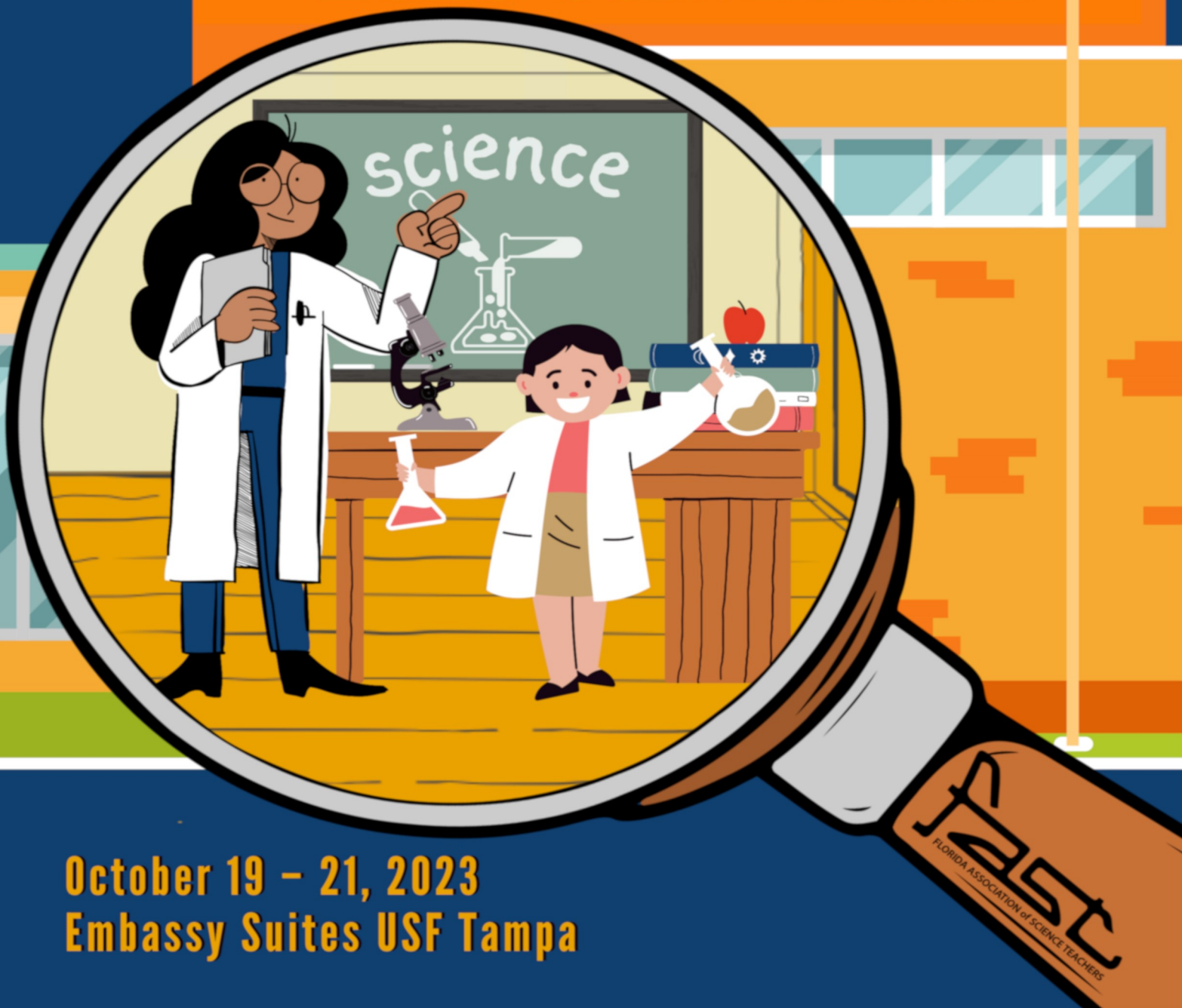


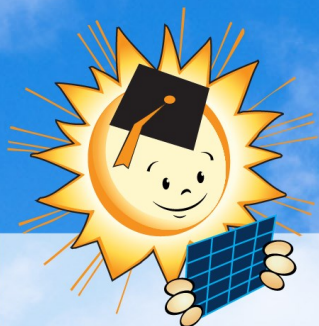
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"I've seen just one spark of curiosity create a great burning love and fire for learning."
Katherine Brown, Public Affairs Officer NASA, NASA STEM

2023 CONFERENCE



October 19 – 21, 2023
Embassy Suites USF Tampa



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PRESIDENT'S WELCOME

"Creating Curiosity"



It is with immense pleasure and anticipation that I extend a heartfelt welcome to the 2023 FAST Annual Conference “Creating Curiosity” in Tampa, Florida. This gathering is a celebration of our unwavering commitment to the pursuit of science education, and it promises to be a memorable event. We hope our conference piques your science curiosity and helps you to create that special year of success.

This year’s conference brings together a remarkable assembly of educators, researchers, and professionals from across the educational spectrum. We are united by our shared passion for shaping the minds of future generations and fostering a lifelong love of learning. The sessions will focus on making investigations more meaningful and interactive for students and learning how to develop authentic assessment strategies. Throughout the conference, you will have the opportunity to engage in thought-provoking discussions, attend inspiring sessions, and connect with fellow educators who share your commitment to educational excellence. I encourage each member to seize this unique learning opportunity by attending sessions, sharing your insights, collaborating, and building lasting connections.

Be sure to add the Vendor Hall to your agenda. With science education companies and organizations showcasing their products, services, and curricula, I’m sure you’ll find something creative and exciting to enhance your science teaching.

I extend my sincere appreciation to the dedicated committee volunteers who have worked tirelessly to make this event possible. Your efforts have played a pivotal role in shaping this conference into an extraordinary gathering of science minds.

A special thanks also goes out to our generous sponsors who provided thousands of dollars in awards and products to Florida educators.

Teachers, Thank you for your support of FAST!

Sharon Cutler
2023 FAST President

2023 Conference Committee

Barbara J. Rapoza (Conference Chair and Program Book Editor)

Sharon Cutler (Vendors)

Nancy Besley (Program Sessions)

Dr. Gary A. Yoham (Registration and Program Book)

Dr. Yvette Greenspan (Program Tags)

Cover designed by **Andrea Cutler**



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Table of Contents

Florida Solar Energy Center: EnergyWhiz.....	2
STEMScopes.....	2
President’s Welcome Letter and Conference Committee.....	3
Destination Knowledge: ASTROMAKER.....	4
Table of Contents.....	5
iCEV: Ecology Conservation & Management Certification.....	6
Schedule at a Glance.....	7
Social Event: Meet and Greet.....	8
Field Trip: Busch Gardens.....	8
Saint Johns River Water Management: Blue School Grant.....	9
Ecybermission Real-World STEM.....	9
MarineLab.....	9
Workshops for Thursday.....	10-12
Lab-Aids.....	13
2023 FAST Awardees.....	14
Florida PAEMST Science Finalists	14
Program Key.....	15
Florida Power & Light Company (FPL).....	16
Thursday’s Workshops and Social Event.....	17
Sessions and Events on Friday.....	18-25
hand2mind.....	25
Classroom Grant Recipients.....	26
Travel Grant Recipients.....	27
UF/IFAS Extension Bookstore.....	28
Save the Date: FAST Conference 2024 Tampa.....	28
Sessions and Events on Saturday.....	29-31
FAST Board of Directors.....	32
Celebrating 76 years of FAST Presidents.....	33
Embassy Suites by Hilton USF near Busch Gardens’ Map.....	34
Session Planner.....	35
Everglades K-12 Publishing Science Series.....	36
Sponsors Appreciation.....	37
FAST Area Directors.....	38
NSU.....	39
Certificate of Participation.....	40



Ecology Conservation & Management Certification

FLORIDA APPROVED INDUSTRY CERTIFICATION

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The Ducks Unlimited Ecology Conservation & Management Industry Certification offers a novel way for environmental science educators in Florida to meet state standards, help students earn acceleration points and receive valuable CAPE funding to reinvest back into your classroom.

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In order for Florida educators to implement an industry certification in their classroom, they must first earn the certification themselves. Educators can earn the Ducks Unlimited Ecology & Conservation Management Industry Certification for FREE to better understand the certification process and help students prepare for the exam.

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Schedule at a Glance/Agenda

FAST 2023 Conference
“Creating Curiosity”
October 19– 21, 2023

Embassy Suites by Hilton Tampa USF near Busch Gardens
3705 Spectrum Boulevard, Tampa, Florida 33612

NOTE: All sessions/events are held on either the first or second floor of the hotel.
Registration is on the first floor on Thursday and Friday, second floor on Saturday.

Thursday, October 19, 2023

Time	Event	Location
8:00 AM – 4:30 PM	FAST ATTENDEE REGISTRATION	First Floor
9:00 AM – 5:00 PM	WORKSHOPS <i>Pre-Registration Required</i>	Designated Rooms
5:30 PM – 7:30 PM	MEET & GREET <i>Join FAST board members and other attendees and discuss how to get the most from the conference. (beverages and light appetizers)</i> <i>Pre-Registration required although event is FREE!</i>	Hotel Atrium

Friday, October 20, 2023

Time	Event	Location
7:00 AM – 4:00 PM	FAST ATTENDEE REGISTRATION	First Floor
8:00 AM	FREE COFFEE/SWEETS	Vendor Hall
8:00 AM – 4:00 PM	VENDOR EXHIBITS <i>Closed for Vendor Lunch</i> <i>12:30 PM – 1:00 PM</i> <i>(Concurrent Sessions still occurring)</i>	Vendor Hall
8:15 AM – 5:00 PM	CONCURRENT SESSIONS	Designated Rooms
2:15 PM	COOKIE BREAK (FREE)	Vendor Hall

Saturday, October 21, 2023

Time	Event	Location
7:30 AM – 9:00 AM	FAST ATTENDEE REGISTRATION	Second Floor
7:45 AM	FREE COFFEE/SWEETS	Registration Area
8:00 AM – 11:30 AM	CONCURRENT SESSIONS	Designated Rooms
9:15 AM – 11:30 AM	FEATURED SESSION: Brevard's Famous Make & Take for Elementary Standards	Designated Room
11:30 AM – 12:30 PM	RAFFLE	Magnolia

PARKING: Self-Parking is **free** for all attendees during the day.
Overnight parking for hotel guests is \$5.00 per night if registered through our website link!

Schedule can change without notice! Please check back often.

Social Events

Meet and Greet!

Thursday, October 19, 2023

Time: 5:30 PM – 7:30 PM

Cost-FREE!

Even though the cost was free to everyone, you **MUST HAVE REGISTERED** by October 6, 2023 to **ATTEND!** Your registration allows us to order enough food and drink so all attendees will have a great time! You must be **REGISTERED** for the conference to attend. You still might be able to attend if there were cancellations, check the registration desk.

Location: Hotel Atrium

Educators only, no guests!

Come as you are and enjoy snacks, adult beverages, and the company of your colleagues.

Sponsored by **Accelerate Learning & FPL**

Field Trip

Busch Gardens **SOLD OUT**

Thursday, October 19, 2023

Special STEM/Science program at Busch gardens

Start the day with a light breakfast with Busch Garden's Educational Staff. Your training begins with a guided expedition through their Safari grounds followed by a tour of the Animal Care Center. Become aware of rollercoaster physics by having a front of the line experience on a coaster! Afterwards, you will be allowed to roam the grounds on your own. Lunch is on your own. Transportation will be provided to the park but you will have to access the free shuttle to return to the hotel. Meet in lobby at 8:45 for a 9:15 start at Busch Gardens. Cost: \$5.00.

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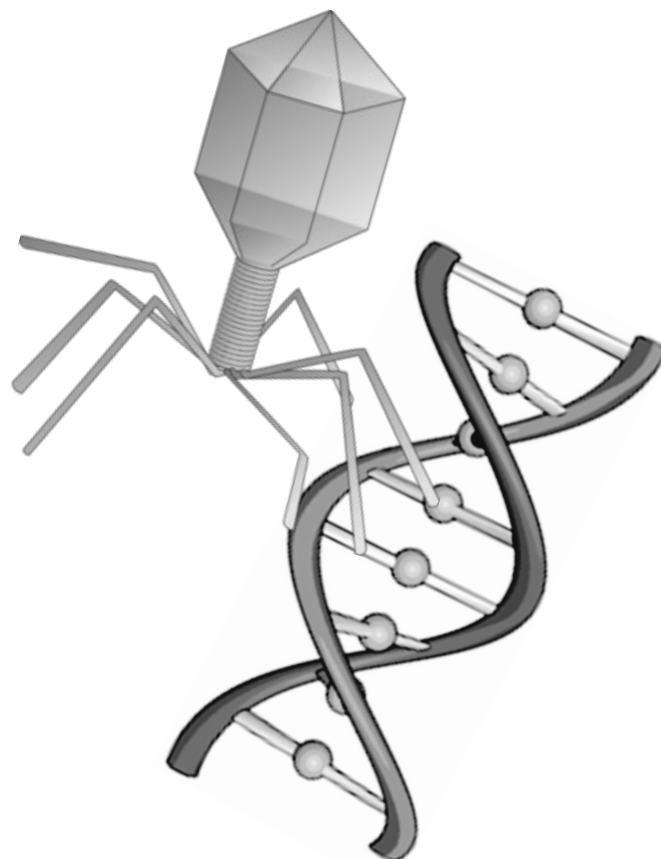


**Teacher
Workshops**



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Workshops

Thursday, October 19, 2023

1. Food Waste-to-Energy: Using Anaerobic Biodigesters for Authentic STEM Research in the Classroom

Presented by: *University of South Florida - Allan Feldman, Emeritus Professor of Science Education; Rita Ortiz, Science Teacher Education Doctoral student; Natalie AmRhein, Environmental Science and Biology Major; David Wright, Master's degree student, Public Health; and KebrAb Ghebremichael, Associate Professor of Instruction, Patel College of Global Sustainability*

Audience: Middle and High School Biology, Chemistry, Engineering and Environmental Science Teachers (Grades 6 –12)

Time: 9:00am - 11:00am

Cost: \$ 5.00

Pre-registration is Required

Location: Cypress

Maximum: 30

Minimum: 8

2. Designing and Implementing Groupwork to Improve Collaboration and Increase Participation and Engagement from All Students

Presented by: *Anna Monteiro, Associate Director of Senior Fellows Program, Knowles Teacher Initiative*

Audience : K-12 Science Teachers

Time: 9:00am - 11:00am

Cost: \$5.00

Pre-registration Required

Location: Magnolia

Maximum: 30

Minimum: 6

3. Independent Research and Sharpening Problem Solving Skills in Student Research

Presented by: *Jenn Cotton, Program Manager, Headwaters Science Institute; and Aaron Reedy, Co-founder, Headwaters Science Institute*

Audience : Middle and High School Science Teachers

Time: 10:00am - 12:00pm

Cost: \$5.00

Pre-registration Required

Location:

Maximum: 30

Minimum: 6

CANCELED

Workshops

Thursday, October 19, 2023

4. Interactive Word Wall Workshop: Experience Building a Visual Scaffold that Supports Speaking and Writing About Science

Presented by: *Julie Jackson, Ph.D., Associate Professor of Science Education, Texas State University, San Marcos, TX*

Audience: K-12 Classroom Teachers, Science Supervisors, and Science Coaches

Time: 10:00am - 12:00pm

Cost: \$5.00

Pre-registration Required

Location: Citrus

Maximum: 40

Minimum: 5

5. Moving the Needle: Highly Engaging Activities to Incorporate Nature of Science throughout the School Year!

Presented by: *Jeff Dudukovich, STEM Education Consultant with S.T.E.M. PROS, LLC and Seminole County Public Schools Physics Bus Teacher*

Audience: Elementary, Middle, and High School Teachers (3-9)

Time: 10:00am - 12:00pm

Cost: \$ 5.00

Pre-registration is Required

Location: Palm

Maximum: 25

Minimum: 10

6. Engaging Students in Science through Eliciting Ideas about Phenomena

Presented by: *Dr. Ellen Granger, AAAS Fellow, Director FSU Office of STEM Teaching, Co-Director, FSU-Teach and Todd Bevis, Director, Professional Development Programs, FSU Office of STEM Teaching Activities*

Audience : Secondary (Middle and High School Teachers)

Time: 1:00pm - 3:00pm

Cost: \$5.00

Pre-registration Required

Location: Palm

Maximum: 36

Minimum: 10

7. Igniting Curiosity Through Science and Children's Literature

Presented by: *Patricia Phillips, Media Specialist, Newberry Elementary and Dr. Ric Ledbetter, Santa Fe College, Retired Professor.*

Audience : Elementary Teachers

Time: 1:00pm - 3:00pm

Cost: \$5.00

Pre-registration Required

Location: Cypress

Maximum: 20

Minimum: 10

Workshops

Thursday, October 19, 2023

8. Climate Conscious Classrooms: Using Environmental Data to Improve our Communities

Presented by: *Karolyn Burns, Education and Curriculum Manager, the CLEO Institute, and Christy Folk, Orlando Program Manager, the CLEO Institute*

Audience: Middle and High School Teachers (Grades 6-12)

Time: 1:00pm - 3:00pm

Cost: \$5.00

Pre-registration Required

Location: Magnolia

Maximum: 30

Minimum: 10

9. The Pharmacist: An Interactive STEM Event

Presented by: *Dr. Amanda Clark, Associate Professor, & Denise Freeman, Instructor, Natural Sciences Department & School of Education, Chipola College*

Audience: Middle and High School Teachers (Grades 6-12)

Time: 1:00pm - 3:00pm

Cost: \$ 5.00

Pre-registration is Required

Location: Citrus

Maximum: 40

Minimum: 10

10. Junior Solar Sprint (JSS) Car Building Workshop

Presented by: *Susan Schleith, Program Director, K-12 Energy Education, Florida Solar Energy Center, University of Central Florida*

Audience : Elementary and Middle School Teachers (Grades 4 – 8)

Time: 2:00pm - 5:00pm

Cost: \$5.00

Pre-registration Required

Location: Salon A

Maximum: 32

Minimum: 10

11. Creating Curiosity with Projects for Organization and Development of Organisms – Cells and Body Systems

Presented by: *Jody Hodges, an award-winning Science Educator and creator of ScienceWear.net*

(\$15 includes: Each attendee will receive choice of Guts or Cell-cebrate Science apron project, a box of ten permanent fabric markers, and instructions for all the projects in session description.)

Audience : Teachers Grades 5, 6, and High School Life Science

Time: 2:00pm - 5:00pm

Cost: \$15.00

Pre-registration Required

Location: Salon B

Maximum: 32

Minimum: 10



Lab-Aids is different by design. We provide hands-on, science curriculum that prioritizes lab investigations and collaboration as the foundation of its instruction. Our middle school *Issues and Science Florida* is fully aligned to the Florida Academic Science Standards.

Spend more time practicing science.



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Outstanding Science Educator

Rafael Robinson

Outstanding Elementary Teacher

Amanda Choplin

Outstanding Middle School Teacher

Diana Techentien

Outstanding High School Teacher

Marjorie Miles Dozier

Florida PAEMST Science Finalists

Alicia Pressel

Creekside High School in St. Johns County

Amy Herman

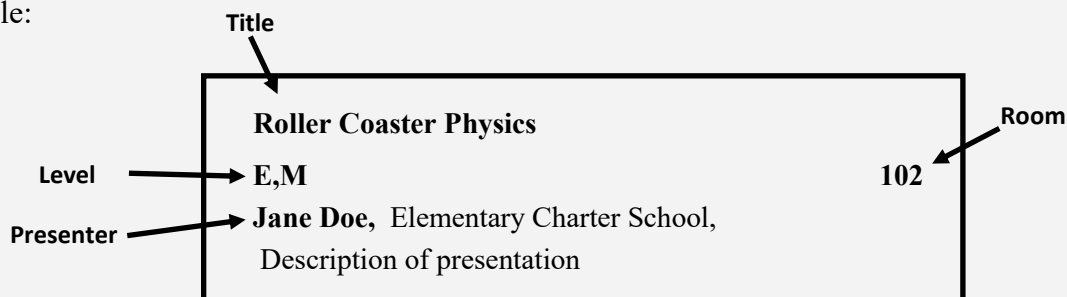
Minneola Charter School in Lake County

Session Program Key

Please note: As you review the sessions on the following pages, you will see that the sessions are in different rooms as listed.

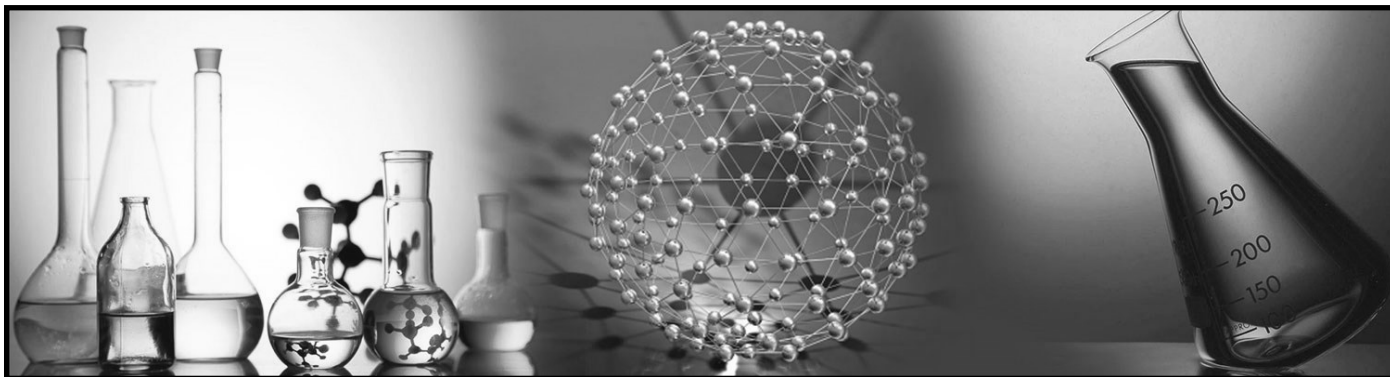
The abbreviations you will see are **E** (Elementary), **M** (Middle), **H** (High), **C** (College) and **A** (All—General). Pedagogy is not specifically identified but include “Making Connections across the Curriculum”, “Differentiating Instruction”, “Science and Literacy” and “Research and Applications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

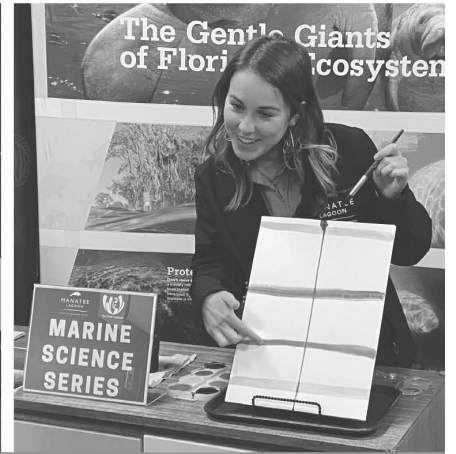
Example:



The title of the presentation is “Roller Coaster Physics” and is at the elementary and middle level. The session is in Room 102. The name of the Presenter is Jane Doe from an Elementary School.

Note: There will be a couple of sessions that will take 2 block periods. These are on Saturday and labeled in the program.





At **Florida Power & Light Company** we are committed to working with the educators in our community to enrich their curricula by providing tools and resources that foster students' interest in STEM.

For more information about our STEM programs, please visit **[FPL.com/education](https://www.fpl.com/education)**.

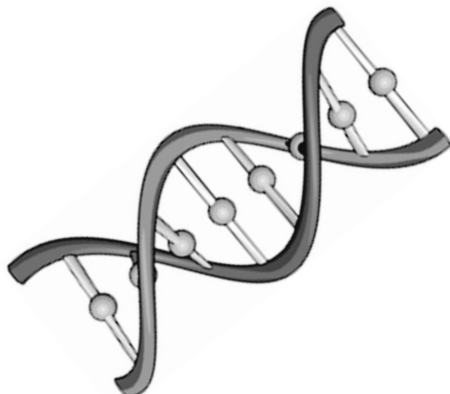
Knowledge is Power!



Workshop

Workshop Schedule

is on
pages 10–12
of the
program book.



SOCIAL EVENT MEET AND GREET! 5:30—7:30PM

Meet and Greet!

Thursday, October 19, 2023

Time: 5:30 PM – 7:30 PM

Cost- FREE!

Location: Hotel Atrium

Educators only, no guests!

MUST have PRE-REGISTERED! Also,
you must be **REGISTERED** for the conference
to attend.

Join your colleagues for a few hours of relaxation. Meet your FAST Board and have fun while learning the best way to get the most from the conference. Drinks and light appetizers will be served. Win prizes provided by Accelerate Learning. This event is free and open to all educators (no guests).

Sponsored by
**Accelerate
Learning
&
FPL**

Free Coffee/Sweets in the Vendor Hall @ 8:00am

8:15—9:15AM Concurrent Session 1

Ignite Curiosity..... Elevate Engagement

A

Citrus

Zipporah Miller, Savvas Author

This session will model how to create purposeful, scaffolded problem-based learning experiences. Participants will engage in experiences that model how to use storylines based on student questions to drive learning. Shift the learning from focusing on a single topic to focusing on trying to figure out why something is happening.

Microgreens in the Classroom - Grow Kit Activity

A

Cypress

Miranda Julian, Education Outreach Legacy Greens Corp

This session will introduce participants to what microgreens are, how quick and easy they are to grow in a classroom, and the various ways they can be used to enhance existing lesson plans.

The OpenSciEd Instructional Model: Routines for Advancing Students through a Storyline

M

Magnolia

Andrew Whittet, Consultant, Activate Learning

Using a storyline approach, a logical sequence of lessons that are motivated by students' questions that arise from their interactions with phenomena. We will do activities that play specific roles in advancing the storyline with structures to help students grades 6-8.

Exploring Energy: Hot Bulbs

M, H

Palm

Lisa Kelp, VP, Learning and Development for Lab-Aids

Explore the concepts of energy transfer by measuring and comparing the amount of thermal energy produced, applying the law of conservation of energy, and calculating how much of the electrical energy supplied was converted to light energy.

Developing and Using Models in the Science Classroom

E, M

Salon A

Stacey O'Connor and Crystal Emery, Regional STEM PD, STEMscopes by Accelerate Learning

Be part of the fun and be ready to talk science! This hands-on session will explore current standards to discover ways students can use models to develop and communicate scientific understandings. Reflect on ways models can enhance your instruction while adhering to your state education standards.

Engaging Students through Phenomenon-based Lessons in 30 Minutes or Less

E

Salon B

Madison Evans, Science Development Editor, Hand2Mind

Let's explore how to evoke curiosity and investigation, all in 30 minutes or less! During this session, we will dive into science phenomena by leveraging the 5E instructional model, and model engaging science lessons!

Using Engineering Design to Spark Curiosity in Grades K-5

E

Salon F

Desiree Siegel, Kim Seaver, Ryan Carlson, Matt Timm, Elementary Science Program Specialists, Orange County Public Schools

This session will engage elementary teachers in using the hands-on engineering design process to provide meaningful grade level standards instruction, spark curiosity, and increase proficiency in student achievement.

9:30—10:30AM Concurrent Session 2

Taking Your Environmental and Ecology Curriculum to the Next Level

M, H

Citrus

Kim Brown and Kaitlin Plante, Classroom Teachers, iCEV

In this session you will learn how to earn acceleration points for your school, extra funding for your classroom and a monetary bonus for the teacher. All attendees will receive a free 30 day pilot of the full program. Florida DOE has approved a CAPE Certification and Ducks Unlimited for Environmental and/or Ecology courses. Per State Board of Education Rule 6A-6.0573(15)(c), these academic courses may test and earn the acceleration points along with the funding that is allowed to all CTE courses.

Creating Curiosity with Field Site Hands-on Experiences

M, H

Magnolia

Louise Chapman, Environmental STEM Resource Teacher, and **Amy Monahan**, STEM Specialist, Volusia County Schools

We will use investigations to create excitement and integrate standards for high stakes exams in science. There will be great materials to take home and use in the classroom and outside the classroom.

Why Can't We Walk through Walls? A Quantum Storyline

H

Palm

Christopher Moore, Director, STEM TRAIL Center, University of Nebraska Omaha

A sugar cube. That's the volume of the particles in your body. You're mostly empty space but you seem solid. Why can't you walk through walls? We'll connect forces, electrostatics, and an exciting quantum storyline. Attendees will use a simple Hooke's Law mass-spring system to develop a model of chemical bonds in solids, called an Einstein solid model.

Effective Literacy and Writing Strategies in the Science Classroom

E

Salon A

Crystal Emery, STEMscopes by Accelerate Learning

Come learn how to use effective literacy strategies so that students can better understand science content. Student understanding and critical-thinking skills will improve with these techniques. Join our constructivist approach that promotes literacy in the science classroom.

Integrate and Educate

E, M

Salon B

Juliana Texley, Lesley University, JASON Learning, and **Ruth Ruud**, Cleveland State University

STEM is not 4 letters! It is an integrated approach to the whole child that uses literature, arts, science and engineering.

Connecting STEAM PBL to the Workforce

A

Salon C

Candace Finley, Executive Director and Founder, eSTEAMed Learning, Inc.

Do you want to make your STEAM PBL more meaningful? Join me as I introduce you to the STEAM In Unity Model to cultivate career focused STEAM lessons! The first 20 attendees will receive a free copy of the book.

Hands-on Strategies for Creating Curiosity, Relevance, and Fun in the Biology Classroom!

M, H

Salon F

Tiffany Oliver, IB Biology instructor and PAEMST Awardee, Robinson High School, Hillsborough County Schools

Do and learn fun hands-on strategies that can be adapted to almost any lesson topic with minimal resources. Help students connect the classroom and the real world, and make them excited to learn biology!

Python Problems: Pairing Place-based Phenomena and Modeling for Positive STEM Outcomes

A

Salon G

Heather Skaza Acosta and **Jessica Marcolini**, Florida Gulf Coast University

Participants are introduced to a 5E lesson that integrates live a laboratory experience with systems modeling to understand the complexity of invasive Burmese python population growth. Participants will be introduced to engaging tools that support student model use and creation.

10:45—11:45AM Concurrent Session 3

Level Up: Green Schools Inspiring STEM Engagement

A

Citrus

Christy Folk, Program Manager, and **Karolyn Burns**, Curriculum Manager, The CLEO Institute

Curiosity is rooted in questions, and the driving question behind green schools is, how sustainable is our school, and how could we improve? Learn from successful case studies and get resources to implement your own green school program. These competitive green school programs can be implemented on various scales, from competition between students within a single classroom, to classes within a school, to schools within a district, and even on a national scale.

Claims, Evidence & Reasoning (CER) and Interactive Word Walls

A

Cypress

Julie Jackson, Texas State University

CER statements scaffold students as they write and speak about science. We will describe what counts as evidence, consider the connection between scientific claims and evidence, and practice using interactive word walls and CER statements to support scientific discourse.

Minecraft in the Classroom: It's Not Just for Gaming

A

Magnolia

Michelle Roberts, STEM Camp Director, State College of Florida Coding Academy

Are you looking for a way to get instant buy in with your students in lessons? Looking for high engagement yet critical thinking ideas? Just say Minecraft to your students. Ideas and lesson plans included with presentation.

10:45—11:45AM Concurrent Session 3

Engaging Students in Science on Day One!

M, H

Palm

Cheyenna Novotny, Science Specialist, Escambia County Public Schools

What if you engaged students right away in inquiry? What if they went home and said science was their favorite class? Learn how to easily facilitate a controlled experiment over the first few days of school! Participants will be given an investigable question and work in groups to design an experiment from start to finish during this session.

Bringing the Ocean to the Classroom

M, H

Salon A

Jennifer Adler, National Geographic Explorer

Exploring creative ways to bring the ocean to your students through 360 VR, videos, art, and fascinating science happenings in the field. Dr. Adler specializes in photography and is a trained free diver and cave diver which allows her to document stories in challenging underwater environments. Her degree is in interdisciplinary ecology from the University of Florida.

Florida's Tesla Tale

M, H

Salon B

Carlos Villa, Director of K-12 Education Programs, National High Magnetic Field Laboratory, FSU

The National MagLab (Tallahassee) leads the world in electromagnetic research. Learn how we built the world's strongest magnet and what we do to keep that record. A giveaway for every teacher!

Curiosity? Not your USUAL Elementary STEM Workshop

E

Salon C

Linda Culpepper, Learning and Development for Lab-Aids

Join us in this engaging workshop where participants are challenged to design, build and test a vehicle that will move a toy. This activity is one of 10 engineering challenges that you can incorporate into your class.

Using the Arts to Teach Patterns and Cycles Associated with the Earth in Space and Time

E, M

Salon F

Jody Hodges, Science teacher, Creator of Science-Wear.net

Participate in songs, skits, and hands-on projects to make Earth and space less intimidating and fun for all. Create an apron (wearable anchor chart) illustrating moon phases and other standards like rotation, revolution, seasons, tides, and eclipses. Door Prizes!

Hands-on Plus! Driving Student Centered Learning with the Smithsonian

E

Salon G

Hoover Herrera, Carolina Biological Supply Co.

Learn through doing investigations how Smithsonian Science for the Classroom engages students with science and engineering practices and promotes scientific literacy for all students. Leave with classroom materials.

Vendor Hall

Closes

for vendor lunch

12:30-1:00pm

**However, concurrent sessions
are still occurring**

(see 12:15-1:15 concurrent sessions #4).

12:15—1:15PM Concurrent Session 4

CS Connections Simulating Marine Ecosystems: A Hands-on STEM Learning Experience for Elementary Students

E

Citrus

Donna Barton, Teacher, Clay County Schools

Code.org's new module teaches students the impacts of overfishing. By utilizing basic programming skills, students will create ecosystem simulations as they restore balance to a digital marine life ecosystem on the verge of overfishing.

Engaging Curiosity Across Linguistic Differences

M

Magnolia

Maria Hill, Oakridge Middle School, Collier County Public Schools

A workshop developed from real life classroom experiences effectively teaching science to English language learners while fostering their curiosity and love for scientific exploration. You will leave with a toolkit of strategies, resources and experiences to support your ELL students.

Build Strong Investigative Skills Using a Cross-Curricular Approach to Address a Significant Environmental Concern

H

Palm

Amy Strong, Consultant, National Geographic Learning/Cengage

Ocean acidification will be used to address biology standards relating to conducting investigations and data analysis which are front and center on the state assessments. This session will use a cross-curricular approach tying in environmental science and chemistry concepts.

I Can't Do It! Failure Equals Success

A

Salon A

Sue Bedard, President, and **Linda Gowen**, iBuild Academy

We have all heard that cry during a STEM project. But what to do about it? This session helps you embrace failure. Proven strategies to overcome the fear of failure to complete a STEM Challenge will be shared. Some of the strategies and ideas are personalizing a project, confidence building, and concept generation before beginning to build and then sharing those ideas with peers.

How Interactive Simulations and STEM Cases Address the Florida Statewide Science Assessments

A

Salon B

Mario Junco, Senior Implementation Coordinator, ExploreLearning

In this session, participants will learn how online simulations and case studies can directly address item specifications in grade 5, grade 8, and grade 10 (EOC) Florida Statewide Science Assessments. The simulations highlighted here will be ExploreLearning Gizmos.

From CRISPR to 3-Parent Babies: The Revolution in Human Genetics

M, H

Salon C

Kenneth Miller, Professor of Biology, Brown University

Techniques such as CRISPR, mitochondrial transfer, and mRNA therapeutics have opened up new possibilities for genetic manipulation, bringing with them new possibilities that can energize the biology curriculum.



Solar Cookers: Thinking Outside the Box (Oven)

A

Salon F

Susan Schleith, Program Director K-12 Education, Florida Solar Energy Center, University of Central Florida

Explore solar cooker designs, building techniques, low and no-cost materials and how to use cookers with STEAM-E(nergy) results. Receive design plans for a variety of cookers and activities aligned with science standards. Prizes and give-aways!

Impacts of Undergraduate Students Contributing to STEM K-12 Teacher Professional Development Programming

A

Salon G

Jessica Marcolini, Assistant Director, **Heather Skaza Acosta**, Director, and **Patricia Ale**, Undergraduate Student, Whitaker Center for STEM Education, Florida Gulf Coast University

Research from our STEM teacher PD program investigates the influence of undergraduate students' contributions to teacher PD. Attendees will receive firsthand perspectives from undergraduate students and preliminary findings that highlight the impacts of these reciprocal relationships.

1:30—2:30PM

Concurrent Session 5

Saving Silver Springs

E

Citrus

Matthew Stanley, K-12 Outreach Scientist, **Brian Abramowitz**, Outreach Coordinator, **Thompson Earth Systems Institute**, and **Erin Benavides**, Resource Teacher, Silver River Museum

Saving Silver River utilizes research and hands-on activities to pique students' curiosity and take charge of Florida's water quality. Students will examine environmental challenges impacting water quality and explore the balance between natural areas and recreational activities.

Promoting Science Appreciation with #ScienceSaves

A

Cypress

Kenny Coogan and **Bertha Vazquez**, The Teacher Institute for Evolutionary Science

ScienceSaves promotes the fact that science makes life safer. Our free lessons teach graphing, data analysis, and engineering practices. They include teacher notes, standards, rubrics, and lesson plans. Check out our \$15,000 scholarship for US seniors.

1:30—2:30PM

Concurrent Session 5

Solar Eclipse Double Header of the 2023-2024 School Year

A Magnolia

Katrina Madok, STEM, Gifted Teacher, Gerald Adams Elementary School

Are you ready for the solar eclipse of April, 2024? Come discover valuable tips and teaching resources to engage your students learning about solar eclipses and safe viewing techniques. Attendees will learn creative ways to make solar viewers.

Man's Best Friend, Mendelian Genetics and Modeling

H Palm

Amy Strong, Consultant, National Geographic Learning/Cengage

Develop models and create an argument from evidence while addressing Mendelian laws of segregation and independent assortment to analyze patterns of inheritance in dog breeds.

Integrating the Arts into the Science Classroom

A Salon A

Crystal Emery and **Stacey O'Connor**, Regional STEM PD, STEMscopes by Accelerate Learning

Arts integration is a holistic approach that includes creativity, critical thinking, collaboration, and communication. Learn how poetry, music, storytelling, drama, visual art, and creative movement can be meaningfully embedded within the science curriculum.

Outdoor Learning, Field Trips & Data Collection Using Survey 123

M, H Salon B

Kandi Follis, TSA Secondary Science, and **Ryan Westberry**, Secondary Science Coordinator, Collier County Schools

A Survey123 will be used to collect data, and you will create your own Survey 123 that will enable your students to collect data in the field.

Supporting Open-Ended, Inquiry-based Instruction through CPALMS

A Salon C

Robert Hanna, **Jim Reynolds**, and **Carrie Meyers**, STEM Specialists, CPALMS / Learning Systems Institute at FSU

Looking to grow your instructional toolbox to include more open-ended strategies? Join CPALMS to explore some of our FREE open-ended resources and learn about the research that supports their effectiveness in the K-12 classrooms.

Aquaculture in the Classroom

M, H Salon F

Katrina Bayliss, Biological Administrator, Florida Department of Agriculture and Consumer Service

Learn about aquaculture in Florida and around the world, take a crash course on starting an aquaculture program at your school, and learn about the free resources available to you and your fellow Florida educators!

Quick and Easy Experiments Using the Latest Technology

M, H Salon G

Ann Hammersly, Vernier

Collecting and analyzing experimental data has never been easier using Vernier technology in your lab. Bring your own device with our Graphical Analysis 4 app installed or use our devices during the workshop. All activities are available as a free download for attendees.

2:45—3:45 PM

Concurrent Session 6

The 3 C's Model for Successful Science Instruction

A Citrus

Megan Joyner-Hull, **Debra Goff**, Instructors, North Fort Myers Academy for the Arts, and **Dr. Jessica Marcolini**, FGCU Whitaker Center for STEM Education

Learn the 3 C's for effective science instruction: curiosity, culture, and commitment. We will cover curiosity-based lesson design, how classroom culture impacts grit, and strategies to develop reflective and accountable learners. Attendees will receive a complete lesson plan!

Comparing Hominid Skulls without the Expensive Models

H Cypress

Bertha Vazquez, Education Director, The Teacher Institute for Evolutionary Science

This essential biology investigation requires students to compare hominid skulls, studying the morphological changes as humans evolved. Skull models cost thousands of dollars. Do this important investigation for free with our slide presentation, student instructions, 2D skulls, and online resources.

Friday, October 20, 2023

COOKIE/LEMONADE BREAK in the Vendor Hall @ 2:15pm

Storyline Mastery: Empowering Students through Engaging Lessons with the 5E Model

H **Magnolia**

Nicole Holman, District Coach, Hillsborough County Schools

Transform the science classroom into a student-led journey where students' curiosity is sparked through immersive storylines that seamlessly integrate the Next Generation Science Standards (NGSS) and Florida Benchmarks (NGSSS), delivering captivating and impactful science learning experiences.

Shift Your School's Environmental Stewardship Culture: Interdisciplinary Everglades Curriculum and Champion Schools Program

A **Palm**

Alicia Torres, Alyssa Saldarriaga, Jennifer Diaz, Everglades Literacy Program

Give your students inquiry-based learning opportunities that empower them to ask questions and create meaningful change addressing environmental issues of the Everglades and their local communities. Learn strategies for incorporating student-led action into your K-12 curriculum!

No Time to Lose! Innovating TESOL Strategies for Science Education

E, M **Salon A**

Dr. Tony De Souza and Milt Huling, STEM Professors, Polk State College

Join No Time to Lose! Innovating TESOL Strategies for Science Education, a predominantly Japanese-led session. We'll explore ELL experiences, introduce immersive activities, engage science teaching methodologies, and demonstrate their transformative effect on ELL students' academic achievements.

Using an Engineering Mindset to Enhance Science Instruction through Problem-based Learning

M, H **Salon C**

Jim Reynolds, Robert Hanna, and Carrie Meyers, STEM Specialists, CPALMS/LSI, FSU

Ready to engage your students with real-world problem-based learning opportunities? CPALMS has FREE resources for public K-12 classrooms to foster an engineering mindset and support transfer of learning!



Classroom Use of the Florida Geomorphology Atlas

E, M, H **Salon B**

Christopher Williams and Michelle Ladle, Professional Geologists, Florida Geological Survey, Florida Department of Environmental Protection

The Florida Geomorphology Atlas is an online publication that classifies and describes Florida's landforms. Explore the science practices used to create the Atlas, earth processes that craft Florida's landforms, and how to investigate these with your students.

Curiosity Will Set You Free: A Science Escape Room

E **Salon F**

Susan Doss-Sheater, Global Learning Academy, and **Suzanne DeLay**, Science TSA, Escambia County Public Schools District

ESCAPE ROOM!! Have fun working through hands-on review activities in a Florida NGSSS-based escape room. You will leave with access to a digital copy of all resources, ready to print and go! Great for Family Science Night!

Presidential Awards for Excellence in Mathematics and Science Teaching

E, M, H **Salon G**

Alicia Foy, Florida Department of Education

The PAEMST awards are the nation's highest honors for K-12 teachers of STEM. Updates to the award application and answers to questions will be provided.

4:00—5:00PM

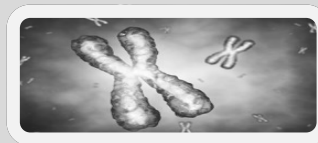
Concurrent Session 7

Creating Effective Science Anchor Charts

A **Citrus**

Laura Konters and Robin Musson, 9-12 Science Resource Teachers, Volusia County Public Schools

Participants will learn about different types of anchor charts, why they are effective tools in science, and why they should be created with students. Participants will then work with groups to plan out anchor charts to use in their classrooms.



4:00—5:00PM Concurrent Session 7

Science Starts with a Question

A

Cypress

Christine Angel Danger, University of South Florida Stavros Center, and **Lisa Lawson**, Hillsborough County Public Schools

When students create their own questions, they activate a part of their brain that is searching for an answer. We will provide a model illustrating how to help students ask good questions and use student questions to fuel inquiry.

Promoting Curiosity Using Relevant Biological Phenomena

H

Magnolia

Laura Shafer and **Rosiane Lesperance**, Program Officers, Teacher Development, Knowles Teacher Initiative

Engage in a task to explore ways to spark student curiosity about a biological phenomenon. You will expand your understanding of how science practices support students in building disciplinary core ideas and develop ways to increase student curiosity.

MarineLab's FREE Learning Resource: How to Bring Ecology of the Florida Keys into Your Science Classroom!

A

Palm

Erin O'Neil, MarineLab/Marine Resources Development Foundation

MarineLab has an array of FREE marine science lesson plans, videos and activities available online. Learn how to access the material, experience a bit of the content, and get ideas on how to incorporate the lessons into your classroom.

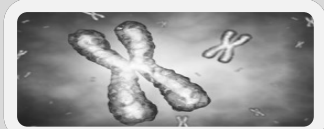
Enhancing Science Education through the Use of ChatGPT: Exploring the Benefits and Challenges

M, H

Salon A

Brandon Boswell, Cypress Bay High School, Broward County Public Schools

ChatGPT was released to much fanfare and consternation last November. Its brief utilization in my Biology classroom has had a compelling impact on my practice, students, and assessments. The dramatic and recent rise of generative AI applications will be discussed.



Welcome to the Moon Lab: Refining, Mining, and Moving on the Moon

E

Salon B

Amanda Walker, Elementary Science Training Specialist, Bay District Schools

Engage in a three part lesson modeling humans' relationship with the Moon from Galileo through the future Artemis Program with NASA's Moon to Mars objectives of interoperability and commonality of systems to create working, scientific systems on the Moon.

High Impact Strategies that Maximize Learning

E, M

Salon C

Jackie Speake Dwyer, CORE and STEM Education Consulting, NSTA Press Author

Students are naturally curious about scientific phenomena. How do we engage student curiosity and ensure deep understanding of why or how a phenomenon occurs? This session will provide that answer! (Hint: High impact strategies, including collaboration, feedback, differentiation, and metacognition.)

Teaching Physics in a Space Science Context

M, H

Salon F

Kevin L. Simmons, Aerospace and Innovation Academy, BLUECUBE Aerospace, Wolfpack CDT

Join this hands-on session to engage in integrated activities for physics/astronomy teachers who want to incorporate authentic NASA data into the classroom. Participants will use resources developed by physics education researchers through the NASA Heliophysics Education Activation Team.

From Television to the Classroom

A

Salon G

Patrick Greene and **Dr. Mike Heithaus**, Symbio Education

In this session, we will discuss how using modern television technology and strong storytelling techniques increases engagement and inspires students about science. We will showcase the high-tech tools used in filmmaking and how they blend with data collection for scientists.



Friday, October 20, 2023

Vendor Hall

closes
Friday at 4:00pm

Concurrent Sessions

start at 8:00am
tomorrow morning.

Vendor Hall
Closed on Saturday

Make and Take Elementary and Middle

Saturday
9:15—11:30AM
Palm

Nicole Kuiper, Shelley Swearingen, Wendy Shelden, Cheryl Hanneman, Jennifer Marcoux, Rhonda Ripperger, Melissa Woods, Thomas Englert, Brevard Public Schools Cadre

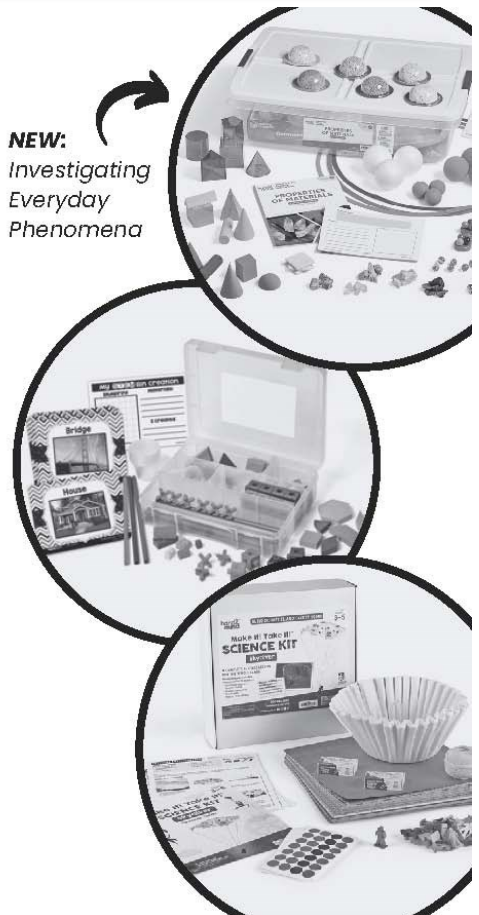
Join Brevard Public School Teachers for standards aligned activities for grades K - 8. Navigate through stations engaged in hands-on activities. Lesson plans for each activity will be provided on a flash drive.



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NEW:
Investigating
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Congratulations to our \$500 Classroom Grant Winners for Members Only

Kearston Andrews

Cedar Key School
Florida Museum of Natural History
FAST Area 3: Levy

Michelle Brady

Myakka River Elementary
Salsa Garden
FAST Area 9: Charlotte

Darien Burnitt

Clewiston Middle School
Crush The Rock
FAST Area 9: Hendry

Shana Creel

Yates Elementary School
Sensing Your Data
FAST Area 6: Hillsborough

Candace Finley

Esteamed Community School
National STEAM Day
FAST Area 5: Orange

Khyanne Green-David

Arthur and Polly Mays Conservatory of the Arts
STEM Today , Great INNOVATORS Tomorrow!
FAST Area 11: Miami-Dade

Frances Holder

Bradenton Christian School
Inquiry/Hands-On Labs
FAST Area 7: Manatee

Jeri Jersey

Orlando Science School
Little Einstein's Real World Science & STEM Education
FAST Area 5: Orange

Katherine Lawrence

Belmnt Elementary
The Butterfly Garden Project
FAST Area 6: Hillsborough

Hollee Myers

Orlando Science Elementary
Soap Box Racing
FAST Area 5: Orange

Joetta Schneider

Cedar Key School
Envisioning a UF Education
FAST Area 3: Levy

Caylee Thompson

Knights Elementary School
Growing Together for Success
FAST Area 6: Hillsborough

Sue Bedard

IBA2, Inc
STEM Hybrid Program
FAST Area 5: Volusia

Barbara Brock

High Springs Community School
Project YoYo (Up and downs of data collection)
FAST Area 3: Alachua

Amanda Choplin

Endeavour Elementary
Science Curtains and lab supplies
FAST Area 8: Brevard

Princess Marie Duenas

Orlando Science Elementary School
Let A Million Flowers Bloom
FAST Area 5: Orange

Chris and Judy Gatzke and Bremner

Sawgrass Springs Middle School
Gifted Science Education
FAST Area 10: Broward

Maria Hill

Oakridge Middle School
Hands-On Language Learning in Science
FAST Area 9: Collier

Stephanie Irish

Mike Davis Elementary
Nature of Science for Fifth Grade!
FAST Area 9: Collier

Lynn Jones

Leon Regional Juvenile Detention Center
Urban Farming is Our Future
FAST Area 2: Leon

Lisa Lawson

Claywell Elementary School
Generating Geniuses!!
FAST Area 6: Hillsborough

Elaine Sanchez

Crystal Lake Elementary
Butterfly Garden / Monarch Waystation
FAST Area 8: Martin

Hailey Sonn

Orlando Science Elementary School
Boldly Go: A Year-long Hands-on STEM Exploration
FAST Area 5: Orange

Brenda Zarate

Orlando Science School
Middle School Life Science, Robotics and Coding,
Science and Technology, Science Behind the Science
FAST Area 5: Orange

Classroom Grant recipients must see Nancy Besley, FAST treasurer, to receive the award

Congratulations to our \$400 Travel Grant Winners for Members Only

Sue Bedard

IBA2, Inc
FAST Area 5: Volusia

Rae Bland

Central Middle School
FAST Area 8: Brevard

Maritza Cazeau-Michel

Westview PreK-8 School
FAST Area 4: Duval

Lainie Clowers

Dream Lake Elementary
FAST Area 5: Orange

Matthew Delorey

Meadowlawn Middle School
FAST Area 6: Pinellas

Susan Doss-Sheater

Global Learning Academy
FAST Area 1: Escambia

Kaye Ebelt

The Greene School
FAST Area 10: Palm Beach

Gena Feury

Oasis Elementary South
FAST Area 9: Lee

Melvin Figueroa-Mateo

New River Middle School
FAST Area 10: Broward

Stephanie Irish

Mike Davis Elementary
FAST Area 9: Collier

Lynn Jones

Leon Regional Juvenile Detention
Center
FAST Area 2: Leon

Samantha Krug

Wesley Christian Academy
FAST Area 5: Lake

Heather Magill

Palm Springs Middle School
FAST Area 10: Palm Beach

Charissa ONeal

Charger Academy
FAST Area 4: Duval

Sandy Pond

J. Allen Axson Montessori
FAST Area 4: Duval

Autumn Powers

Meadowlane Intermediate
FAST Area 8: Brevard

Lia Reisner

Davenport High School
FAST Area 6: Polk

Holly Shema

Abraham Lincoln Middle School
FAST Area 3: Alachua

Suzanne Stout

JD Parker Elementary
FAST Area 8: Martin

Caylee Thompson

Knights Elementary School
FAST Area 6: Hillsborough

Amanda Walker

Bay District Schools Staff Training
Specialist
FAST Area 2: Bay

Nominated by Teacher's Science Supervisor for a SPECIAL Travel Grant!

Brian Behrens

Supervisor: Shana Tirado
FAST Area 6: Hillsborough

Louise Chapman

Supervisor: Amy Monahan
FAST Area 5: Volusia

Jessica Odom

Supervisor: Thomas Hil
Baker County Middle School
FAST Area 3: Baker

Marla Robles

Supervisor: Jennifer Taylor's
FAST Area 5: Volusia

Suzanne Ryals

Supervisor: Cheyenna Novotny
FAST Area 1: Escambia

Sylvia Whitney

Supervisor: Jennifer Taylor
FAST Area 5: Volusia

Travel Grant recipients must see Nancy Besley, FAST treasurer, to receive the award packet!



Discover

Youth Educational Resources from the UF/IFAS Extension Bookstore

The UF/IFAS Extension Bookstore offers educational resources that deliver **practical solutions for the challenges Floridians face**. Our products are the result of collaborations between research scientists and educators from the UF campus, 13 Research and Education Centers, and 68 Extension offices statewide.



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SAVE the DATE!

Next year's **FAST conference** will be held at the

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Busch Gardens**

3705 Spectrum Blvd, Tampa, FL 33612

October 24-26, 2024

See you there!

Your Conference Committee

Barbara J. Rapoza, Sharon Cutler, Nancy Besley, Dr. Gary A. Yoham and Dr. Yvette Greenspan

Saturday, October 21, 2023

Free Coffee/Sweets in Registration Area @ 7:45am

8:00—9:00 AM Concurrent Session 8

Unplugged Coding through Standards in Small Group

E Citrus

Michele Wiehagen, K-5 Science Resource Teacher, and **Melissa Triebwasser**, Assistant Principal, Buckhorn Elementary

Using tools and unplugged tasks, participants will engage in coding activities to utilize within their science content. Participants will walk away with resources to show how coding is not just computer science but can be embedded within science.

Design an Experiment for the International Space Station!

M, H Cypress

Marc Bliss, Genes in Space Program, miniPCR bio

Engage students in authentic research through Genes in Space, the experimental design competition that launches experiments to the International Space Station. Learn about free educational resources, including lesson plans, classroom activities, explainer videos, and biotechnology equipment loans.

Science Education in the World's Least Visited Country

A Sales Office 2

Terence W. Cavanaugh, University of North Florida

A call came from the Department of Education in Tuvalu for assistance in improving high school science test scores. This session will share the discoveries and issues and solutions presented. Learn how you can become part of the Fulbright Specialist Program.

Creating Public Health Influencers for the 21st Century

M, H, C Magnolia

Barbara Garcia, West Coast University

Students become influential agents of change by leveraging social media for communicating crucial public health messages. This classroom activity, The Influencer Challenge, involves selecting topics, researching, creating impactful content, and collaborating with peers to inspire positive behavioral shifts in health. We have the ability to leverage the transformative power of students as influential agents of change to improve public health messaging.

Aquatic Species Collection Workshop

A Boardroom

Double Session 8 & 9

8am to 10:10am

Dawn Miller-Walker, Owner, Consultant, Educator, Science Eye & ECO

Learn best practices for collection, transport, holding, how to minimize environmental impact and collection alternatives. No fishing license required. This workshop is for Florida educators/volunteers of schools or educational centers. This certification through FWC is good for 3 years.

Orion Splashdown

A Business Center

Mary Vaughn, Teacher Earth & Space Sciences, Hillsborough Schools

Learn about the Orion capsule. Use the Engineering Design Process to design and test a capsule that is neutrally buoyant, watertight, and meets the requirements. Engage all students to incorporate engineering and math concepts with easily accessible materials and build teamwork

9:15—10:15 AM Concurrent Session 9

Helping Students Understand the Latest Research on Climate Science

H Citrus

Michael Wyssession, Professor of Geophysics, Center for Teaching and Learning, Washington University, St. Louis

Professor Michael Wyssession is the Chair of Earth and Space Science for the NRC Framework for K-12 Science Education, and will address how students can best learn the latest climate science, including impacts to Florida, using NASA satellite data and IPCC research.

The Bones of STEM: Student-Centered Teaching through Forensic Anthropology

A Cypress

Micki Besse, **Savanna Agilar**, Lab Technicians, Forensic Human Identity and Trauma Analysis, **Heather Walsh-Haney**, Professor, Department of Justice Studies, **Heather Skaza Acosta**, and **Jessica Marcolini**, **Directors**, Whitaker Center for STEM Education, Florida

Session attendees will learn about an on-going forensic anthropology teacher training program at Florida Gulf Coast University, participate in a mock forensic anthropological field recovery, and brainstorm methods for implementation of these lessons in their classroom.

9:15—10:15 AM Concurrent Session 9

Student Engagement through Classroom Transformations

A

Magnolia

Darcy Wylie, Sunshine Educational Services, and **Debra Lee**, Teacher, Oasis Elementary School

Do you want to transform your classroom into an immersive learning experience for your students, but don't know where to start? Learn how to transform your room on a budget, as well as the steps for planning your transformation! Experience a classroom transformation into a hospital from the students' point of view, feeling the same excitement and curiosity. Participants will work through stations related to the hospital.

Brevard Public Schools Make and Take

E, M

Palm

9:15 – 11:30 AM

Nicole Kuiper, **Shelley Swearingen**, **Wendy Sheldon**, **Cheryl Hanneman**, **Jennifer Marcoux**, **Rhonda Ripperger**, **Melissa Woods**, **Thomas Englert**, Brevard Public Schools Cadre

Join Brevard Public School Teachers for standards aligned activities for grades K - 8. Navigate through stations engaged in hands-on activities. Lesson plans for each activity will be provided on a flash drive.

Engaging Students in Science Using Materials Household Materials

M, H

Parlor 212

Katrina Pressley, Science Technology Teacher

Participants will experience what a day is like in my physics classroom during the 1st few days of school. You will have the opportunity to participate in a stations lab and construct a rover.

DIY Demo Day

M

Sales Office 2

Jessica Odom and **Sharon Holtom**, Science Teachers, Baker County Middle School

Celebrate science at your school by creating a special day for your students they are sure to remember. Educators will learn to create and facilitate a Demonstration Day for students to reinforce Nature of Science concepts and increase student engagement.

The Magnets and the National MagLab

E

Sales Office 1

Carlos Villa, Director of K-12 Education Programs, National High Magnetic Field Laboratory, FSU

The National Magnet Lab (Tallahassee) presents the ultimate session on magnetism for elementary grades. This session covers magnets, their properties, and lesson ideas for your classroom. A unique souvenir for all teachers that attend!

Medical Technology Devices Utilized in Health Informatics

A

Business Center

Michelle Ramin, College of Osteopathic Medicine, Nova Southeastern University

The presentation will include a demonstration of wearable medical/technology devices used in the Health Informatics program at Nova Southeastern University. These devices are designed for health maintenance, and patient and disease management. In addition, a demonstration of the use of social humanoid robots capable of exhibiting emotions such as empathetic expressions will be provided. See how social humanoid technology is utilized in health care.

10:30—11:30AM Concurrent Session 10

Student Curiosity, Questions, and the Nature of Science

A

Citrus

Susan Cooper and **Jessica Marcolini**, Whitaker Center, Florida Gulf Coast University

Participants will explore how good questions and formative assessments can capitalize on student curiosity while supporting understanding of the nature of scientific knowledge in an interesting activity that can be applied to many areas of science. Students should have experiences making decisions as scientists through thoughtfully planned activities.

The Synthesis of Photosynthesis

A

Cypress

Cindy Davidson and **Michelle Metzler**, Youth Environmental Alliance

Explore photosynthesis first hand and literally see it working! Learn how to use this activity to teach parts of your curriculum for Grades K to 12. Participants receive a free experiment starter kit including a how-to guide!

Cultivating Curiosity Inside and Outside the Classroom using an Interdisciplinary Everglades focused STEAM Curriculum

E

Magnolia

Alyssa Saldarriaga, Everglades Literacy Program Coordinator and **Jennifer Diaz**, Vice President of Education

Learn about the Everglades Literacy Program, a place-based, interdisciplinary STEAM curriculum that navigates the Everglades watershed, including free, hands-on lessons and resources to explore water, wildlife, and habitats, by inspiring curiosity inside and outside the classroom.

From Content to Context: How Background Knowledge Shapes the Science of Reading in Neurodiverse Learners

E

Boardroom

Dr. Praba Soundararajan, Dyslexic Social Innovator, Boon-dah Learning

Children can understand text better if they have some background knowledge. Integrating literacy and content-area instruction can help improve comprehension in the elementary years.

Using Engineering Design Challenges to Teach Content Standards Anchored in Phenomena

E

Parlor 212

Melissa Triebwasser, Assistant Principal, and **Michele Wichagen**, K-5 Science District Resource Teacher, Hillsborough County Public Schools

How do engineering design challenges fit into our content standards? Participants will engage in phenomena-based engineering design challenge that align to grade level standards. Participants will walk away with lessons to implement immediately, materials, and aligned resources.

Learning to Love Odyssey of the Mind

A

Business Center

Amanda Howell, Education Trustee, Florida Odyssey of the Mind

The participants will be able to ask questions and build with their hands. The teachers will get a snapshot of what opportunities are available for their schools. Odyssey of the Mind allows students to take a creative journey with STEAM.



Stimulating Curiosity through Inquiry and Scientific Practices

E, M

Sales Office 1

Michael Padilla, Author, Savvas Learning Company

Curiosity is a critical prerequisite to inquiry and scientific practices which are central to the Florida NGSSS science standards. This workshop will engage participants in activities and teaching strategies that will link curiosity to scientific thinking skills.

Using Phenomena and Actionable Norms for Effective Groupwork

H

Sales Office 2

Anna Monteiro, Associate Director of Senior Fellows Program, Knowles Teacher Initiative

Make groupwork a powerful learning experience by improving collaboration and increasing participation. Consider components of Complex Instruction; actionable norms, curriculum, and student status. Leave with a strategy to promote positive interactions and elevate student voice during groupwork.

Raffle

Magnolia meeting room

Saturday

11:30am to 12:30pm

**Thank You for
Attending**

See you next year!

FAST Board for 2022-2023

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Khyanne Green
Area 11

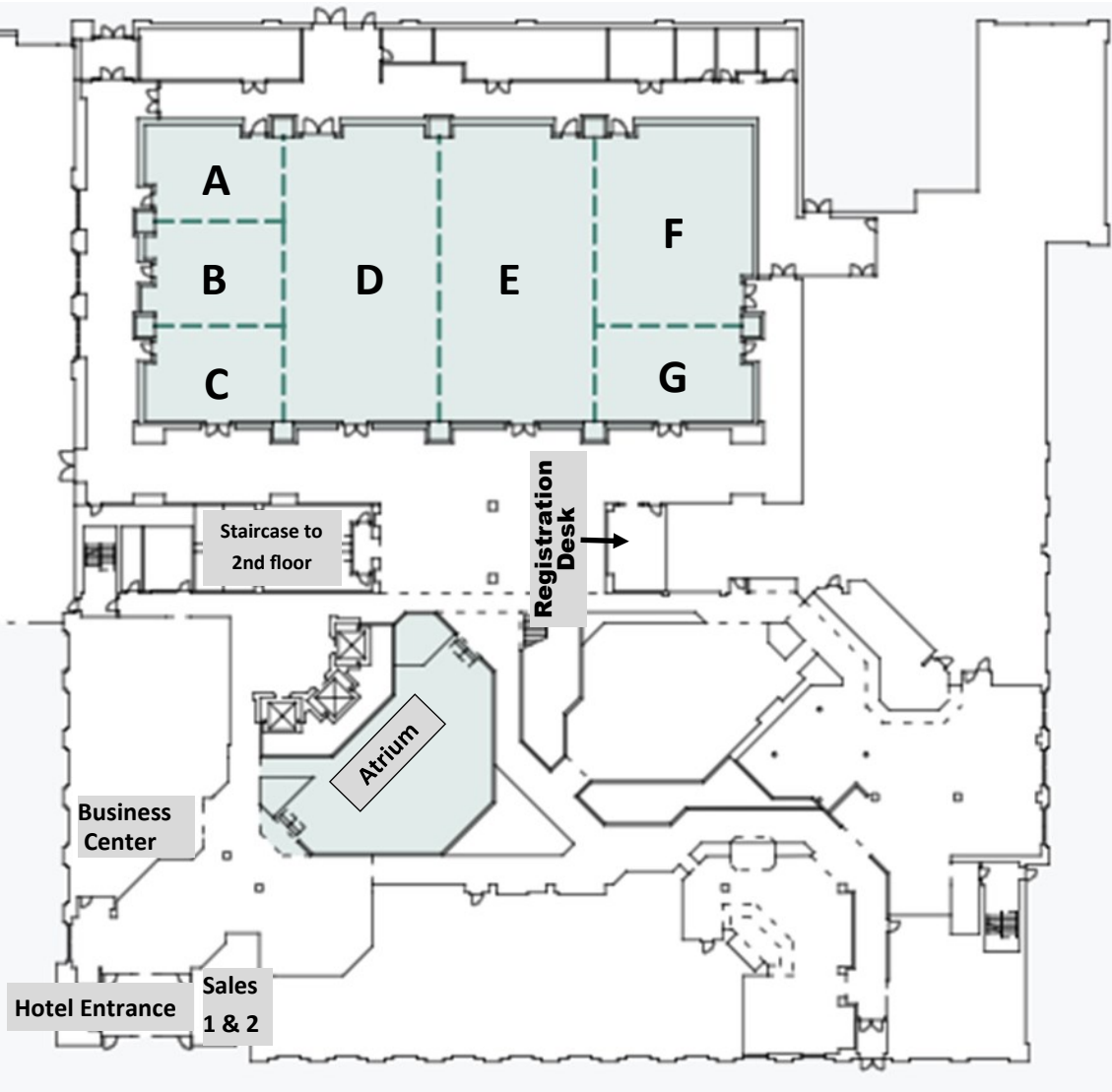
The Florida Association of Science Teachers (FAST) is the state's largest **non-profit** professional organization dedicated to improving science education at all levels, pre-school through college. It is operated by a board of **volunteers** who have extensive experience in science education.

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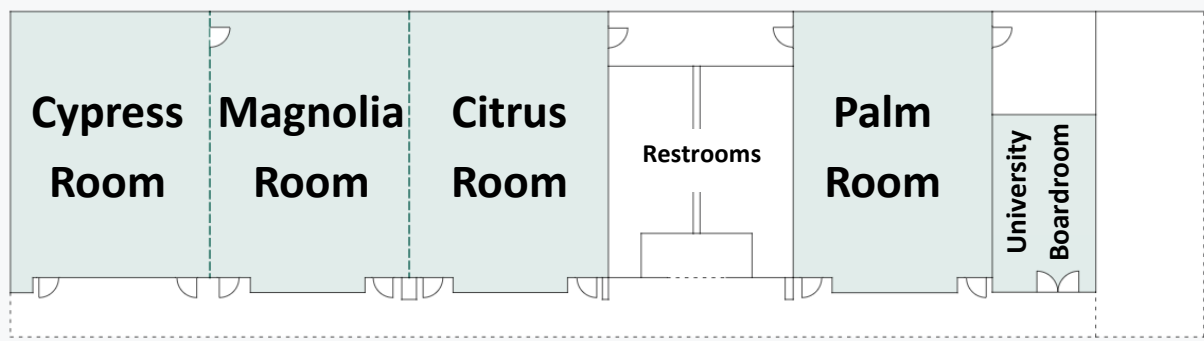
Clyde Reed	1948-1949	Frances Stivers	1974-1976	Mark Tohulka	1999-2000
Dan E. Moomaw	1949-1950	Carolyn Blakney	1976-1977	Marilynn Opper	2000-2001
Gordan C. Reeves	1950-1951	Allo Anderson	1977-1978	Dan McFarland	2001-2002
Joel Martin	1951-1952	Charles Sheppard	1978-1979	Liz Hunnicutt	2002-2003
Leo Boles	1952-1953	Ed Wimmers	1979-1980	Barbara J. Rapoza	2003-2005
Sarah Clark	1953-1954	Mary Timmons	1980-1981	Lori Braga	2005-2006
Ned Bingham	1954-1955	Carol Collins	1981-1982	Karen Malesky	2006-2007
Mary Ruby Johns	1955-1957	Marie Oglesby	1982-1983	Steve Crandall	2007-2008
James Fitzgibbons	1957-1958	Lehman Barnes	1983-1984	Tom Medcalf	2008-2009
Mildred Reed	1958-1959	Carol Houck	1984-1985	Brad Tanner	2009-2010
Alice VanCleaf	1959-1960	Richard Sweetsir	1985-1986	Marsha Winegarner	2010-2011
Henry Graziano	1960-1961	David LaHart	1986-1987	Barbara J. Rapoza	2011-2012
Dempsey Thomas	1961-1962	John Bernreuter	1987-1988	Madge Nanney	2012-2013
Robert Kitzmiller	1962-1963	Carol Snell	1988-1989	Michelle Ferro	2013-2014
Margret Reeves	1963-1964	Nancy Griffin	1989-1990	Dr. Erick M Hueck	2014-2015
Louise Williams	1964-1965	Jean Olson	1990-1991	Sharon Cutler	2015-2016
Paul Plotts	1965-1967	Jay Feliciani	1991-1992	Dr. Gary A Yoham	2016-2017
Leo McDonald	1967-1968	Chet Bolay	1992-1993	ZoEllen Warren	2017-2018
Unknown	1968-1969	Winnie Wilson	1993-1994	Donna Barton	2018-2019
Louis Ash	1969-1970	Marcia Chackan	1994-1995	Amy Trujillo	2019-2020
Alex Goldweber	1970-1971	Jerry Murray	1995-1996	Mary Tweedy	2020-2021
Helen Webb	1971-1972	Carla Bruning	1996-1997	Marjorie Miles Dozier	2021-2022
Henry Frazee	1972-1973	Kathy Lewis	1997-1998	Sharon Cutler	2022-2023
Valerie Stivers	1973-1974	Mash Sutton	1998-1999		



Conference Map



First Floor



Second Floor

Session Planner

Thursday 10/19		Room	Name of Presentation
Workshop			
Workshop			
Workshop			

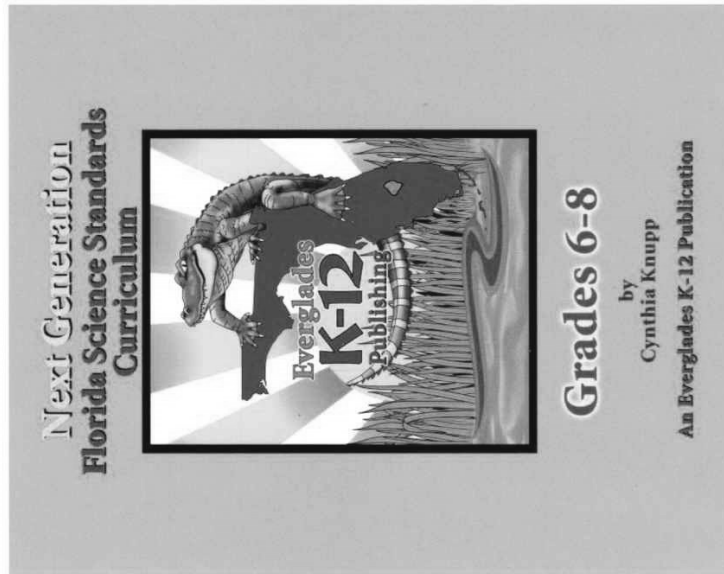
Friday 10/20		Room	Name of Presentation
Session 1	8:15-9:15 am		
Session 2	9:30-10:30am		
Session 3	10:45-11:45am		
Session 4	12:15-1:15pm		
Session 5	1:30-2:30pm		
Session 6	2:45-3:45pm		
Session 7	4:00-5:00pm		

Saturday 10/21		Room	Name of Presentation
Session 8	8:00-9:00am		
Session 9	9:15-10:15am		
Session 10	10:30-11:30am		

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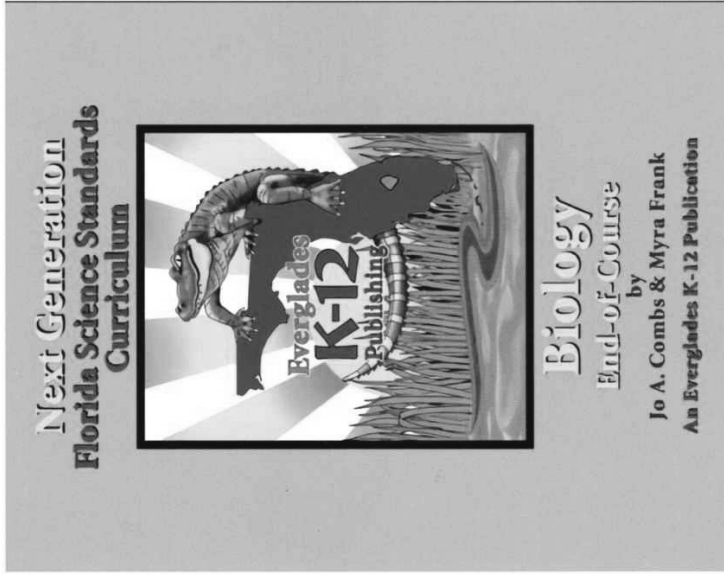
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6 microscopes/EXM-150DF-MS

hand2mind

Participant's Bags, Cookie & coffee break

Busch Gardens

Behind the Scenes Educational Program

Lab-Aids

Lanyards

World Strides

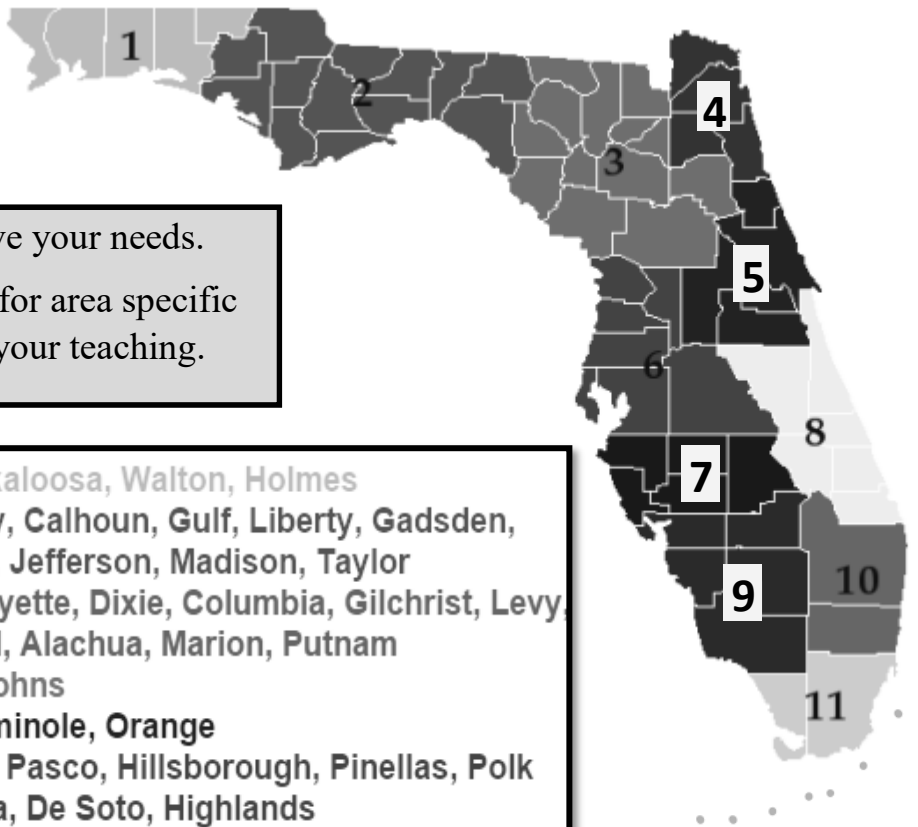
Cookie & coffee break

Everglades Foundation

Cookie & coffee break

BrainPoP

Cookie & coffee break



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Area 6: Citrus, Hernando, Sumter, Pasco, Hillsborough, Pinellas, Polk

Area 7: Manatee, Hardee, Sarasota, De Soto, Highlands

Area 8: Brevard, Osceola, Indian River, Okeechobee, St. Lucie, Martin

Area 9: Charlotte, Glades, Lee, Hendry, Collier

Area 10: Palm Beach, Broward

Area 11: Monroe, Dade

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tammy.pinnella@hdsb.org

villa@magnet.fsu.edu

mcordero@pky.ufl.edu

schnaussj@duvalschools.org

mparks@stetson.edu

ber_robinson@hotmail.com

jmnovello6@gmail.com

melissa.sleeper@indianriverschools.org

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