spark the imagination of children everywhere with exciting, live, and interactive programs that instill a clear understanding of what science is really about, and how it affects the world around us. Chief Mad Scientist Kylie Koscoe will show you how to make Science fun and hands-on for your students, using easy to find materials and everyday Science concepts.

Time: 1:00pm until 3:00pm
Cost: Free Pre-registration required
Location: D1
Maximum: 20

5. Brevard Elementary Make and Take

Teachers from Brevard County will share their experience and knowledge by demonstrating and showcasing hands-on science activities from grade levels Kindergarten through 6th grade. Many of the lessons can also be modified for multiple grade levels. Lesson plans will be provided. The format for this session is open allowing teachers to visit some or all of the stations according to their needs during the time frame given. It also provides the participant with the opportunity to ask questions of the presenters.

All of the lessons being presented have been reviewed to meet certain criteria. All lessons are standard based, relevant, and easy to implement. During this session just a portion of the whole lesson is being demonstrated and participants will walk away with a tangible item relating to the lesson as well as the full lesson.

Presenters are all science leaders, teachers and /or part of the Brevard Science Cadre. They come with a wealth of knowledge and experience as they work directly with students and teachers within the district and throughout the state.

Time: 2:00pm until 4:00pm
Cost: Free Pre-registration required
Location: C1, C2 and C3
1. SeaWorld Orlando

During this fun one-hour program, teachers are invited to expand their knowledge of marine science, collect fun lessons to conduct with students and get ideas about how to integrate science into the classroom. This program allows you to talk with an education professional, visit behind-the-scenes areas and learn what it takes to work in a world-class zoological facility. Wear comfortable walking shoes and bring your cameras for this informative adventure! Teachers will receive a goodie bag and will be given time to explore the park on their own.

Dress: Workshop will primarily occur outdoors, and involves a light to moderate amount of walking. Wear comfortable walking shoes and bring your cameras!

Time: 9:00am until 4:00pm  
Fee: $10.00  
Lunch on Your Own  
Minimum: 20  
Maximum: 40

2. Wild Florida Airboat and Park Tour

"When it comes to airboat eco tours, there is simply no comparison to Wild Florida. Just a short drive from the greater Orlando area, we offer beautiful day tours, relaxing sunset tours and exciting night tours for guests of all ages. Travel deep into the protected swamps, marshes and rivers that make up the Central Florida Everglades. Get an in depth look at the gators, birds, eagles, trees and plants that can be found in our beautiful wetlands. We guarantee you won’t see any development, homes, or signs of human life. Come see for yourself how good it feels to be in the middle of nowhere.

After the tour explore our amazing gator and wildlife park full of zebras, watusi, deer, sloths, lemurs and monster alligators. Visit the tropical bird aviary, hands-on alligator demonstrations, gift shop, 500 ft. sightseeing dock and nature trails. Enjoy our delicious BBQ from our very own Chomp House Grill with pulled pork, smoked chicken, burgers, fried alligator and even frog legs! Day or night, we are prepared to offer an experience you will never forget."

Dress: Outdoors! Sunscreen!  
Fee: $60.00  
Lunch Included  
Minimum: 20  
Maximum: 52
Congratulations to the Following:

2016 FAST Awards

Anita Ventura
Outstanding Elementary Teacher

Dr. Suzanne Banas
Outstanding Middle School Teacher

Tiffany Oliver
Outstanding High School Teacher

Dr. Janice Novello
Outstanding Informal Educator

Florida 2016 K-6 Finalists Presidential Awardees for Science Teaching

Alicia Foy
Science
Hidden Oaks Elementary
Palm Beach

Alexandra Laing
Science
JC Mitchell Elementary
Palm Beach
Please note: As you review the sessions on the following pages you will see that the sessions are in different rooms as listed (see map for details; can be Letters: C, D, E, or F and Counties Names. Rooms C thru F are in the Universal Center and the rest of the rooms are located around the Vendor Exhibition Hall.

The abbreviations you will see are E (Elementary), M (Middle), H (High), C (College) and A (All—General). Pedagogy is not specifically identified but include “Making Connections across the Curriculum”, “Differentiating Instruction”, “Science and Literacy” and “Research and Applications in Technology”. There is something for every interest. Many wonderful presentations were proposed and accepted.

Example:

<table>
<thead>
<tr>
<th>Roller Coaster Physics</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>EM</td>
<td></td>
</tr>
<tr>
<td>Jane Doe, Elementary Charter School</td>
<td></td>
</tr>
</tbody>
</table>

The title of the presentation is “Roller Coaster Physics” and is at the elementary and middle level. The session is in Room C. The name of the Presenter(s) is Jane Doe.
Project WILD: Nature-based Interactive Lesson Plans
Anita Forester, Florida Project WILD Coordinator (former middle school science teacher)

Get WILD and keep Getting WILD for you and your students! Nature is the best teacher. Receive interactive instruction and support materials in this mini version of a Project WILD Educator Workshop.

Self-driving cars and Standards driven content – coding for curriculum
Dr. JP Keener, PASCO Scientific

Robots are technically fascinating and also fun and engaging. With the new Florida Computer Science Standards, schools will be seeing more exciting applications of robotics and programming. This hands-on workshop presents technology-enhanced lessons focusing on force and motion using some incredible classroom-scale robots.

MacGyver Chemistry
Dr Eugene Smith, Professor of Chemistry, Florida Atlantic University

STEM educators need access to technology and resources for professional development. This presentation will focus on how to incorporate inexpensive technology in the chemistry classroom.

Modeling Instruction for Physical Science
Kevin H. Thomas, Jonathan Hall, and Andrea M. Rediske, Science Education Doctoral Student, University of Central Florida (UCF)
Richard Pemble, Osceola High School

 Participants will work in a guided, group inquiry lesson using Modeling Instruction. This lesson introduces students to scientific investigation, measurement, and interpretation of data.

Digital STEM and Sports Modules
Brittany Ferguson and Mathew Kirouac, Senior Implementation Managers, EverFi

EverFi’s interactive STEM modules address ~100 4-8th grade math and science standards. Participants will gain free access and other resources for their classroom.

Gardening with Elementary Students
Cheryl Pahl, Intermediate Gifted Teacher, Hunter’s Green Elementary

Teachers will learn how to start a school garden with students, learn the benefits of gardening, and learn how to get your garden funded.

Integrating Technology Seamlessly into the Secondary Science Classroom
Bryan Turner and Matthew Purvis-Milwee Middle School - Seminole County Public Schools

Explore scientific phenomena using a variety of digital tools and apps, and create digital summative and formative assessments in your classroom.

How Cold is Cold?
Maureen Mack, Science Teacher, Heritage Middle School

After reading a short story, participants will create and carry out an experiment to make connections between concepts of thermal energy, temperature and heat.

Phundamental Physics of Phabulous Earth
Polly Burkhart, Regional Science Coach, Polk County Schools, and Kim Rex, District Science Coach, Polk County Schools

Earth’s uniqueness is due to the properties of matter and energy. This energetic session connects physics and Earth processes; physics is “phundamental”!
Citizen Science and Service Learning Opportunities for Students in the Florida Keys  
M, H  Broward  
Sarah Egner, Director of Research and Curriculum Development, Marine Resources Development Foundation (MarineLab)  
MRDF’s MarineLab program offers an array of marine science based citizen science and service learning opportunities for middle and high school students.

What's on the Bottom: Practicing the Nature of Science  
E, M, H  D1  
Malcolm B. Butler, Professor of Science Education, University of Central Florida  
STEM educators need access to technology and resources for professional development. This presentation will focus on how to incorporate inexpensive technology in the chemistry classroom.

5th Grade Sea Turtle Curriculum  
E, M  Dade  
Maia McGuire, Extension Agent, University of Florida/IFAS Extension  
Learn about a new (freely downloadable) sea turtle book written for 5th grade and try out some of the activities from the accompanying lesson plans.

Engaging students in scientific practices with a responsive teaching approach  
E, M  Duval  
Lama Jaber, Assistant Professor in Science Education, Florida State University  
This interactive session will provide participants with tools to become more responsive in their teaching, as a way to promote students’ engagement in scientific practices.

5E is for STEM  
E  Florida  
Sonia Larrabee, Math/Science Coach at L.S. McInnis Elementary School in Volusia County  
Explore, Engage, Explain, and Elaborate with STEM! Participants will use their learning and knowledge about magnets and the magnetic field to construct a magnetic toy that could be sold in our NSTA gift shop! Cool, huh?!

Real World STEM Lessons: Model Eliciting Activities for Elementary Students  
E  Hillsborough  
Christine Angel Danger, Math/Science Coordinator for Hillsborough County School, Dr. Deborah Kozdras (University of South Florida)  
Discover how educators use Model Eliciting Activities (MEA's) to teach STEM concepts, infuse literacy, and engage students in higher order discussions and processes.

Cosmetic Chemistry: Lotions and Potions  
E  Indian River  
Margaret Mattaliano, College Reach-Out Program Flagler College, Emily Blum, Math Tutor and T.A. Flagler College, Abbey Gooden, Science Education Student Flagler College, Sally Blake, Professor Flagler College  
Participants will prepare three types of lip-gloss, develop marketing plan and then simulate a consumer test to determine product most likely to sell.

Evolution for Middle School Educators  
M  Pinellas  
Bertha Vazquez, Director, Teacher Institute for Evolutionary Science, RDFRS  
The Teacher Institute for Evolutionary Science informs teachers about Florida’s Evolution standards in order for them to confidently cover the topic in their classrooms.

Tesla Tales  
M, H  Sarasota  
Carlos R. Villa, K-12 Outreach Coordinator; National High Magnetic Field Laboratory  
Join us in a journey of Electromagnetism! Recreate the experiments of the world’s greatest scientists in your classroom to trace their path of discovery.

Engaging students in the engineering design cycle using 3D printing technology  
M  St. Johns  
Jennifer Schellinger  
Participants will engage in aspects of the “Design a fidget using 3D printing technology” lesson and will consider instructional supports needed to facilitate student learning.

Harnessing the maker movement to reimagine teaching and accelerating learning across STEAM  
E, M, H, C, A  Volusia  
Laylah Bulman and Daniel Rodriguez  
Harnessing the maker movement to reimagine teaching and accelerating learning across STEAM.
Zipporah Miller is one of the authors for the K-8 Pearson Interactive Science Program. Mrs. Miller also currently serves as the Senior Manager for Organizational Learning with the Anne Arundel County Public School System. In that role, Mrs. Miller is responsible for designing, implementing and evaluating professional learning opportunities for teachers and developing teacher leaders for the entire school system. More on page 7

Wine Tasting Chemistry-Spectroscopy and Acidity
M,H
Dr. JP Keener, PASCO Scientific

Wines are described by their color and taste. In this workshop, we go beyond reds and whites and actually measure the color of the wine. Using spectroscopy, we will distinguish between different types of wine – applying principles and procedures that may be used in any classroom (with other types of samples of course!). We will be doing some wine tasting to see how sensitive we are to the acidity of a wine. Acidity is a word that is often used to describe the taste of wine, but what does it really mean? In this hands-on activity we can use PASCO’s Wireless Spectrometer, and pH sensor to explore the science of behind a favorite beverage. Wine (for testing and tasting), and cheese provided. As a thank you for joining us, each participant will be receiving a wireless pH sensor, and a personal license to the software: Sparkvue. This is a $150.00 value – Limit first 25 to the workshop.

Mad Science: Making STEM Edu-taining!
E,M
Kylie Koscoe, Chief Mad Scientist, Mad Science of NE Central FL

Join Mad Science in learning how to incorporate STEM in your classroom on a daily basis! Mad Science is on a mission to spark the imagination of children everywhere with exciting, live, and interactive programs that instill a clear understanding of what science is really about, and how it affects the world around us. Chief Mad Scientist Kylie Koscoe will show you how to make Science fun and hands-on for your students, using easy to find materials and everyday Science concepts.

Schedule for Success
H
Dave Masony, Assistant Principal and Mark James, Head of Science Department

Through changing the paths that students schedule their science classes Biology scores should improve and the students are better served based on their academic abilities.

A Relevant and Engaging Curriculum: Socioscientific Issues in Science
M,H
Karrie Wikman, Secondary Science Curriculum Specialist, Polk County Public Schools

Support functional scientific literacy and consequently prepare learners to purposely and intentionally navigate the world around them through socioscientific issues in science.

The #1 Strategy for Teaching FL State Standards Without A Textbook
E
Alanna Russ

The teachers will be provided with sample activities to include in an interactive notebook that covers all FL science standards.
1:00PM—1:50PM Concurrent Session 3

Teaching Science Content the STEM way
E Florida Keys
Michele Wiehagen, District Resource Teacher, Title I, Hillsborough County Public Schools and Dr. Jeni Davis, Assistant Professor, University of South Florida

This workshop will provide participants with a lesson plan template to teach science content through STEM education. The model lesson will target 3rd grade light behavior.

Hurricane Warning! Navigating the Engineering Design Process in Elementary School
E Hillsborough
JoAnn Archer, STEM Lab Teacher, Stenstrom Elementary, SCPS and Lynda Roche, Kindergarten Teacher, Stenstrom Elementary, SCPS

Participants will learn to manage these constraints while solving a real world problem using a flexible format that guides them through the stages of the Engineering Design Process. Participants will leave with a lesson plan and tips for applying the lesson in their classroom as well as across grade levels.

Multi-Tasking in Your Science Classroom: Using Model Eliciting Activities to Meet Common Core and Next Generation Science Standards
E Indian River
Melissa Parks, faculty, Stetson University

Let’s explore activities that enable us to integrate science and Common Core standards and allow students to have some FUN while learning.

Increasing the cognitive demand of tasks that integrate science content and scientific practices
M, H, A D3
Dr. Hannah Hiester, Masters student, Florida State University and Dr. Miray Tekkumru-Kisa, Assistant Professor, Florida State University

This session will introduce and provide the opportunity to practice strategies to increase the cognitive demand of tasks that integrate science content and scientific practices.

2:00PM—4:00PM Workshop #5

Rube Goldberg and Rubber Bands
M, H Pinellas
Ryan Trott, Science Teacher, Gulliver Preparatory School/Miami, FL, It's About Time, Inc.

Can you design a Rube Goldberg Machine? Use the 7E Learning Cycle to solve the problem. Learn engineering design principals to improve student achievement.

Explore before Explain?!?
E, M, H St. Johns
Dr. Marjorie Miles Dozier, District Science Coach, Polk County School and Ms. Denise Trzcinski, School-Based Science Coach, Polk County School

In this presentation, we will model how to incorporate Explore-Before-Explain into your classroom to increase student engagement, content knowledge and achievement levels.

Ready, Set, Get Your Geek On!!!
M, H Volusia
Michelle Kirk, Ward’s Science & Sargent-Welch

Start your engines! Hopefully, you and your pit crew properly designed, built, and inspected your car so a checkered flag is in your future.

Brevard Elementary Make and Take
E C1, C2, C3
Beth Conti, teacher, Quest Elementary School and other members of: Brevard County Science Leadership and Training Cadre

Join the Brevard County Science Leadership and Training Cadre for a hands-on Elementary Grades K-6 Make and Take Experience. Open format. Lesson plans included.
Biology EOC Review - Photosynthesis and Cellular Respiration
H Broward
Mickey MacDonald and Christy Barba, P.K. Yonge DRS
Do you need a good review for energy metabolism in plants and animals? Join us and participate in this hands-on review of photosynthesis and cellular respiration.

Cell Phone Physics
M,H Dade
John Clark, Science Teacher, Deltona High School
In two different lessons learn how wave behavior and the Doppler effect help track your cell and get you pulled over for speeding.

Got Evidence?
E Florida Keys
Shana Tirado, Elementary Science Supervisor, Hillsborough County Public Schools and Michele Wiehagen, Elementary District Resource Teacher Science, Hillsborough County Public Schools
This interactive session will put participants through a hands-on lesson, with the use of an online resource, literacy strategies - notebooks, vocabulary, reading and argumentation.

Demystifying the 5E with STEMscopes: Your Digital Solution for Engaging Science Instruction
E Hillsborough
Pam Caffery, Implementation and Curriculum Specialist, Accelerate Learning-STEMscopes
STEMscopes is an instructional solution designed to bring inquiry-based, hands-on engaging learning paired with the 5E framework and aligned tightly to the Florida standards.

Leadership in Climate Destabilization Education
E,M,H,A Indian River
Dr. Janice Novello, University of Phoenix, FAST, NOAA
See what NOAA resources, a trip to the White House and a local contest have in common. Students use real problems to get involved and take ownership in initiating STEM projects that may impact climate change.

Got Lactase? The Co-Evolution of Genes and Culture
H D3
Tim Guilfoyle, Science Teacher, Phillip O. Berry Academy of Technology (Charlotte, NC) and HHMI Biointeractive Ambassador
Explore activities on lactose persistence/intolerance connecting evolution, genetics, and culture with free resources from HHMI's-BioInteractive featuring hands-on activities, graph/data analysis and video to engage students.

Science Research: Eligibility for STEM Competitions
M,H Pinellas
Nancy Besley, Executive Director; Sharon Suits, SRC Chairperson; Kim Rex, D & S Chairperson - State Science & Engineering Fair of Florida (additional committee members will also be present)
Join members of the State Science & Engineering Fair (SSEF) Scientific Review and Display & Safety committees in a discussion of how to prepare the student researcher for eligibility in science competitions affiliated with the Intel ISEF and SSEF of Florida.

Integrating STEM through the Internet Science and Technology Fair (ISTF): 2016 Update
E,M,H St. Johns
Dr. Robert M. Everett, Associate Professor, University of Central Florida
Elementary, middle, and high school teachers will learn about the Internet Science and Technology Fair (ISTF) and how it integrates STEM initiatives.

STEM Perfect Circuit
E,M Volusia
Michelle Kirk, Ward's Science & Sargent-Welch
Batteries included! Enlighten your students about electronics and introduce the concepts of motors, robotics, and machines. This 5E lesson is guaranteed to be STEMtastic!
Identify Patient Zero of a Zombie Apocalypse!
H,C  Broward
Sherri Andrews, Curriculum and Training Specialist/Bio-Rad Laboratories

This workshop will provide participants with a lesson plan template to teach science content through STEM education. The model lesson will target 3rd grade light behavior.

Inspiring Generation STEM
M,H  Dade
Wendy Peel, Texas Instruments

Forensics, Diabetes, Rare Genetic Diseases, Zombies and the all new TI-Innovator Launch Pad. Many resources readily available for immediate use in the classroom. Door Prizes!

Steps toward STEM
E,C  Duval
Yvette F. Greenspan, Ph.D., Adjunct Professor, Miami Dade College

Learn how you can implement STEM and NGSS through inquiry learning with strategies that will excite and encourage your students to love science and make your science teaching more effective.

Playin’ with Science
E  Hillsborough
Kimberly (Kym) McCann, Graduate student/science teacher, University of Central Florida/FUMC Child Development Center

This session is an interactive introduction to the “Playin’ with Science” play-based, developmentally appropriate scientific explorations curriculum for learners ages two to eleven.

Introduction to LEGO® MINDSTORMS® Education EV3 Robotics for Classroom Learning
E,M,H  Indian River
James Jones, LEGO Education Academy Trainer & Robotics Teacher

This session is designed for educators who are just getting started with LEGO® MINDSTORMS® Education EV3 or who are considering how to incorporate a robotics solution into the classroom. This session will cover where to begin when introducing LEGO® MINDSTORMS® Education EV3 into the curriculum and how to keep students engaged at all levels of understanding.

Facilitating Wrap-Up Discussions in Science for All Students
M,H  Pinellas
Shannon Gooden, Doctoral Student, Florida State University, Kirby Browning, Doctoral Student, Florida State University and Sherry Southerland, Professor of Science Education, Florida State University

Teachers will examine instructional strategies for science wrap-up discussions to support students’ connections of science investigations to big ideas in science.

Building Capacity for STEM Literacy - Rearranging the Acronym for Increased Outcomes
E, M, H  St. Johns
Dr. Milton Huling, Curriculum Specialist-Elementary Science, Polk County Public Schools and Dr. Jackie Speake, Senior Director of Science, Polk County Public Schools

Presentation and discussion will center on building capacity to integrate STEM through the 5E Inquiry Model.

Pearson’s Pool Party Social

Date: Thursday, October 20, 2016
Time: 5:30 PM – 7:30 PM
Cost-FREE! MUST REGISTER!
Location: Doubletree Pool Deck

FAST Members, get social and network with your peers! Pearson representatives will give two free drink tickets for beer, wine or soft drinks.

Educators only, no guests.
Must show registration badge.
8:30AM—9:20AM Concurrent Session 1

Hemoglobin Crisis - The Genetics Behind Sickle Cell Disease
H,C
Mohammed Patel, Biomedical Instructor/AP Biology Instructor, Cypress Creek HS (Orange County Public Schools)

Using candy, participants will simulate the inheritance patterns (genotypes) for sickle cell disease.

CPO’s new Link Wind Turbine Learning Module – A STEM Approach to Engineering and Design
M,H
John Marinake, Regional Sales Manager, Frey Scientific/NeoSCI/CPO Science

CPO’s new Link Wind Turbine learning module lets students learn in a tablet based learning environment and engineer a wind turbine. Students build, test, and revise their designs. Link uses STEM activities and an NGSS approach giving students an understanding of how to apply the Engineering Cycle in science class.

Terrific "hands On-Minds On" Science Games and Puzzles for Middle Schools
M
Rodelio Abuan, Teacher, Sam Houston MSTC, Houston ISD

Teachers will play and learn how to make their own 10 unique, engaging, and powerful instructional tools (games, puzzles, and station activities) that can be used in different topics, grade levels, and class sizes.

Hands-on Human Ecology for the Next Generation
M
Yvonne Fonnett, Teacher Intern Coordinator, University of Central Florida

Discover innovative activities for the NGSS that explore population growth, carrying capacity, human impacts on the environment and paths to sustainability.

Miracle of Science
E
Christina Wilson, President of Miracle of Science

45 minute assemblies consist of 10 science demonstrations using liquid nitrogen, dry ice, and dramatic chemical reactions that emphasize Florida standards. Some schools obtain shows for FREE*.

Light But Strong (NASA EDC)
E,M,H
Duval
Dr. Lester Morales, NASA Education Specialist
Engineering Design Process at it best with NASA’s Engineering Design Challenge: Light but Strong Mobile Launcher

Can We Fly?
H
Mr. Alexis Harry

What does it take to make and object fly? How does airplanes work? This session will help teachers understand the forces of flight how airplanes are able to fly.

Butterfly Gardening Using Native Plants
EM,H
F1
Nancy Sale, M-DCPS Teacher Lillie C. Evans K-8 Center

Butterfly Bonanza provides a roadmap to success for implementing a native butterfly habitat. Take home a starter kit that will enable you to immediately set up a habitat at your school. Door prizes and a wealth of digital data.

Using Classical Languages to Improve Content Vocabulary Knowledge
EM
F2
Janet Sweat, TSC k-12 science, Columbia County School District and Keith Stavig, TSC STEM, Suwannee County School District

We will learn vocabulary strategies utilizing classical languages to help students learn difficult content and academic vocabulary.

Easy wireless data collection and analysis to support essential science standards
M,H
F3
Dr. JP Keener, PASCO Scientific

Enable more robust scientific investigations by incorporating rapid and simple data collection and analysis into your labs activities. Former DOE Director, Dr. JP Keener will be providing tips for success. Receive a wireless temperature sensor, and a personal license to the software: Sparkvue. This is a $150.00 value – Limit it first 25 to the workshop.
Helping Elementary Students To Think Like A Scientist
Melanie Desjardins, 5th Grade Science Teacher, Robert Louis Stevenson School of the Arts and Nadya Acevedo, 2nd Grade Teacher, Robert Louis Stevenson School of the Arts

This presentation helps teachers and students understand the fundamentals of designing a science experiment and the relationship between dependent and independent variables in engaging ways.

Come (Butter)fly With Me!
Grace Madden: First Year Teacher, Pizzo Elementary, Heather Palmer, Final Year Resident, USF, Emily Johnson, Final Year Resident, USF, Beth Landy: First Year Teacher, All presenters are current or alumni of the Urban Residency Teacher Program at University of South Florida.

Come fly with away with us to design your own butterfly garden as we discuss the integration of STEM and LTI in a second grade classroom!

Electric Art
Victoria Eng, Science Teacher, Pine Crest School Ft. Lauderdale

Using recycled materials, engineering principles, and creative design, the Electric Art project presents participants with a cross-curricular application of Physics infused with Art.

Hands-on Hydrogen
Penny Hall, Tom Lancione, and Susan Schleith, Florida Solar Energy Center / University of Central Florida

Explore hydrogen through a hands-on fuel cell activity that helps students understand hydrogen concepts and the hydrogen technologies currently in use.

STEM for Every Classroom
Melissa Woods, Technology Integrator, and Michelle Ferro, Title I Programs Instructional Trainer, both are from Brevard Public Schools

Participants will be engaged in an interactive learning environment where they will explore STEM through hands-on activities and online resources.

FEATURED PRESENTATION
9:30am Friday in room: Osceola
Walter Mackelburg
Dr. Hector Martin

What Is Science Bits?
It’s how students learn. It’s user-friendly. It will fire up your science class. Science Bits provides teachers with lessons that help them teach science in a way that engages their students. Based on the constructivist 5E Instructional Model, Science Bits lessons use high quality multimedia interactive content to develop an inquiry-based, learning-by-doing method. Science Bits is the most awarded science curriculum to date with 16 international awards for Innovative Science Curriculum and e Learning. This is a unique presentation with contribution directly from Spain of Dr. Hector R. Martin founder of Newton Learning.

Using the Scientific Method in a General Education Capstone Course
Terace M. Fletcher, Science Department Chair, Melissa Cueto, Instructor, Anthony D’Ascoli, Instructor, Barbara Garcia, Assistant Professor, Asha Stephens, Assistant Professor, All from West Coast University

A student-centered general education capstone course will be presented in an interactive format to those interested in open inquiry learning.

CPO’s new Chemistry Models Link Learning Module: Fun with Atom Building Games and the Periodic Table
John Marinake, Regional Sales Manager, Frey Scientific/NeoSCI/CPO Science

CPO’s new Link Chemistry Models module is a STEM and NGSS based approach that lets students experience innovative activities to learn atomic structure and the periodic table. We’ll use an experience- based learning environment with hands-on equipment to study bonding, isotopes, sub-atomic particles, ions, balancing equations, energy levels, and periodicity.
**Not-So-Organ-Ary**

**Cape Canaveral**

Beth Landy, Grace Madden, and Brianna Sortino, all are Alumni, University of South Florida

*StEm can be a daunting task, but in this presentation you will learn how we used a not-so-organ-ary StEm lesson to teach both fifth and second graders about the human body’s organs and their function. We will also explain how we used a lesson study to improve our lesson and in turn increase our learning as well as the student learning.*

**STEM: Investigating Touch Screen Devices**

**M**

Lew Blessing, Carolina Consultant

*Participants will design a stylus and then test and evaluate their design with other participants.*

**Vertical Alignment of Informal Science Estuary and Coastal Lessons to Florida State Standards**

**E,M**

Ben Rome, Education Assistant GTM NERR and Flagler College, Kenneth Rainer, Education Director GTM NERR, Emily Blum , T.A. Flagler College, Meg Matalliano, College Reach Out Program Flagler College, Mariana Quezoda, GTM NERR Intern and Sally Blake, Professor Flagler College

*Participants will be divided into small groups and work through two lessons which support integrated aligned standards. Each small group will have a guide or translator of science concepts to help teachers adapt the lessons for use in their individual classrooms. A series of lessons will be made available to participants for use in their schools, to include ESOL adaptations.*

**I Got Ampd**

**E**

Melissa Hays, Primary Learning Coach, and Mary Wilson, Transition Learning Coach, both from Ampersand School.

*Frankenstein Monster Anatomy*

**Make it CLEaR!**

**E**

Katie MacDonald, Pearson Science Specialist

*Use the CLaim Evidence Reasoning Framework to engage elementary students in meaningful scientific discussions that connect hands-on activities to the FLSSS.*

**Science Beyond the Fair: Using Project-Based Learning to Teach the “Nature of Science” NGSSS**

**H**

Renee Andrews, Assistant University School Professor, P. K. Yonge Developmental Research School

*How do you facilitate manageable, full inquiry studies? This session suggests ways to provide fully individualized inquiry in the lab or field though project-based learning.*

**Phun With Physics**

**M**

Tracy Smith, Science Teacher, Bak Middle School of the Arts, Palm Beach County

*Let's play! A hands-on workshop providing low budget physics activities that will engage the middle school science student.*

**Easy wireless data collection and analysis to support essential science standards**

**M,H**

Dr. JP Keener, PASCO Scientific

*Enable more robust scientific investigations by incorporating rapid and simple data collection and analysis into your labs activities. Former DOE Director, Dr. JP Keener will be providing tips for success. Receive a wireless temperature sensor, and a personal license to the software: Sparkvue. This is a $150.00 value – Limit first 25 to the workshop.*

**Electric City: A Project-based Unit**

**E,M**

Alicia Foy, STEM Teacher Palm Beach County

*Fifth grade students designed and built Electric City using renewable resources to create electricity to power the town. Come check out their work!*
Easy 5E for the middle school classroom

Heather Miller, MSP Grant Manager, Osceola School District and Rebecca Lucas, Science Teacher on Assignment, Volusia School District

Engage students through collaboration and hands-on science while staying focused on the NGSS through easy-to-use 5E lesson plans.

STEM Integration - Struggling Reader Support

Amanda Soto, Secondary STEM Specialist Orange County Public Schools

Support struggling readers in science classrooms with navigating science and technical text in a purposeful way. Bring text to life for students’ engagement and enjoyment.

Infusing LAFS into Science

Tammy Barnes, Instructional Specialist Broward County School District

Teachers will learn reading and writing strategies which will support students in overcoming the obstacles faced in a rigorous science classroom.

Solar Cookers: Thinking Outside the Box (Oven)

Susan T. Schleith, Director of K-12 Education Programs, and Penny Hall, Florida Solar Energy Center, University of Central Florida

Discover building techniques, low and no-cost materials and how to use cookers in the classroom. Attendees receive design plans and activities aligned with science standards. Prizes!

Digging Through the Layers of Soil

Amy Guevara, Nutrients for Life Foundation

Get your hands dirty in this workshop to learn about how properties of soil affect the environment. With lots of free resources, participants will dig it!


Lindsay Guntner, Science Teacher, Paul R. Wharton High School

The S.H.I.N.E. (Science Helping Inspire New Energy) Program at Paul R. Wharton High School, Tampa was designed to provide opportunities for upper-level science students to serve in a mentorship capacity to all introductory-level Biology students preparing for the EOC assessment.

Forensic Labs on the Cheap

Jay Rosenberg

Two inquiry based labs will be presented. The first lab will discuss blood typing which is great for EOC biology and forensic. The second is an Archimedeas approach to determine density without determining the mass or volume of the tested object. No kits necessary to complete labs. All information for labs will be shared.

Terrific “Hands On-Minds On” Science Games and Puzzles for Elementary

Rodelio Abuan, Teacher, Sam Houston MSTC, Houston ISD

Teachers will play and learn how to make their own 10 unique, engaging, and powerful instructional tools (games, puzzles, and station activities) that can be used in different topics, grade levels, and class sizes.

Pollution Solution Machines

Lisa Knapp, STEM Lab Teacher, Indiantown Middle School, Kathleen Moeller, and Crystal Hallee, Learning Lab Teacher, both from Warfield Elementary School

Attendees will be provided with the opportunity to learn about water pollution and water runoff. Then, acting as students themselves, attendees will be posed an Engineering Design Challenge to “Design and create a machine to help clean our waterways.” Resources and materials will be provided to complete the project.

STEAMing it Up! A Cross-Curricular Collaborative Approach to Learning 3-5

Teri Barenborg, STEAM Director, Lauren Monroe, Instructional Coach, Tari Sexton, Assistant Principal, Michell Power, 5th grade teacher, All from St. Lucie Schools

STEAM 3rd-5th grade lessons designed with a data driven focus to support teachers in the classroom and engage students through the use of problem solving and critical thinking.
Plant vs Dirt!
M E2
Mr. Alexis Harry
Can we grow plants without dirt? Hydroponics is a technology for growing plants without soil. This workshop gives teachers a foundation of this fascinating technology through the eyes of STEM.

Generating classroom "buzz" on mosquitoes and disease
E, M, H F1
Eric Jackson & Brian Murphy, Education Resource Specialists for the School District of Lee County and the Lee County Mosquito Control District
Mosquitoes and disease have recently captured the nation's attention. Educators will be provided with content and teaching resources to be used in their classrooms.

Gizmos 101
E F2
Tiffany Gomez, Teacher, Palm Springs North Elementary
Gizmos 101 will teach attendees the basic operations of accessing and utilizing resources available, including how to set up classes, import rosters and save lessons.

True Colors - Spectroscopy to investigate lights and solutions
H F3
Dr. JP Keener, PASCO Scientific
Spectroscopy is a powerful tool for studies in advanced coursework including AP Biology and AP Chemistry. In this hands-on workshop, you will learn how to incorporate spectroscopy into your labs. Former DOE Director, Dr. JP Keener will be providing tips for success. Receive a gift certificate to be applied towards a PASCO purchase – possibly a wireless spectrometer. This is a $100.00 value – Limit first 25 to the workshop.

Engineering Design Challenge: Pop Up Cards
E Florida Keys
Marian Gilmore, CEO, ESE Teacher, Silver Sands School, Jason Katz, President, 7th Grade Teacher, Crystal Lake Middle School and Janice Katz, Vice President, Kindergarten Teacher, Davenport School of the Art; 2016 Polk County Teacher of the Year Finalist. All are from STEAM Powered Learning
Pop-Up Engineering Cards takes an activity that most elementary teachers already do (Holiday Cards) and turns it into an Engineering Design Challenge, while integrating writing.

Successful Use of Argumentation in the STEM Classroom
A Hillsborough
Pam Caffery, Implementation and Curriculum Specialist, Accelerate Learning-STEMscopes
Skillful argumentation and discourse are practices of scientists and engineers that provide a pathway for success in the future workforce.

Timucuan Technology: Biotechnology Education from The Florida Public Archaeology Network
M Indian River
Kevin Gidusko, Public Archaeology Coordinator, and Sara Ayers-Rigsby, Director SW and SE Regions, both from FPAN
This session will introduce the Timucuan Technology curriculum by walking educators through a lesson plan on Native American agricultural technology.

Building Models to Learn About Cells
M Palm Beach
Jonathan Hall, Science Education Doctoral Student, Andrea M. Rediske, Science Education Doctoral Candidate, and Kevin Thomas, Science Education Doctoral Student, All from the University of Central Florida (UCF)
Participants will play the role of students and create cell models. This session will help students learn about different types of cells and scientific models.

Vendor Hall Closed
11:20am-12:00pm
for vendor lunch
Symbiosis Super Powers
M Sarasota
Bertha Vazquez, Director, Teacher Institute for Evolutionary Science, RDFRS
Join us for SYMBIOTIC SUPER POWERS!! Dr. Alex Wilson is an evolutionary biologist who researches symbiosis. Her four clever and colorful films showcase symbiosis, they each include lessons, a pre-test, a slide presentation, and extension activities currently on cPALMS. For a film preview, please visit http://www.bio.miami.edu/acwilson/?page_id=276

Climate Change and Coral Bleaching: A Student Inquiry Experience
M,H St. Johns
Scott Sowell, PhD; Science Teacher; Darnell-Cookman Middle/High School
Participants will analyze reef locations and ocean temperature data in order to examine how inquiry-based learning experiences can explicitly target students’ nature of science understandings.

Use Science to Teach Reading, Use Reading to Teach Science
E Volusia
Lori Smith, National Curriculum Consultant, Learning A-Z
Are you pressed for time to teach science in your classroom? This session will demonstrate ways to teach science and reading simultaneously using ScienceA-Z.com resources.

Together We Can Heal Ocean Life
DR. LARA CROFT
STAFF VETERINARIAN
SEAWORLD ORLANDO
Every day, ocean life faces difficult challenges. As an aquatic animal veterinarian, Dr. Croft's job is to help sick and injured animals. In this keynote presentation, Dr. Croft will give insights on what she and other specialists do, and how you can help. Dr. Croft will discuss the technologies used in sea animal health care, and talk about the many special patients she works with daily at SeaWorld, and the rescues that she works with around the state. Dr. Croft will be giving tips on how we, as educators, can help promote responsible stewardship of our ocean resources. For more information on Dr. Croft's mission to help provide guidance and education, visit http://doctorlaracroft.com.

Promoting FUN: student engagement, commitment, and achievement through collaboration, projects and field trips
H Broward
Bryan Wilkinson, Physics teacher, Lawton Chiles High School
Using projects and field trips, teachers can motivate students to increased efficacy and grit - both essential for increased student achievement and pursuit of STEM.

Genetics: Crazy Traits and CPO’s new Link Learning Module
M,H C3
John Marinake, Regional Sales Manager, Frey Scientific/NeoSCI/CPO Science
CPO’s new Crazy Traits Link learning module uses STEM and NGSS strategies in a real-time tablet based learning environment to learn genetics. Concepts like traits, alleles, phenotypes, genotypes, and heredity will come alive as you create crazy creatures with a unique kit and study probability, adaptation, dominance, and recessions.
National Geographic Explorers: New and Exciting Ways to Introduce Your Lessons
E                                                         Cape Canaveral

Tom Hinojosa, National Science Education Consultant, National Geographic Learning

National Geographic Explorers provide real-life examples of STEM. Participants will learn how to integrate modern explorers into science curricula to stir the imagination of every student.

All Aboard! Using Informal Science Experiences to Enhance Literacy and Inquiry in the Formal Science Classroom
M,H                                                         Dade

Catherine Cocozza, ELA Program Specialist, Megan Ehler, Ph.D, Teacher and Program Director of the Carefree Learner, Sarasota High School, and Ryan Louise Miller, Science Program Specialist, all from Sarasota County Schools

Participants will engage in an interactive session that focuses on incorporating experiential learning, technology, and literacy to engage students in scientific inquiry.

Planning a New or Remodeled Science Room? U-Design!
A                                                         E2

Tom Trapp, National Science & Safety Development Consultant, Flinn Scientific

Whether your school or district is planning new or renovating existing science rooms, considering NEW 21st Century Science Labs, or creating STEM Labs, Flinn is here to help!

Stop the Shake: Design Earthquake Resistant Buildings in your Elementary Classroom
E,M                                                         F1

Ronald L. Carr, Ph.D., Senior Instructional Designer, Florida State College at Jacksonville

In this interactive hands-on STEM session, you’ll become a structural engineer designing an earthquake safe building for the Build Safe Construction Company in this problem-based, real world engineering challenge.

True Colors - Spectroscopy to investigate lights and solutions
H                                                         F3

Dr. JP Keener, PASCO Scientific

Spectroscopy is a powerful tool for studies in advanced coursework including AP Biology and AP Chemistry. In this hands-on workshop, you will learn how to incorporate spectroscopy into your labs. Former DOE Director, Dr. JP Keener will be providing tips for success. Receive a gift certificate to be applied towards a PASCO purchase – possibly a wireless spectrometer. This is a $100.00 value – Limit first 25 to the workshop.

Learning Camp
E                                                         Florida Keys

Alisa Johnson, and Diane Jellie - Teachers, School district of Indian River County Beachland

Learning Camp takes place in the first grade classrooms. All the first grade teachers will rotate through the classrooms to teach students knowledge about things pertaining to the “camp” theme. We will discuss frogs, lizards, turtles and snakes; critters native to Florida. During these two weeks, learning will be fun as the children learn content through hands-on activities, songs, and fantastic literature.

Don’t let the #'s scare you!
E,M                                                         Hillsborough

Mrs. La-Chaz Harris, Regional Science Coach, K-12, Mrs. Nikki Styron, Differentiated Accountability (DA) Regional Science Coach, K-5, Ms. Rhonda Jewel, School Based Science Coach, K-5, all from Polk County School Board

In this session, participants will engage in data analysis in order to determine meaningful and actionable outcomes within the classroom.

Have your Content and Read it Too
M                                                         Indian River

Rachel Hallett-Njuguna, K-8 Science Specialist, SCPS and Ilene Haney, K-12 Social Studies Specialist, SCPS

Using complex, engaging, and varied content-area texts within collaborative structures to strengthen literacy as well as content knowledge.
Going Paperless: Digital Text Coding
Katherine Barnhart, M.S.Ed, School-Based Science Coach, Elementary and Cheryl Fogel, M. Ed.,District Science Coach, Elementary, both from Polk County Schools

How to use technology to reduce the need for paper copies in the science classroom.

The Labs are Simulated.....the Skills are Real!
Lura Sapp, Product Specialist and Michael Leininger, Sales Executive, both from e-Tech Simulation
Experience how virtual labs boost student engagement and achievement in a cost effective platform, reducing drawbacks often associated with traditional wet labs.

Electric Circuits
Bruce Wear, Carolina Consultant
Join us in exploring parallel and series circuits, open and closed circuits and how to wire a house with switches and lights.

Beat the Heat: Using Evidence and Authentic Experiences to Teach Climate Change In Order to Enhance Student Engagement and Learning
Brenda Breil, 7th Grade Science Teacher, P. K. Yonge Developmental Research School
Resources and teaching strategies will be shared and practiced with the goal of enhancing student understanding of climate change, its effects, and possible human responses.

Gardening Across the Curriculum
Karen Minert and Lauren Allen
This presentation will demonstrate the cross-curricular value of using a school garden to teach math, science and writing to students.

Incorporating ASL into your plan
Kentrell Martin, president at Shelly’s Adventures
An educational and interactive session that incorporates American Sign Language

Humane Education in Science: Developing students' critical thinking skills and making connections
Sally Sanders, Humane Educator, Ethical Choices Program
This session introduces a new Humane Education program providing free class presentations on the environment, health, and social issues for high schools and colleges. Participants will receive a classroom-ready activity.

Building an Electric Motor the STEM way with CPO’s new Link Learning Module
John Marinake, Regional Sales Manager, Frey Scientific/NeoSCI/CPO Science
CPO’s new Link Electric Motor learning module is a STEM and NGSS based learning approach to electromagnets, permanent magnets, commutators, and induction in a real-time tablet based learning environment using hands-on equipment. The Engineering Cycle, observation, measurement, and experimentation are used to design and build electric motors with student-based activities.

Gardening Across the Curriculum
Karen Minert and Lauren Allen
This presentation will demonstrate the cross-curricular value of using a school garden to teach math, science and writing to students.

S.T.E.M. with Grimm and other Fairy Tales
Melissa Triebwasser, Science Coach for Elementary Science, and Christina Calve, Science Resource Teacher for Town and Country Elementary, both are from Hillsborough County Florida
S.T.E.M with Grimm and other Fairy Tales will engage participants through S.T.E.M. challenges, lesson ideas and resources connect to well known fairy tales.

Universal Studios
Teresa Crews, Sr Manager, Education Program Development
Discover our Universal laboratory, where we inspire students to learn about careers in science from engineering to math and technology to design. More than a glimpse behind the curtain, our programs are changing the way you imagine theme parks in education.
STEMPilot Aviation and K12 Education
E,M,H
Duval
Jay Leboff

Demonstrate the edustation flight simulator, curriculum and tutored missions and how this is an effective teaching method for mainstream and special needs students.

MEA - Model Eliciting Activity - Cover All the Bases
E,A
Margaret McNally - 4th grade teacher and Deb Denney - 1st grade teacher - both from Ocean Breeze Elementary

In this open-ended problem, students will work in teams to determine a procedure for selecting a company from which to purchase spacesuits. Students will make decisions based on a table that includes company, cost per suit, color, durability, materials, and comfort. Students will determine the price per flight, graph the provided information, and write a letter to the client providing evidence for their decisions.

Modernize your Physics Curriculum with Essential Physics
H
Dr. JP Keener, PASCO Scientific

Give your students interactive equations to manipulate, simulations & animations to visualize physics, videos, and teacher materials including lesson plans, presentation slides, quiz builder, and more. Come meet the author Dr. Tom Hsu to learn how Essential Physics will enhance your physics teaching. Former DOE Director, Dr. JP Keener will be providing tips for success. Recieve a gift certificate to be applied towards a PASCO purchase. This is a $100.00 value – Limit first 25 to the workshop.

STEM Vision: Are You In?
E,M,H
Florida Keys

Colleen Habhab-Strickland, Curriculum Supervision 6-12, School Board of Sumter County, Kathleen Keck, District Specialist, MSP Project Manager, School Board of Lake County, and Heather Norton, Vice President of Education, Orlando Science Center

Teacher teams from Lake and Sumter counties grades 3-12 will demonstrate how to integrate standards from science, math, and technology to develop project based STEM lessons using the Engineering Design Challenge process.

STEM + The Environment = A Match for Success
E,M
Hillsborough
Janet Sweat, TSC, Columbia County School District, and Irene Johannesen, Science Teacher, Fort White High School

This presentation will give you strategies to engage your students in authentic science learning by utilizing your local and/or school environment. Sample lessons included.

Open Educational Resources: Did I mention they are free?
A
Pinellas

Milton Huling, Ph.D., Curriculum Specialist - Elementary Science and Alison Smith, School-based Science Coach, both from Polk County Public Schools

Imagine having your own science textbook that you can instantly edit to meet the needs of your students. Now imagine this textbook is free.

Chemical Batteries
M
Palm Beach

Bill Gipperich, 8th Grade Science teacher and LAB-AIDS Curriculum Consultant

Students will make a wet cell battery, explore the effect of using different metal electrodes, and consider ways to reduce the number of discarded batteries.

Engineering Fun in Your Science Classroom
M,H
Indian River

Richard Ledbetter, Ed.D., Science Professor, Santa Fe College, High School Dual Enrollment Program


Supporting Social Skills in the Science Classroom for Students with Autism through Argument-Based Investigations
H,A
Sarasota

Shannon Gooden, Doctoral Student and Sherry Southerland, Professor of Science Education, both from Florida State University

Teachers will learn strategies to support the productive social interactions of students with autism in the science classroom while participating in an argument-based inquiry investigation.
2:00 – 2:50 PM Concurrent Session 5

Zoonotic Diseases and Emergency Preparedness
M,H St. Johns
Tina Gibson Science Chair, CDC Science Ambassador Lake Mary Preparatory School, Amy Demins, Oviedo High School
Using Case Studies to discuss real world Public Health events.

Phenomenal Photovoltaics
E,M F1
Susan T. Schleith, Director of K-12 Education Programs and Penny Hall, Florida Solar Energy Center, University of Central Florida
Explore the "magic" of photovoltaics through hands-on experiments and learn why this technology that turns sunlight into electricity is so important to the future of our planet. Door prizes!

3:00 – 3:50 PM Concurrent Session 6

HHMI Biointeractive Popped Secret - Integrating Genetics & Evolution
H,C Broward
Tim Guilfoyle, HHMI Biointeractive Ambassador
How did one of the most common foods evolve? The story of Maize - its origins & genetics - will be explored through a short film & activity.

STEAMing it Up! A Cross-Curricular Collaborative Approach to Learning K-2
E,M F2
Teri Barenborg, STEAM Director, Lauren Monroe, Instructional Coach, Tari Sexton, Assistant Principal, and Michell Power, 5th grade teacher, all from St. Lucie Schools
K-2 STEAM lessons designed with a data driven focus to support teachers in the classroom and engage students through the use of problem solving and critical thinking.

The Power of Playdough
E,M,A C3
Nancy Bourne, Stem Integration Resource Teacher and Mindy Rosen, STEM iLab Project Manager, Palm Beach County District Schools
Use playdough to create fun and engaging lessons that teach Florida State Science Standards. In this session you will measure volume, make a model of Earth and an animal cell and create “squishy circuits”, all with playdough!

Using The Bird: The total interactive tool
M,H,C,A D1
Suzanne Banas, Ph.D.; NBCT South Miami Middle Community School
Bird is the first device to integrate the entire spectrum of interactive methods – including touch, remote touch, gesture control, voice command, mouse functionality and hover – into a single tiny wearable. This gives users the flexibility to interact with each type of digital content in the most intuitive way, whether they choose to do so from up close or from a distance of up to 100 feet away. Bird is also the first device to feature multi-user input functionality, allowing up to 10 people to interact with the same content simultaneously.

Let’s Get Physical: From Force and Friction to Water and Weather
E Duval
Ruth Ruud, ruudruth61@gmail.com, Instructor/Consultant, Venice FL, Cleveland State University
Don’t look now, but the CCSS asks that you teach physical sciences as early as kindergarten, and the NGSS have specific goals for early primary. No more procrastinating! The good news is that you have your equipment. Come and get easy activities, lit basics, and basic teacher background so that you can start right away!

M F1
Donna Barton, Teacher, Clay County Schools
Monterey Bay Aquarium Research Institute activities provide teachers with a means for integrating real-time data with tested curriculum in an interactive and engaging way.

The Hex Bug Simple Machine Obstacle Course
E Hillsborough
Sue Curry, IE2 Teacher - Braden River Elementary School, and Debbie Smith, IE2 Teacher - Freedom Elementary School, Manatee County School District
Hex Bugs are tiny robots with no mind of their own. Participants will use the Engineering Design Process to construct an obstacle course demonstrating an understanding of at least 2 of the 6 Simple Machines. The engineering challenge: Can you guide the hexbug’s movements to use the simple machine obstacles that are incorporated into the course?
<table>
<thead>
<tr>
<th>Activity</th>
<th>Location</th>
<th>Description</th>
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| **Pollen to Periscopes: for k-5 NGSSS**                                   | Dade       | **Andrew Gillies**, STEM Team Leader, LJ Create Inc  
Participate in two class activities which will demonstrate how easy it is to integrate more active learning into your schedule. It might get messy but we'll clear up afterwards.                                                                                       |
| **Modernize your Physics Curriculum with Essential Physics**              | F3         | **Dr. JP Keener**, PASCO Scientific  
Give your students interactive equations to manipulate, simulations & animations to visualize physics, videos, and teacher materials including lesson plans, presentation slides, quiz builder, and more. Come meet the author Dr. Tom Hsu to learn how Essential Physics will enhance your physics teaching. Former DOE Director, Dr. JP Keener will be providing tips for success. Receive a gift certificate to be applied towards a PASCO purchase. This is a $100.00 value – Limit first 25 to the workshop. |
| **The National Magnet Lab Talks About Magnets**                          | Florida Keys | **Carlos R. Villa**, K-12 Outreach Coordinator; National High Magnetic Field Laboratory  
If you only see one session on magnetism, get it from the pros right here. Aimed at elementary grades, this sessions will cover magnetism completely.                                                                                                                                                                                                 |
| **Its Elemental - a PHun Chemistry Experience**                          | Indian River | **Mrs. Rose Perez-Rubi**, Science Teacher, MAS 6-12 @ Zelda  
This session will provide hands on opportunities for students to use chemicals like scientists and determine through their own observations whether physical or chemical changes have taken place as well as exothermic and endothermic reactions.                                                                 |
| **RISE-ing Interest in Science Teaching through Research**               | Pinellas   | **Allan Feldman**, Professor, **Frederick Bradley**, Graduate Assistant, **Andrew Apugliese**, RISE Intern, **Javier Areas**, RISE Intern, **Stephanie Bauman**, RISE Intern, and **Daniel Icenhour**, RISE Intern, all from University of South Florida  
This session describes how undergraduate science education research internships can improve the quality and supply of science teachers, and ways to implement these internships. |
| **Journey 2050**                                                         | St. Johns  | **Lisa Gaskalla**, Florida Agriculture in the Classroom  
By the year 2050 there will be an estimated 9 billion people and food production needs are expected to increase by more than 60 percent. Agricultural experts and real farm families from Kenya, India and North America guide students through a virtual farm simulation, avatar game and scavenger hunt question and answer. Each game uses different tactics to engage users while showcasing best management practices, innovations, limiting factors and ripple effects of choices. |
| **Make Science Come to Life with WeDo 2.0**                              | Broward    | **Lynne Boucher**, STEM Teacher, Viera Charter School  
Did you know LEGO® bricks can provide an engaging platform for making science come to life? Using LEGO Education solutions, elementary students can explore, create, and share discoveries as they build solutions to real-world, standards-based projects and deeply engage with science practices and the engineering design process. Come experience a resource that develops students' confidence to ask questions, find answers, and solve problems by putting discovery in their hands. |
| **Modeling Population Growth in Ecosystems: An Unplugged Investigation** | F2         | **Michael Kmietowicz**, Education Specialist: After-school Programs, Orlando Science Center  
Participants will engage in a fun, hands-on activity that shows how computer science can be used to model populations of predators and prey.                                                                                                                                                                                                 |
| **Dr. Seuss STEM**                                                       | C3         | **Dana Johnson** and **Savanna Atchison**, 3rd Grade Teachers, Seminole Science Charter School  
Students will participate in STEM activities such as exploring matter and discovering the effects of pollution, all modeled around themes found in Dr. Seuss books.                                                                                                                                                                                                 |

Friday, October 21, 2016
UF Integrated Elementary STEM Training with Lesson Study Project

E,M                                                    Cape Canaveral
Alicia Foy, STEM Teacher Palm Beach County

Over the course of a year, selected teachers in Palm Beach County connected with University of Florida scientists, engineers, mathematicians and educational leaders in order to integrate new interdisciplinary content knowledge using Problem- and Project-based teaching strategies. Content clinics, field trips and written PBL lesson plan requirements enhanced the learning and collaborative process. Using the Lesson Study Project, written PBL lesson plans were implemented, discussed, revamped and improved. Come interact with our lesson ideas!

Energy, Energy, Everywhere!
E                                                                                D1
Elizabeth Faulkner

This session will allow participants to explore the flow of energy in an interactive hands-on experience that leads to student understanding of energy transformations.

Leveraging SCIENCE to Improve Students' Writing Skills

E,M                                                                             Dade
Andrea Fredmonski, MS Education Adventures, LLC (DBA Wacky Wild Science)

Leverage the FUN of science to inspire students to write! Hands-on science activities and live animal interactions spark an intense curiosity in students and develop a passion for learning. This passion can spill over into other subjects. Teachers, you’ll learn to leverage awe-inspiring science lessons to help cultivate a love for reading and writing. You will receive tips and tricks you can use in the classroom that help you blend science and ELA to help improve your students’ writing.

Biology Bob: Vertebrate Songs

E                                                                                Duval
Dr. Robert M. Everett, Associate Professor, University of Central Florida

Join Biology Bob as he sings songs about vertebrate animals. Classroom teaching ideas will also be discussed.

A Beautiful Planet- NASA and the ISS

E,M,H                                                                                     F1
Jennifer Hudgins, Education Specialist NASA Kennedy Space Center

NASA educators will walk participants through several hands on activities that help students better understand the dangers of living and working in space. Participants will learn about the free resources and field trips available to them through NASA Education and the Kennedy Space Center.

Drag your classroom in to the 21st Century with Easy-to-teach STEM Coding and Robotics

M,H                                                                             F3
Dr. JP Keener, PASCO Scientific

This hands-on workshop presents technology-enhanced lessons focusing on force and motion using some incredible classroom-scale robots. Using coding basics, Author and Physicist Tom Hsu will explore essential kinematics ideas from the 6-12 curriculum. Former DOE Director, Dr. JP Keener will be providing tips for success. Receive a gift certificate to be applied towards a PASCO purchase. This is a $100.00 value – Limit first 25 to the workshop.

Let's Explore Waves...Sound Waves!

E                                                                                Florida Keys
Holly Mentillo, Teacher, Ocean Breeze Elementary, Brevard County

Hands on! Inexpensive or no cost! Multiple sound activities will be presented, come find the ones that are right for your classroom. Includes an EDC.

Modeling Convection Currents

M                                                                Palm Beach
Bill Gipperich, 8th Grade Science teacher and LAB-AIDS Curriculum Consultant

Students investigate and model convection currents using unique LAB-AIDS®/SEPUP materials to develop an operational understanding of the between water temperature and its movement.

Fresh from Florida teaching tools

M,H                                                                   Pinellas
Arlette Roberge, Marketing Representative: Florida Department of Agriculture and Consumer Services

Florida produces hundreds of agriculture commodities on 9 million acres of land. Participants will receive resources to teach students about this multi-billion dollar industry.
Diamond Del’s Gem Mining Adventure
E,M Sarasota
Barry Brockman, Director of Marketing, Diamond Del’s Gem Mining

We show and explain to the teachers what we actually present to the students when they do the on site mining experience when we bring the hands on learning to the schools at a cost that is a tremendous savings over a field trip and much more educational.

Identifying Cognitive Demand of Instructional Tasks Used in Science Classrooms
E.M.H.A St. Johns
Miray Tekkumru-Kisa, Assistant Professor, Florida State University, School of Teacher Education & Learning Systems Institute, FCR-STEM

The learning benefits of engaging students in cognitively complex tasks are well documented. This presentation focuses on classifying tasks based on their cognitive demand levels.

The Science of Wine
PASCO Scientific Social
Friday, October 21
5:00-6:30pm
Cost-FREE! MUST REGISTER!

Come join the staff of PASCO Scientific as we showcase new software, hardware and exciting technologies as applied to the science of wine. Biology, Chemistry, and Physics specialists will be on hand to answer questions, demonstrate new technologies and enjoy this social opportunity with you. Take the opportunity to examine new tools for your classroom on this self-guided tour of science and wine. Former State STEM Director, Dr. JP Keener will be making the connections between the tools and the standards, and writer/author Tom Hsu will be available to sign his Essential Physics book, and discuss his new creation, “Essential Chemistry”. Wine and cheese will be provided for the first 150 attendees.

Educators only, no guests. No one under 21.
Must show registration badge.

Vendor Hall

Vendor Hall closes Friday at 5:00 pm and reopens Saturday at 8:00 am
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Terrific "Hands On-Minds On" Science Games and Puzzles for High Schools
H
Rodelio Abuan, Teacher, Sam Houston MSTC, Houston ISD

Teachers will play and learn how to make their own 10 unique, engaging, and powerful instructional tools (games, puzzles, and station activities) that can be used in different topics, grade levels, and class sizes.

Motion & Design
E
Lew Blessing
Cape Canaveral

Explore forces & motion and simple car design. Build a car that goes faster and further than the others in the class. To win the competition, the car must also be the least expensive to build.

Engaging students with STEM and Science Olympiad
E
Valerie Ledford, science teacher, Lake Nona High School
Sarasota

Design a “Mystery Package”: Learn how to use this and other Science Olympiad STEM activities in your classrooms/schools to meet science and math standards.

Successful K-3 STEM on a Shoestring
E
Katrina Madok, Elementary Gifted/STEM Teacher, Gerald Adams Elementary School
Florida Keys

Innovative hands-on projects for K-3 students will be shared for highly successful STEM classroom lessons. All projects incorporate everyday objects to produce unique student results.

Algae Beads, Bio-Rad, and NGSS- An integrated Lab to Facilitate the Understanding of the Relationship Between Photosynthesis and Respiration
M,H,C
Sherri Andrews, Curriculum and Training Specialist/Bio-Rad Laboratories
Hillsborough

Come learn how to guide your students to design, implement, and analyze data for an experiment to better understand photosynthesis and respiration using algae beads.

STEM DAYS!

Andrella Hurley and Julie Chardavoyne, 4th grade teachers Orlando Science Elementary
Indian River

You will explore the world of STEM Days where students rotate through fun themed STEM activities to solve a problem where science is a necessity!

A Cell So Small
M
Bill Gipperich, 8th Grade Science teacher and LAB-AIDS Curriculum Consultant
Palm Beach

Students model large and small cells in an effort to investigate diffusion, surface area, and other factors that determine the limits of cell size.

Problem /Project Based Learning: Worming Around With the Scientific Method
E
Ramona Lataille, Teacher of the Gifted Seminole Science Charter School and Kevin Grece STEM Teacher Seminole Science Charter School
Duval

Participants will gain knowledge on how to provide instruction about the scientific method through involvement in portions of a project/problem based learning activity, involving vermi-composting.

“Put a little STEAM into your lesson!”
E
Mary R Ward, Science Lab Teacher K-5, Ashton Elementary and Caitlin M Ward, Art Education Master's Student, FSU
St. Johns

See how three life science lessons can be made more engaging through arts integration by incorporating art objectives to aid in the creative expression of newly acquired knowledge.

Decoding Cancer featuring BioCONECT
M,H
Casandra Gabriele, Program Coordinator, Rutgers University
Volusia

Participants will be introduced to various cancer related topics, discuss the importance of teaching cancer in their curriculum, and demonstrate lessons to use in their classes.
SSA Bootcamp
E Duval
Cheri Dame, Science Lab Teacher K-5, Cranberry Elementary, and Lisa Figueroa, Science Lab Teacher K-5, Taylor Ranch Elementary, both are from Sarasota County Schools
Looking for a fun and easy way to review 3rd and 4th grade benchmarks with your 5th graders? This is the workshop for you.

Exploring My Weather
E Broward
Bruce Wear, Carolina Consultant
This workshop will explore K weather concepts including how to build a better dog house and designing a hat to protect from the weather.

Changing the Way You Teach Climate Change
M,H,C Hillsborough
Allan Feldman, Professor, University of South Florida, Kelly Cook, Teacher, Durant High School, Tracy Flanagan, Teacher, Plant High School, Molly Nation, Graduate Assistant, University of South Florida, Debby Guice, Teacher, Andria Keene, Teacher, Linda Schmitt, Teacher
This is a hands-on introduction to climate change (CC) curriculum materials including the thermal expansion of water and the effects of CC on algal blooms.

FAST Annual Business Meeting and Awards
A Cape Canaveral
Sharon Cutler, President and Dr. Gary A Yoham, President-Elect
FAST will celebrate our science teachers of the year. It will be followed by our annual business meeting and passing of the gavel.

STEM can be easy and engaging!
E Indian River
Rachel Knight, Orlando Science Elementary School
Does STEM seem overwhelming? No time and no supplies readily available? Come learn how to use simple everyday materials for engaging activities in the classroom that incorporate reading, math and technology.

Biology Bob: Songs about Climate Change
E Palm Beach
Dr. Robert M. Everett, Associate Professor, University of Central Florida
Come join Biology Bob as he sings several songs about climate change and the environment.

Rockin’ Earth Science - Weathering & Erosion
E Sarasota
Barbara Brightman, Elementary Science District Resource Teacher; Hillsborough County Public Schools and M.G. Trudy Johnson, Independent Consultant
Come experience hands-on inquiry-based investigations to experience and understand weathering and erosion in a teacher-friendly, student-friendly way.

FMSEA/FWC Aquatic Species Collecting Workshop
E,M,H,C Volusia
Diane Bassett, Instructor, Florida Marine Science Educators Association
This workshop is being offered to educate teachers regarding responsible collecting. A 3-year collecting certificate may be obtained upon successful completion of this DOUBLE session. 9:30 am—11:20 am
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michelle.kirk@vwr.com
Yvonne Vivian
North Florida
716.515.6033
yvonne.vivian@vwr.com
Modeling Translation of Insulin

Valerie Ledford, AP Biology teacher and instructional coach, Lake Nona High School, Orange County, FL

Using hands-on and easily available materials, model the transcription and translation of insulin with the goal of bringing this activity into your life science classroom. Participants will leave with materials for one model and instructions for classroom lesson.

Fast and Easy STEM Lessons for the Elementary School Teacher

Kyle Yost, Missy Kelly, Mark Keever

This session will give Elementary School Teachers ways to incorporate inexpensive and easy STEM lessons into the classroom.

Germs are everywhere! How hand washing keeps you healthy.

Andrea M. Rediske, doctoral student, Kevin Thomas, doctoral student, Jonathan Hall, all from University of Central Florida (UCF)

Germs are everywhere, but can your students see them? This demonstration helps participants visualize microbes through fun activities and understand the importance of hand washing.

Ocean Physics

John Clark, Science Teacher, Deltona High School

Use ocean physics as a new twist on teaching the concepts of buoyancy, wave behavior, and vectors. Three activities will be presented, one for each concept.

Step Up to Science - Using Step books to engage students and integrate ELA strategies

Donna Barton, Teacher, Clay County Schools

Engage students and integrate ELA strategies into life science lessons using step books. Take home some samples and a CD with lesson plans and rubrics.

Assessing Student Success in Engineering Design Challenges

Nicole Rivera, Education Specialist of Afterschool Programs and Heather Norton, Vice President of Education, both are from the Orlando Science Center

Participants will be given an overview of the engineering design process and complete a short engineering design challenge from the learner’s perspective. Participants will reflect on their experience from a teacher’s perspective and discuss how to assess student success.

Appliance Science

Cassandra Haines, Second Grade Teacher-Orlando Science Elementary

Students watch their parents and chefs on TV use various kitchen appliances. What if students could learn science from a crock pot, blender, or other appliances?

Butterfly Gardening Using Native Plants

Nancy Sale, M-DCPS Teacher Lillie C. Evans K-8 Center

Butterfly Bonanza provides a roadmap to success for implementing a native butterfly habitat. Take home a starter kit that will enable you to immediately set up a habitat at your school. Door prizes and a wealth of digital data.

Raffle in the Vendor Hall

11:30 to 12:00

FAST Life Members’ Luncheon

By invitation only!
12:30 - 1:30 PM       Room: Lake
Where big ideas become the next big thing.

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Zo Ellen Warren  
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Donna Barton  
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Amy Trujillo  
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Celebrate the Past Presidents of the Florida Association of Science Teachers

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Why a list of FAST past Presidents on this page?

We are celebrating 68 years of science teachers engaging in professional development.
## Session Planner:

### Thursday

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<td>Session 1</td>
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<td>Session 2</td>
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<td>Session 3</td>
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<td>Session 5</td>
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<td><strong>Featured Speaker</strong></td>
<td><strong>11:45am—12:45pm</strong> Volusia <strong>Zipporah Miller</strong></td>
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### Friday

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<tr>
<td><strong>Feature Presentation</strong></td>
<td><strong>9:30am–10:20am</strong> Osceola <strong>Walter Mackelburg  Dr. Hector Martin</strong></td>
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<td>Session 3</td>
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<td><strong>Keynote</strong></td>
<td><strong>12:00 am–12:50 pm</strong> Osceola <strong>Lara Croft</strong></td>
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Florida Association of Science Teachers

presents this

CERTIFICATE OF PARTICIPATION

TO

Sharon Cutler
FAST President 2015-2016

For participation in the FAST 2016 Science Educators’ Conference
Orlando, FL
October 20-22, 2016