As president of FAST, it is my pleasure to welcome you to this year’s FAST Conference, “Navigating Through Science.” The past 18 months have been tough, so I encourage you to take advantage of all that the FAST Conference has to offer to help you in renewing your passion for science teaching and learning.

As you can see from our program, we have an excellent professional learning experience planned for you. The sessions will focus on making investigations more meaningful and interactive for students, developing authentic assessment strategies, linking literacy and science, understanding & implementing STE(A)M strategic instruction, personalizing science research and much more.

You’ll also be able to be part of the conversation on the benefits of progress monitoring, argument driven inquiry, CER, student-driven experiences, culturally responsive teaching and so much more.

The FAST Vendor Hall is a must-see with science education companies and organizations showcasing their products, services, and curricula. Hopefully you’ll find something new and exciting for your science teaching.

I want to personally thank the conference committee for their hard work and dedication in bringing this conference back.

Best wishes to everyone for a safe, enjoyable and productive conference.

Mary Tweedy
2021 FAST President

2021 Conference Committee

Barbara J. Rapoza
Nancy Besley
Dr. Gary A. Yoham

Sharon Cutler
Dr. Yvette Greenspan
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 programs, please visit FPL.com/education.
FAST Congratulates our $400 Travel and $500 Classroom Grant Winners

**Travel Grant**

Elizabeth Laguerre  
Cypress Elementary School  
FAST Area 8, Osceola County

**Classroom Grants**

Laura Kemble  
Cranberry Elementary School  
"We've Got the Power!"  
FAST Area 7: Sarasota County

Nora J. Holihan  
Orlando Science Schools  
Technology Campus  
Body Systems  
FAST Area 5: Orange County

Both Travel and Classroom Grant recipients must see Nancy Besley, FAST treasurer, to receive your award packet!
Table of Contents

President’s Welcome Letter and Conference Committee.................................2
Florida Power & Light Company (FPL).............................................................3
EduSmart............................................................................................................4
Travel and Classroom Grant Recipients..............................................................4
Table of Contents..............................................................................................5
Visible Body.........................................................................................................6
Schedule at a Glance...........................................................................................7
Social Event: Meet and Greet.............................................................................8
Social Event: Speaker Luncheon.......................................................................8
Swift Optical.......................................................................................................9
Workshops for Thursday................................................................................10-12
Alligator & Wildlife Discovery Center..............................................................13
Edmentum..........................................................................................................14
2021 FAST Awardees......................................................................................14
Florida PAEMST Science Finalists .................................................................15
STEMPilot..........................................................................................................16
Savvas Learning Company...............................................................................17
Program Key......................................................................................................17
Thursday’s Workshops and Social Event.........................................................18-19
Sessions on Friday..........................................................................................20-27
Lagoonology.....................................................................................................28
Lab-aids..............................................................................................................28
Sessions and Events on Saturday..................................................................29-31
FAST Board of Directors...............................................................................32
Celebrating 73 years of FAST Presidents......................................................33
Save the Date: FAST Conference 2022 St. Augustine.................................34
Notes..................................................................................................................34-35
Sponsors Appreciation....................................................................................36
FAST Area Directors.......................................................................................37
World Golf Village Renaissance St. Augustine Convention Center Map........38
Session Planner...............................................................................................39
Visible Biology takes learners beyond their 2D textbooks and engages them with the technology they love to use. Students can launch a 3D model from their computer and investigate it with controls that empower them to:

- Rotate the model and see it from different perspectives
- Zoom in to study details

- Select parts of the model to reveal names, definitions, and pronunciations

These fully interactive and engaging 3D models help students learn faster and more effectively!

Want to know more?
Visit us at our booth on the Conference Floor.
Join our Visible Biology Demo: Friday, 12:15pm-1:15pm | Exhibitor Speaking Session | Conference Center

To read testimonials and request a free trial, visit:

Visible Body®
visiblebody.com/FAST
# Schedule at a Glance/Agenda

**FAST 2021 Conference**  
**Navigating Through Science!**  
**October 21–23, 2021**  
**World Golf Village Renaissance St. Augustine Resort**  
500 South Legacy Trail, St. Augustine, Florida 32092

**NOTE:** All events are held in the convention center next to the Hotel unless otherwise indicated.

## Thursday, October 21, 2021

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00 AM – 5:00 PM</td>
<td>FAST Attendee Registration</td>
<td>Convention Center (Lobby)</td>
</tr>
<tr>
<td>7:00 AM – 4:00 PM</td>
<td>WORKSHOPS</td>
<td>Convention Center (Rooms)</td>
</tr>
<tr>
<td>5:30 PM – 7:30 PM</td>
<td>Meet &amp; Greet</td>
<td>Hotel (Pool Area)</td>
</tr>
</tbody>
</table>

*Join FAST board members and other attendees and discuss how to get the most out of the conference (Beverages and light appetizers)*  
*Pre-Registration Required although event is FREE!*

## Friday, October 22, 2021

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00 AM – 4:00 PM</td>
<td>FAST Attendee Registration</td>
<td>Convention Center (Lobby)</td>
</tr>
<tr>
<td>8:00 AM</td>
<td>Free Coffee</td>
<td>Convention Center (Vendor Hall)</td>
</tr>
<tr>
<td>8:00 AM – 5:00 PM</td>
<td>VENDOR EXHIBITS</td>
<td>Convention Center (Vendor Hall)</td>
</tr>
<tr>
<td>11:45 AM – 1:00 PM</td>
<td>SPEAKER LUNCHEON</td>
<td>Convention Center (St. Augustine B)</td>
</tr>
<tr>
<td>2:30 PM</td>
<td>COOKIE BREAK (FREE)</td>
<td>Convention Center (Vendor Hall)</td>
</tr>
</tbody>
</table>

*Closed for Vendor Lunch from 12:30 PM – 1:00 PM (Concurrent Sessions still occurring)*

## Saturday, October 23, 2021

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00 AM – 9:00 AM</td>
<td>FAST Attendee Registration</td>
<td>Convention Center (Lobby)</td>
</tr>
<tr>
<td>7:45 AM</td>
<td>Free Coffee</td>
<td>Convention Center (Vendor Hall)</td>
</tr>
<tr>
<td>7:45 AM – 11:30 AM</td>
<td>VENDOR EXHIBITS</td>
<td>Convention Center (Vendor Hall)</td>
</tr>
<tr>
<td>8:00 AM – 11:30 AM</td>
<td>CONCURRENT SESSIONS</td>
<td>Convention Center (Rooms)</td>
</tr>
<tr>
<td>9:15 AM – 11:30 AM</td>
<td>FEATURED SESSION:</td>
<td>Convention Center (St. Augustine C)</td>
</tr>
<tr>
<td></td>
<td>Brevard’s Famous Make &amp; Take for Elementary Standards</td>
<td></td>
</tr>
<tr>
<td>11:30 AM – Noon</td>
<td>Drawings for Prizes</td>
<td>Convention Center (Vendor Hall)</td>
</tr>
</tbody>
</table>

**PARKING:** Self-Parking is Free for Attendees during the Conference

Schedule can change without notice! Please check back often.
Meet and Greet!
Thursday, October 21, 2021

Time: 5:30 PM – 7:30 PM
Cost-FREE!

Even though the cost was free to everyone, you MUST have REGISTERED by October 8, 2021 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 cancelations, check the registration desk.

Location: Pool Area

Educators only, no guests!

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

Speaker Luncheon!
Friday, October 22, 2021

Time: 11:45 am until 1:00 pm
Cost: $15.00 (discounted rate of $5.00 for Life Members, ALL must have preregistered by October 8th, 2021)

Location: St. Augustine B in the Convention Center

Open to all attendees (must have preregistered by October 8th, 2021)

You still might be able to attend if there were cancelations, check the registration desk.

Enjoy a buffet lunch that includes grilled chicken, pasta, salad and dessert while listening to Dr. Malcolm Butler, Professor of Science Education at UCF, co-author of a K-5 National Geographic Science curriculum, former President of the Assoc. for Science Teacher Education and securer of over six million dollars to fund his research and initiatives, speak on the topic, JEDI: Justice, Equity, Diversity and Inclusion - The Evolution from “Science for All” to “Science for Each and Every.”

The Outstanding Teacher Recipients will also be honored.
We’re giving away a classroom set of microscopes

Visit www.swiftoptical.com/entertowin for a chance to win 12 SW350T microscopes*

*Winner will be announced in our booth on the last day the exhibit hall is open. Winner must be present to win. Microscopes must be allocated to a school and will not be shipped to a residential address.

www.swiftoptical.com
1. Aquaponics in the Classroom

**Presented by:** Jennifer Morgenthal and Becky Sponholtz, Florida Agriculture in the Classroom and Katrina Bayliss and Dr. Marcy Cockrell, Florida Dept. of Agriculture and Consumer Services, Division of Aquaculture

Florida Agriculture in the Classroom (FAITC) and The Florida Department of Agriculture and Consumer Services (FDACS) Division of Aquaculture are partnering to host a workshop aimed at demonstrating the use of small desktop aquaponics systems in the classroom. Through a project funded by the National Agriculture in the Classroom Organization (NAITCO), FAITC and FDACS have created an interactive lesson plan that utilizes small desktop aquaponics systems to teach a range of subjects and meets Florida State Standards. Workshop participants will be introduced to the lesson plan and learn the basics of setting up and using a desktop aquaponics system in their classroom. Participants will also have an opportunity to receive a free system and sign up to participate in the NAITCO-funded project at the end of the workshop.

**Audience:** 3-5th grade teachers  
**Time:** 10:00am - 12:00pm  
**Location:** Troon  
**Cost:** $5.00  
**Maximum:** 30  
**Minimum:** 10  
**Pre-registration is Required**

2. Overview of the 2021 - 2022 Science Olympiad Tournament Season

**Presented by:** Valerie Ledford, Florida Science Olympiad

Interested in coaching a Science Olympiad Team for 2022? This 2-hour session will review the events for Divisions B and C. You will then compete with a partner in a min-Science Olympiad “tournament” events for either middle or high school. Including but not limited to: Crave the Wave, BioProcess Lab, and It’s About Time or Remote Sensing, Environmental Chemistry, and Green Generation.

**Audience:** Middle and High School—Division B and C Olympiad Coaches  
**Time:** 10:00am - 12:00pm  
**Location:** St. Augustine E  
**Cost:** $5.00  
**Maximum:** 30  
**Minimum:** 10  
**Pre-registration Required**
3. Argument-Driven Inquiry in Grades 3-5: How to give children more opportunities to use science and literacy to make sense of the world around

Presented by: Victor Sampson, Ph.D., Associate Professor of STEM Education, The University of Texas at Austin

This session introduces a way to create learning experiences that will give students opportunities to talk, read, and write in the service of sensemaking as they use the DCIs, CCs, and SEPs to explain natural phenomena. The session will give teachers an opportunity to participate in the same sort of rich and meaningful learning experiences that are called for by the NGSSS. Such learning places the focus squarely on the nature of instruction. It is rooted in ongoing, active experiences that will prompt teachers to expand their content knowledge, pedagogical knowledge, and expand their beliefs about what is possible inside the classroom. The presenter will guide the participants in a series of focused, small-group demonstration activities that are structured like a typical day’s lesson, allowing teachers to experience instruction as students do. The demonstration activities will focus on making sense of differences in rabbit fur color placed on where they live.ore the fundamentals of solar technology through fun, hands-on activities. Session includes a brief overview of solar energy concepts and associated technologies, inquiry based experiments and lessons ready for classroom implementation. All materials are aligned with the Sunshine State Standards and NGSS. Free materials and door prizes!

Audience: 3-5th grade teachers  
Time: 12:00pm - 2:00pm  
Cost: $5.00  
Location: Wentworth  
Maximum: 26

4. Aquaponics in the Classroom

Presented by: Jennifer Morgenthal and Becky Sponholtz, Florida Agriculture in the Classroom and Katrina Bayliss and Dr. Marcy Cockrell, Florida Dept. of Agriculture and Consumer Services, Division of Aquaculture

Florida Agriculture in the Classroom (FAITC) and The Florida Department of Agriculture and Consumer Services (FDACS) Division of Aquaculture are partnering to host a workshop aimed at demonstrating the use of small desktop aquaponics systems in the classroom. Through a project funded by the National Agriculture in the Classroom Organization (NAITCO), FAITC and FDACS have created an interactive lesson plan that utilizes small desktop aquaponics systems to teach a range of subjects and meets Florida State Standards. Workshop participants will be introduced to the lesson plan and learn the basics of setting up and using a desktop aquaponics system in their classroom. Participants will also have an opportunity to receive a free system and sign up to participate in the NAITCO-funded project at the end of the workshop.

Audience: 6-8th grade teachers  
Time: 1:00pm - 3:00pm  
Cost: $5.00  
Location: Troon  
Maximum: 30  
Minimum: 10  
Pre-registration Required
5. **S.O.S. – Surviving On Solar**

**Presented by:** Susan T. Schleith and Penny Hall, Program Director and Coordinator K-12 Education, Florida Solar Energy Center/UCF

In this three hour workshop, facilitated by FSEC Energy Research Center staff, participants will explore solar energy concepts and technologies that can make life bearable after a disaster and in some situations may mean the difference between life and death. While covering important science standards, these practical applications of solar thermal, photovoltaic and battery technology provide relevant lessons for students that can be implemented now. All attendees receive lesson plans, reference materials and Water Pasteurization Indicator, (WaPI). Door prizes!

**Audience:** 3rd grade through high school  
**Time:** 1:00pm - 4:00pm  
**Location:** TBA  
**Cost:** $5.00  
**Maximum:** 20  
**Minimum:** 12

---

6. **Argument-Driven Engineering in Grades 6-8: How to help students learn the core ideas and practices of science and engineering through the use of meaningful STEM design challenges.**

**Presented by:** Victor Sampson, Ph.D., Associate Professor of STEM Education, The University of Texas at Austin

This session introduces a way to create STEM design challenges for use in science classrooms that will help students learn the core ideas and practices of science and engineering at the same time. The session will give teachers an opportunity to participate in the same sort of rich and meaningful learning experiences that are called for by the NGSSS. Such learning places the focus squarely on the nature of instruction. It is rooted in ongoing, active experiences that will prompt teachers to expand their content knowledge, pedagogical knowledge, and expand their beliefs about what is possible inside the classroom. The presenter will guide the participants in a series of focused, small-group demonstration activities that are structured as a typical STEM design challenge, allowing teachers to experience instruction as students do. The demonstration activities will focus on creating a new shipping and storage container for insulin.

**Audience:** 6-8th grade teachers  
**Location:** Wentworth  
**Cost:** $5.00  
**Maximum:** 26  
**Minimum:** 14
There's Always More To Explore.

Enjoy an immersive experience of exciting and up-close animal encounters in a educational atmosphere. This is your chance to make friends with hundreds of exotic animals from around the world.

We guarantee you will leave with a renewed connection to the natural world and an awareness of how to protect it. Visit kissagator.com to book your encounter.
Congratulations!

2021 FAST Awards

Outstanding Elementary Teacher
Monika Moorman

Outstanding Science Educator
Michelle Ferro
Florida PAEMST Science Finalists for 2020 and 2021

Science 2020 Florida Finalists:

**Kaye Ebelt**
The Greene School
Palm Beach School District

**Shadreka Smith**
Discovery Oaks Elementary
Clay County School District

**Katrina Madok**
Gerald Adams Elementary
Monroe County School District

Science 2021 Florida Finalists:

**Euan Hunter**
Vanguard High School
Marion County School District

**Michael Mury**
All Saints Academy
Polk County School District

**Yung Romano**
Strawberry Crest High School
Hillsborough County
STEMPilot is a K12 NGSS curriculum teaching students to apply classroom math, science & engineering using “HandsOn” global flight simulation for students 3rd -12th grades. FAA Pathways Avalible

STUDENTS EXPLORE the Physics of Flight in the Classroom and NOW from Home ...

SAFE DRONE® & STEMPilot®® @HOME™

DISCOVER OUR “S.A.F.E.” Training Unit For Classroom Drone Operation

With our 3-part “S.A.F.E.” approach to drone flight, students learn the theory of flight in a risk-free, simulated environment. Once the simulation sections are passed, students repeat their lessons with a real quad copter, further reinforcing the concepts already learned and increasing proficiency and Understanding. Kits include everything you need.

A 10 UNIT Distance Learning Curriculum for Home Schooling

Students will learn the theory of flight while training on a free flight simulator for smartphones, tablets or chromebooks. Avalible for schools or individual uses
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:

<table>
<thead>
<tr>
<th>Title</th>
<th>Level</th>
<th>Presenter</th>
<th>Room</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roller Coaster Physics</td>
<td>E,M</td>
<td>Jane Doe, Elementary Charter School</td>
<td>102</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 102. The name of the Presenter is Jane Doe.

Note: There will be a couple of sessions that will take 2 block periods. These are on Saturday and labeled in the program.
Aquaponics in the Classroom
Grade 3–5
Troon

Katrina Morgenthal and Becky Sponholtz, Florida Agriculture in the Classroom, and Katrina Bayliss and Dr. Marcy Cockrell, Florida Dept. of Agriculture and Consumer Services, Division of Aquaculture

Florida Agriculture in the Classroom (FAITC) and The Florida Department of Agriculture and Consumer Services (FDACS) Division of Aquaculture are partnering to host a workshop aimed at demonstrating the use of small desktop aquaponics systems in the classroom. Through a project funded by the National Agriculture in the Classroom Organization (NAITCO), FAITC and FDACS have created an interactive lesson plan that utilizes small desktop aquaponics systems to teach a range of subjects and meets Florida State Standards. Workshop participants will be introduced to the lesson plan and learn the basics of setting up and using a desktop aquaponics system in their classroom. Participants will also have an opportunity to receive a free system and sign up to participate in the NAITCO-funded project at the end of the workshop.

Cost: $5.00
Pre-registration Required

Argument-Driven Inquiry in Grades 3-5: How to give children more opportunities to use science and literacy to make sense of the world around
Grade 3-5
Wentworth

Victor Sampson, Ph.D., Associate Professor of STEM Education, The University of Texas at Austin

This session introduces a way to create learning experiences that will give students opportunities to talk, read, and write in the service of sensemaking as they use the DCIs, CCs, and SEPs to explain natural phenomena.

The session will give teachers an opportunity to participate in the same sort of rich and meaningful learning experiences that are called for by the NGSSS. Such learning places the focus squarely on the nature of instruction. It is rooted in ongoing, active experiences that will prompt teachers to expand their content knowledge, pedagogical knowledge, and expand their beliefs about what is possible inside the classroom.

The presenter will guide the participants in a series of focused, small-group demonstration activities that are structured like a typical day’s lesson, allowing teachers to experience instruction as students do. The demonstration activities will focus on making sense of differences in rabbit fur color placed on where they live.

Cost: $5.00
Pre-registrations Required

Overview of the 2021 - 2022 Science Olympiad Tournament Season
M, H, Div.B&C Olympiad Coaches St. Augustine E

Valerie Ledford, Florida Science Olympiad

Interested in coaching a Science Olympiad Team for 2022? This 2-hour session will review the events for Divisions B and C. You will then compete with a partner in a mini-Science Olympiad “tournament” events for either middle or high school. Including but not limited to: Crave the Wave, BioProcess Lab, and It’s About Time or Remote Sensing, Environmental Chemistry, and Green Generation.

Cost: $5.00
Pre-registrations Required

Aquaponics in the Classroom
6-8th
Troon

Jennifer Morgenthal and Becky Sponholtz, Florida Agriculture in the Classroom and Katrina Bayliss and Dr. Marcy Cockrell, Florida Dept. of Agriculture and Consumer Services, Division of Aquaculture,

Florida Agriculture in the Classroom (FAITC) and The Florida Department of Agriculture and Consumer Services (FDACS) Division of Aquaculture are partnering to host a workshop aimed at demonstrating the use of small desktop aquaponics systems in the classroom. Through a project funded by the National Agriculture in the Classroom Organization (NAITCO), FAITC and FDACS have created an interactive lesson plan that utilizes small desktop aquaponics systems to teach a range of subjects and meets Florida State Standards. Workshop participants will be introduced to the lesson plan and learn the basics of setting up and using a desktop aquaponics system in their classroom. Participants will also have an opportunity to receive a free system and sign up to participate in the NAITCO-funded project at the end of the workshop.

Cost: $5.00
Pre-registrations Required
Thursday, October 21, 2021

**1:00PM— 4:00PM Workshop #5**

**S.O.S. – Surviving On Solar**
Grade 3–12

Susan T. Schleith and Penny Hall, Program Director and Coordinator K-12 Education, Florida Solar Energy Center/UCF

*In this three hour workshop, facilitated by FSEC Energy Research Center staff, participants will explore solar energy concepts and technologies that can make life bearable after a natural disaster. In some situations, solar energy may mean the difference between life and death. While covering important science standards, these practical applications involving solar thermal, photovoltaic, and battery technology provide relevant lessons for students that can be implemented now. All attendees will receive lesson plans, reference materials and a Water Pasteurization Indicator (WaPI). Door prizes!*

**Cost:** $5.00
**Pre-registration Required**

**2:00PM— 4:00PM Workshop #6**

**Argument-Driven Engineering in Grades 6-8: How to help students learn the core ideas and practices of science and engineering through the use of meaningful STEM design challenges.**
Grade 6-8

**Wentworth Victor Sampson, Ph.D., Associate Professor of STEM Education, The University of Texas at Austin**

*This session introduces a way to create STEM design challenges for use in science classrooms that will help students learn the core ideas and practices of science and engineering at the same time. The session will give teachers an opportunity to participate in the same sort of rich and meaningful learning experiences that are called for by the NGSSS. Such learning places the focus squarely on the nature of instruction. It is rooted in ongoing, active experiences that will prompt teachers to expand their content knowledge, pedagogical knowledge, and expand their beliefs about what is possible inside the classroom. The presenter will guide the participants in a series of focused, small-group demonstration activities that are structured as a typical STEM design challenge, allowing teachers to experience instruction as students do. The demonstration activities will focus on creating a new shipping and storage container for insulin.*

**COST:** $5.00
**Pre-registrations Required**

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

**Meet and Greet!**

Thursday, October 21, 2021

Time: 5:30 PM – 7:30 PM
**Cost- FREE!**
**Location:** Pool Area

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 by the pool area. Meet your FAST Board and maybe a few special guests! Have fun while learning the best way to get the most from the conference. Drinks and light appetizers will be served. This event is free and open to all educators (no guests).
### 8:15—9:15AM Concurrent Session 1

#### Are You Crazy About Genetics?
**M, H**

**Legends 1**

**Naomi Hartl,** Science, School Specialty

Use a one-of-a-kind creature building system to explore the role chance plays in an organism's heredity. Teachers will use a hands-on approach for internalizing tough vocabulary terms in a fun and practical way.

#### Second Day of School STEM Strategic Instruction
**M, H**

**Legends 2**

**Erich Landstrom,** The ScienceGiant; Giant Family Enterprises, LLC.

Content enhancement and cooperative learning resources for the second step on the road to success. Lead by 20-year veteran teacher Erich Landstrom, this session will highlight ingenious and inexpensive activities. Giftcard giveaways from TeacherspayTeachers.com.

#### Navigating Student Centered Learning through Google Workspace Tools
**A**

**Legends 3**

**Jessica Marcolini,** Instructor, and **Susan Cooper,** Assistant Professor, **Brian Johnson** and **Heather Skaza Acosta,** Associate Professors, Florida Gulf Coast University

This presentation outlines how we utilize Google Workspace tools to facilitate 5E lessons promoting inquiry and science and engineering practices. Applications and strategies demonstrated will encompass different teaching contexts. Take-aways include example lessons and templates for activities.

#### I Really Don’t Know Clouds - A Look at Clouds from Both Sides
**E**

**St. Augustine B**

**Donna Barton,** Clay County Schools

This American Meteorological Society module on Clouds looks at the various conditions that contribute to the formation of various clouds. Find out the relationship between air pressure and temperature in cloud formation. Free module and activity guides.

### Fostering a Climate of Curiosity in the Classroom
**E, M, H**

**St. Augustine E**

**Karolyn Burns,** Program Manager

This workshop aims to help K-12 teachers across the sciences to understand climate change, its impacts, and solutions in order to incorporate climate into their curriculum in a relevant and compelling way.

### Driving Question Boards Steer Students to Success
**E, M**

**St. Augustine F**

**Lisa Felske Deslaurier,** Director of Curriculum and Professional Development, **Dr. Arlene Korr,** Florida Account Manager, and **Dr. Ava Rosales,** Director for Florida Support EduSmart

Driving Question Boards are a powerful tool to involve students in processing information to build explanations of scientific phenomena. Learn how to use DQBs to engage students more deeply in science content.

### Stations and the 5E Model
**M**

**St. Augustine G**

**Kandi Follis,** TSA Secondary Science and **Andrea Palmatier,** 8th grade Science Teacher; Collier County

Increase student engagement in cognitively complex tasks! In this interactive session, you will participate in lessons using the 5E model and stations. You will leave the session with lesson plans and lab documents to immediately implement in your classroom.

### Why Shark Education Matters
**E, M, H**

**Wentworth**

**Cailla Strobel,** Global education ambassador, Sharks4Kids

Sharks4Kids brings together scientists, educators, conservationists and professional videographers to create a unique opportunity for the next generation to learn why sharks need kids and kids need sharks. Creating the next generation of shark advocates through education, outreach and adventure.
Lagoonology: A Compete Curriculum Featuring a Board Game

John Buck, Managing Partner and Julie Shorrock, h20logy, LLC

Let's play a game! Lagoonology is a six unit NGSSS curriculum including a classroom board game featuring the Indian River Lagoon. Our demonstration will show how students will learn the positive and negative forces currently impacting the Lagoon.

Decision Making in Science

Christine Danger and Debra Kozdras, Hillsborough County Public Schools

The decisions your students make dictate the path that their lives take. Posing phenomena as situations in which students analyze information and data then, make decisions, teaches them to judge the risks and rewards of their decisions. Sample lessons provided.

Navigating Nature of Science

Kimberly Seaver, Matthew Timm, Ryan Carlson, Program Specialists, Elementary Science, and Jill Adcock, Senior Administrator, Orange County Public Schools

Participants will engage in inquiries that support student understanding of Nature of Science standards. Facilitators will hone in on essential Nature of Science concepts while sharing strategies for supporting ongoing practice with the Nature of Science standards.

The Virtual Field: Remote Learning at Field Stations in Florida and Beyond

Dustin Angell, Director of Education, Archbold Biological Station

Field stations across the USA are now offering virtual learning opportunities for most grade levels. This includes classroom visits, video resources, and live-streamed events. This presentation includes a special focus on Archbold Biological Station in Venus, Florida.

CER - What Happened to the Alligator?

Becky Walters, STEMscopes - Accelerate Learning

This Claim-Evidence-Reasoning session is an engaging, interactive, hands-on session that will allow participants the opportunity to experience and implement this highly effective strategy and instantly increase rigor in their classroom.

Leveraging Florida Industry to Enhance Learning: Florida Dairy Council Elementary Curricula

Lesley Kirkley, Sr. Instructional Specialist, K-8 Science

The Florida Dairy curriculum is designed to infuse learning about an important Florida industry. This standards-aligned curriculum couples learning on the Florida environment and healthy eating to building an understanding of the role of the dairy industry.

Online Data Science Education via Interactive Jupyter Notebooks for High School Students

John Sutor, Co-founder, and Carlos Mercado-Lara, SciTeens

SciTeens will inform teachers about free online data science curriculums for high school students with no coding or research experience. Feedback is encouraged as raffle prizes (science kits, giftcards) will be given to teachers who attend. Food will be provided.

Strengthening Students’ Hands-on Lab Skills through Progress Monitoring

Janice Gobert, Professor, Rutgers University

Teachers need windows into exactly when and how students (or the whole class) struggles with the Nature of Science standards. In randomized studies, teachers were able to help twice as many students. Join us to learn how progress monitoring can benefit students.
Everglades Restoration Fights Climate Change  
**E, M, H**  
Wentworth  
Bianca Cassouto, Program Manager, Kimberly Gooch, Literacy Program Coordinator, The Everglades Foundation  
How do we make progress on climate change? Learn how Everglades restoration makes Florida more resilient to the impacts of climate change. Discover the Everglades Literacy Program, an interdisciplinary STEAM curriculum that provides hands-on, free lessons and professional development.

You're Oil I Need: A Physical Science Investigation with Environmental Applications  
**E, M**  
Legends 1  
Hannah Hiester, Director, Science on the Move, Florida State University  
Using the 2010 Deep Water Horizon Oil Spill as an anchoring phenomenon, students use everyday items to gain insight into physical science concepts, ultimately producing an argument using the Claim-Evidence-Reasoning framework. Investigation handout and teacher guide provided!

Energizing Early Childhood STEM  
**E**  
Legends 2  
Juliana Texley, Lesley University, Past NSTA President, and Ruth Rudd  
Beyond individual activities, a progressive early childhood program focused on STEM Habits of Mind can encourage problem solvers and enhance equity. Come play with us.

Putting STEM into Action  
**E**  
Legends 3  
Pam Caffery, National Solutions Sales Consultant, and Michele Detwiler, Teacher/consultant, Hand2mind  
How can you maximize your instructional time and include engineering design activities into your content? It's easy with hand2mind STEM in Action modules. We'll explore and investigate how to integrate these lessons for content understanding and engineering practices.

DIY MacroScale Breadboard  
**E, M, H**  
St. Augustine E  
Nicholas Eastham, Faculty, Terry Cavannaugh, Professor, University of North Florida  
In this workshop, participants will be provided with the plans and materials to build their own working macro-scale breadboard to make a variety of circuits to use in various applications.

Careers in Aquaculture  
**M, H**  
St. Augustine F  
Marcy Cockrell, Biological Administrator, Florida Dept. of Agriculture and Consumer Services  
This presentation will give a brief overview of aquaculture in Florida and the range of aquaculture career possibilities available to students. New and emerging fields of study, including challenges for these sectors, will be discussed.

Daytime Astronomy and the Lightwave Spectrum  
**M, H**  
St. Augustine G  
John Clark, Science Teacher, Volusia Online Learning  
You can do astronomy in the daytime and show your students how radio waves do more than AM/FM. They tell us how the galaxy moves! A great introduction to the light wave spectrum.

Differentiate for Genius Results  
**E, M**  
Troon  
Erin Horner, National Science Specialist and Jacqueline Orgain, Savvas  
Are you ready to transform your teaching with differentiated instruction? Join us for this engaging, collaborative workshop and experience how approachable and effective a differentiated classroom can be!
Space Station Explorers: An Out-of-this-World Educational Experience

Courtney Black, Education Project Manager, International Space Station US National Laboratory

Space Station Explorers is a multifaceted program for educators and learners alike. From growing tomato seeds that flew in space, to launching experiments to the ISS, we offer a variety of activities to reach and teach the next generation.

Let’s Put Science in Motion!

M, H

Legends 1

Beth Smith, Educational Technology Consultant - Texas Instruments

Let’s connect science and math concepts by programming a graphing calculator to drive a Rover to explore position, time, speed, and velocity. This is a great activity to engage students as they develop conceptual understanding of motion.

Thanks for the Feedback!

E

Legends 3

Melissa Triebwasser, Elementary Science Academic Coach, Hillsborough

Discover how meaningful feedback can push science learning to the next level of instruction and be used to evaluate student understanding.

Visible Biology: Learn Biology Hands-on Virtually

H

St. Augustine A

Lexi Kelley, Sales Representative, Maite Suarez-Rivas and Tom Efstathios, Visible Body

Introducing Visible Biology - the groundbreaking 3D biology platform! Visible Biology provides a hands-on immersive learning experience. Virtual biology models can be dissected and manipulated to learn difficult concepts. Come see this brand new way of teaching and learning biology!

C-E-R for Science Teachers: Using Claim, Evidence, and Reasoning in the Science Classroom

A

St. Augustine E

Shari Sipka, Science Department Chair, Liberty Middle School

This workshop will help set the stage for an engaging and hands-on approach to completing a science CER activity. You will walk away with a completed lesson plan including engagement and monitoring strategies (and maybe even some post-its).
Educate and Assess through Analyzing Models

Brenda Breil, University of Florida Assistant Professor, PK Yonge Developmental Research School

Help students learn and communicate about systems by studying and evaluating models. Workshop participants will be entered in a lottery for NSTA's Book, Crosscutting Concepts: Strengthening Science and Engineering Learning (J. Nordine and O Lee editors, 2021)

The Water that Connects Us

Alan Ivory, K-12 Education and Outreach Scientist, Brian Abramowitz, Stephanie Killingsworth, Scientist in Every Florida School

You will learn about Florida's water and then test it through a classroom activity. After this Conference, you can return to school and work with a scientist to test your local waterways, compare data to other Florida schools, and show evidence of water's importance.

Monitoring and Meaning-Making with Hands On Learning

Ryan Carlson, Matthew Timm, Kimberly Seaver, Program Specialists, Jill Adcock, Senior Administrator, Elementary Science, Orange County

Participants will engage in inquiries while using digital tools to model student demonstration of understanding. Facilitators will share techniques for using the digital tool data to monitor while using critical content documents to hone in on planning and feedback.

Backyard Habitats: Exploring with Video

Ted Borduas, Elementary Science Specialist, Collier County

Learn how to record, edit, and share engaging video lessons on your phone or tablet to motivate students to explore the natural world around them. For beginners to advanced creators, this session will highlight how video can engage all learners.

Zombies Are Knocking on Your Classroom Door!

Beth Smith, Educational Technology Consultant, Texas Instruments

We will use Zombies to model brain anatomy and physiology and then develop a model for the spread of a "Zombie Virus" in a population of humans. The activities will be done via both data collection and simulations.

How to Maximize Student Engagement and Sense-Making in Science

Kathy Armstrong, Full Option Science System, LHS, SSI, Delta

This interactive session will focus on ways to strengthen student engagement and sense-making in science. Through science talk, students explore ideas and use evidence to construct conceptual knowledge. Research shows that productive talk is critical for learning in science.

Treasure Hunting with GPS

Angel Alexander, Science Teacher-Stone Magnet Middle School, Brevard County

ScienceCache- a spinoff of Geocaching with Global Positioning System (GPS) and treasure hunting in your back yard. Using GPS and geocaching features to problem solve and discover science and nature.

Using Student-Driven Experiences to Build Engagement & Understanding

Jonathan Gerlach, Sr. Director of Partnerships, Legends of Learning

With the amount of time for science constantly under scrutiny, developing experiences beyond classroom hours is critical. Learn how to leverage game-based learning to introduce, review, and deepen student understanding and ensure not a moment of time is lost.
Guardians of the Environment Curriculum
E, M, H  St. Augustine F

Cheri Dame, Science Program Specialist, Sarasota County Schools & Michelle Ferro, Science Content Specialist, Brevard Public Schools

Florida Department of Environmental Protection and the Florida Department of Education have partnered up with teacher leaders across the state to develop a FREE K-12 standards aligned Recycling Curriculum. Participants attending this session will get a brief overview of the 5E structured curriculum, highlighting creative content, curated digital components, and accessibility of materials.

TeachingLiteracy in Science
A  St. Augustine G

Rae Burch, Teacher, Southwest Middle School, Brevard County

Learn how you can easily incorporate literacy goals and standards in your science classroom! Lesson plans, hands on activities and downloadable, editable resources will be provided!

Modeling Genetic Traits and Variations
M  Troon

Diane Accaardi, Curriculum Specialist, Lab-aids

Participants model and explain additional patterns of inheritance as they explore cause-and-effect relationships for additional traits of the critters. These patterns help them model and explain the wide variation that can result from sexual reproduction.

Exploring Physical and Chemical Change: Using Science-specific Literacy Tools and English Learner Accommodations to Support all Students in a Scientific Inquiry
E, M  Legends 1

Dr. Su Gao, Assistant Professor, Kristina Brendel, Doctoral Student, University of Central Florida

This session allows science teachers to discover how science-specific literacy tools and English Learner accommodations can be used in a 5E inquiry-based lesson. Participants will be engaged in practices of science and explore physical and chemical changes.

Mapping It Out: Using Science Assessment Data to Create Personalized Learning Journeys
E  Legends 2


Mastery of the FL NGSSS is the destination, but students can take different pathways. Learn how to use assessment data to determine where students are and to map out personalized journeys with intentional resources and activities. Prizes for all attendees.

Minds at the Helm: Empower Your Students to Design a Better World
M  Legends 3

Kathy Armstrong, Full Option Science System, LHS, SSI, Delta

Experience and distinguish the work of scientists and engineers as you actively engage in science and engineering practices. This hands-on, interactive session will provide a preview of the Full Option Science System (FOSS) Variables and Design module.
NASA needs YOU and YOUR students!

Caryn Long, 6th grade Science/STEM Specialist, Montverde Academy and Colon Robles-Marile, NASA Langely Research Center - GLOBE

Learn how to train their students to become citizen scientists through the Global Learning Observations to Benefit the Environment (GLOBE) program. Student observations are used by NASA to validate satellite data!

Biology Wars

Demetra Williamson, Biology Teacher, Columbia High School, Yolando Carlisle, Laboratory Supervisor at Nutrient, Ashley Shidner, Biology Teacher, Lacanto High School

Biology Wars tests biological concepts and scientific processing skills required by state standards. This is a tournament that promotes academic competition, which will make your biology standards memorable and will help students revisit key concepts prior to the Biology EOC.

Safety in the Hands on Science Lab

Dan McFarland, Science Teacher, King High School, Hillsborough County

Lab safety incidents will be analyzed, teacher duties will be described. Lab safety will be discussed. A few demonstrations will be performed.

Sounds in the Sea: Listening to Learn with Mote Marine Lab

Dana Henderson, School Programs Coordinator, Mote Marine Laboratory

Learn how scientists from Mote and the Sarasota Dolphin Research Program study biological and anthropogenic sounds in the sea and gain access to lesson plans developed by Mote Education to best use this current real-world data in the classroom.

Integrating Makerspace for Concept Development

Michele Detwiler, Teacher and Pam Caffery, Consultant, Hand2mind

Makerspace activities are perfect for sense-making. Participants will engage in activities that help students make sense of concepts, immerse them in the engineering design process, and promote critical thinking. Sample makerspace task cards centered will be provided.

Implementing Machine Learning and AI to Advance Science Curriculum

Brian Ambranowitz, K-12 Education and Outreach Coordinator-UF Scientist in Every School

Learn the basics of machine learning and AI technologies, how they can enhance your curriculum, and help support student understanding of science concepts. Hear from teachers about their experiences integrating these concepts into their classrooms.

DoExplore Your Environment with Project Learning Tree

Suzette Gagnon, STEM Coordinator, Christ the King Catholic School, and Janet Schnauss, Elementary Science Specialist, Duval County


Citizen Science & Education: Insights from SciStarter

Caroline Nickerson, SciStarter, Program Manager, PhD Student Agricultural Communication, University of Florida

Members of the SciStarter team will share insights and lessons learned from the global https://SciStarter.org/Education page, as well as from customized portals and programs SciStarter has created with NC State, Broward County Schools, and others.
Aquaculture in the Classroom
M, H St. Augustine E
Katrina Bayliss, Biological Scientist IV, Florida Department of Agriculture and Consumer Services (FDACS)

Aquaculture is a multidisciplinary subject that provides opportunities for hands-on learning in a variety of topics for students of all ages. This presentation will provide an overview of aquaculture trends and practices and ways aquaculture can enhance classroom experiences.

How Word Choices Influence Scientific Understanding
A St. Augustine F
Susan Cooper, Assistant Professor, and Jessica Marcolini, Instructor I, Florida Gulf Coast University

Word mix-ups hinder conceptual understanding of important scientific concepts, including the nature of science. Carefully chosen words facilitate science comprehension and improve vocabulary development for all students, including English language learners. Possible solutions, resources, and references will be shared.

Aerial Surveillance with Raspberry Pis: Landscape Mapping and Monitoring
H, C St. Augustine G
Chris Baynard, Associate Professor, Terry Cavannagh, Professor, and Nicholas Eastham, Coordinator of Academic Support, University of North Florida

In this GeoSTEM class, students learned to assemble, create and program microcomputer cameras for aerial imagery acquisition and processing, build and employ lifting platforms (kites, balloons and poles) and print 3D structures to carry their Raspberry Pi cameras.

Diving Deep into Science with the Guy Harvey Ocean Foundation
E, M, H Troon
Valerie Gaynor, Director of Education, Guy Harvey Ocean Foundation

Guy Harvey Ocean Foundation is premiering an array marine science and conservation material including: Shark "Collections," Expedition Notebook, a full Marine Science curriculum and much more. Teachers will be introduced to free resource and other exciting opportunities available through GHOF.

How to Make Investigations more Meaningful and Interactive for Students
A Wentworth
Victor Sampson, Associate Professor, University of Texas, Argument-Driven Inquiry

Learn how to help students learn more from investigations by using Argument-Driven Inquiry to make them more interactive.

Vendor Hall closes Friday at 5:00pm and reopens Saturday at 7:45am
Concurrent Sessions
start at 8:00am tomorrow morning.

Vendor Hall
opens at 7:45am with FREE coffee for attendees!

Elementary Make and Take
Saturday
9:15—11:30AM
St. Augustine B

Drop by anytime between 9:15 and 11:30 am to join Brevard Public School Teachers and their sponsor, STEMscopes to "make and take" standards aligned activities for K - 8. Navigate through stations engaged in hands-on activities. Lesson plans for each activity will be provided (on a flash drive).

GAME ON!
What is super-sized, lots of fun and is a creative way to teach middle school science?

Introducing...
LAGOONOLOGY®

Visit our booth in the exhibitor's hall to learn more about this innovative concept in environmental education.

Session presentation:
Friday
9:30 am
Legends 1

Hands-on@Home
Lab-Aids® is known for providing organized, innovative investigations for science classrooms. Now, select activities in our middle school program, Issues and Science, Designed for the NGSS, have been neatly packaged for students to use at home.

Hands-on@Home provides safe, engaging activities away from the screen.

In a distanced classroom, individualized packaging also allows investigations to take place without sharing materials and reduces the cleaning burden between each class. Learn more at lab-aids.com.
Science Adventures! Motivating Students and Enhancing STEM Learning
E, M  
Legends 1
Michael Heithaus, Symbio Education
Explore a world of project-based learning that brings the field to classrooms to enhance STEM performance and connections to careers. This session will provide an introduction to a new cross-curricular supplemental STEM program to inspire, engage, and educate!

Nurture through Nature
E, M  
Legends 2
John Martinez, Joshua Garrett, Andrew Fagertem, Math/Science Teachers, After-school Environment Program, Orange County
How we stumbled our way into building the most innovative school club in the country. Get students outside enjoying nature and taking an interest in protecting and advocating for our environment by empowering them with critical thinking skills. We will also give insight into how we gained partners and funding for our award winning program.

STEM activities from Elementary Science Olympiad of Florida
E  
Legends 3
Valerie Ledford, Director, Florida Science Olympiad
Looking for STEM activities or an engaging competition for students? Come preview the Science Olympiad rules for 2021/2022 season and participate in the "Balloon Racers" event. The winner of the event will earn a prize!

Visual Literacy
A  
St. Augustine A
Milton Huling, Professor of STEM Education, Polk State College
Do you want to reach ALL learners in your classroom? Do you want to provide ALL students a fighting chance on the next high stakes test? You need to infuse Visual Literacy into your practice.

Personalizing Science Research
E, M  
St. Augustine E
David Grueber, Jennifer Guerra, and Jessica Zamora, Gulliver Prep
Are you tired of students copying and pasting from google? Are you tired of students asking why are we learning this? We will share how our school uses Guided Inquiry Design as a framework for inquiry in our school.

Analyzing Star Characteristics with the H-R Diagram
M  
St. Augustine F
Jon Garber, 7th Grade Science Teacher, Bridgewater Middle School, Orange County
Plotting stars on to a H-R Diagram using star data of luminosity and temperature. Using H-R Diagram to explain relationship between characteristics. Differentiated Lesson plans available.

Spacegate Station, a Free Virtual Program
E, M  
St. Augustine G
Peter Carafano, K-12 STEM Coordinator, Duval County
Spacegate Station is a FREE instructional STEM educational program for 4th - 8th grade students. Teachers can access standard based engaging STEM remediation or enrichment lessons provided by Astronaut/Teachers who are working in a futuristic "space laboratory" orbiting the moon.

Effective Input-Output Journals
E  
Troon
Jenifer McBride, Elementary Science Coordinator, and Jared Wallace, Science Content Specialist, Lee County
Learn how to increase student achievement through Input-Output journaling. These journals utilize a student input-output cycle that includes high-yield instructional strategies for improved learning and retention. Participants leave with a journal framework that implements specific instructional strategies.

PAEMST Updates and Application Changes
M, H  
Wentworth
Alicia Foy, PAEMST Math and Science State Coordinator
The Presidential Awards for Excellence in Mathematics and Science Teaching are the nation's highest honors for K-12 teachers of STEM, including computer science. Please join this session to learn of new changes and updates to the program.
9:15—10:15 AM Concurrent Session 9

Get inspired with Florida International University

**A** Legends 1

**Nick Ogle,** Assistant Director, **Analisa Duran,** Program Manager, FIU CASE Education Outreach

FIU College of Arts, Sciences & Education connects lifelong learners with university research. This session will focus on Mission Inspire, the standards aligned and data driven curriculum for middle and high school teachers. Through Mission Inspire, our goal is to inspire the next generation of scientists, communicators and decision makers with real world science.

**Brewing Up Science Success with Formative Assessment and Standards-Based Practice**

**E, M, H** Legends 2

**Heather Magill,** Science Instructional Leader, STEM Program Coordinator, Palm Beach Schools

Join us to learn how Florida schools have found success utilizing Study Island for FUN and ENGAGING formative assessment and DATA DRIVEN, standards-based practice. Attendees will have the chance to win gift cards, t-shirts, crab hats, and MORE!

**Claim-Evidence-Reasoning Investigation Exploring Connections between Biodiversity and Fire Frequency in Longleaf Pine Ecosystems**

**M, H, C** Legends 3

**Brian McClain,** Teacher, Lincoln High school, Tallahassee

Working in small groups, participants use multiple resources to support a claim addressing: How frequently should prescribed fire be applied to promote biodiversity? Participants receive: templates, teacher's guide, manipulatives, and links for implementing this activity in their classes.

**Impact of Biotechnology through Spike Virus Case and mRNA Vaccine**

**A** St. Augustine A

**Marjorie Miles Dozier,** Science Coach, Polk County

Participants will work through the spike virus case (incorporating real world problem, careers, and multiple standards that highlights interconnectedness of STEM in our lives) to evaluate the impact of biotechnology.

9:15—11:30 AM

**PAEMST Question and Answer Panel**

**A** Wentworth

**Alicia Foy,** PAEMST Math and Science State Coordinator

Please join us for a question and answer panel hosted by PAEMST finalists and awardees. The PAEMST application and application submission process will be addressed during the session. Bring your curiosity and questions as we walk through the components of the PAEMST application.

**Make and Take Standards-Based Activities for K-8**

**E, M** St. Augustine B

Selected Science Teachers, **Michelle Ferro,** K-6 Science Content Specialist, **Rhonda Ripperger,** Smart Lab Facilitator, Brevard Public Schools

Drop by anytime between 9:15 and 11:30 am to join Brevard Public School Teachers and their sponsor, STEMscopes to "make and take" standards aligned activities for K-8. Navigate through stations engaged in hands-on activities. Lesson plans for each activity will be provided (on a flash drive).

**Teaching High School Evolution in the Virtual (and Physical) World**

**M, H** Troon

**Kenny Coogan,** Associate, The Teacher Institute for Evolutionary Science

The Teacher Institute for Evolutionary Science has created FREE student-guided units on evolution which covers all your middle and high school evolution content standards. Students can follow along on their own or you can guide them in a class setting.

10:30—11:30 AM Concurrent Session 10

**EVERFI Resources to Support STEM Learning for the Real World**

**E, M, H** Legends 1

**Kelly Clark,** Specialist, EVERFI

EVERFI provides cost free, web based programs to address critical skills around sustainability, data science and career exploration. All participants will leave with full access to EVERFI's suite of resources, lesson plans, lab activities and much more!
Sci-Map: A Hands On Way to Navigate Science Education in Your Community

A

Adrienne Thieke, President, Barbara Beck, Treasurer, Jimmy Yawn, Vice President  Hands on Gainesville, Inc.

Inspire students to see science in the world and learn beyond the classroom. Our Sci-Map navigates teachers to accessible, hands-on activities to explore the science at local sites and links them to state standards and real-world applications.

Journey 2050

M, H

Jennifer Morgenthal, Education Specialist, Florida Agriculture In The Classroom, and Tracy Baxter, Southeastern Regional Representative, Nutrients for Life

Journey 2050 takes students on a virtual farm simulation that explores world food sustainability. Using an inquiry-based approach, students make decisions and see their impact. Our Journey to feeding the world has started. Join us.

Get Outside and Get Inventing

E,M

Jennifer Swanson, Johns Hopkins, University's Center for Talented Youth

How do you get kids to observe, explore, and make connections to the world around them through books? In this FUN presentation by Jennifer Swanson, attendees will get tips and tricks for engaging students with biomimicry. What can YOU create?

When the Wheels Are Turning, the Students Are Learning!

M, H, C

Karlheinz Haas, Science/Math Instructor, The Pine School, Hobe Sound

If you are new to coding, come get up to speed! By combining coding and hands-on activities, you can learn how to program a robotic vehicle to perform different challenges.

Next Gen Whiteboarding - Interactive Hands on Demo

A

Jennifer Roeder, Account Manager-ProLogic ITS

Showcasing use of revolutionary see through whiteboard. You can write on a see through white board and the image that you write can be seen the proper way by others on the other side of the see through white board.

Using Dialogues in the Science Classroom

M, H

Craig Berg, Science Educator, University of Wisconsin-Milwaukee

Learn how to use dialogues, a powerful strategy for learning content and increasing student engagement for online or classroom use. A 237 page free book.

Everglades Champions in Action

M, H

Bianca Cassouto, Education Program Manager, Susan Toth, Environmental Education Specialist, The Everglades Foundation

The Everglades Foundation believes in giving young people learning opportunities that empower them to affect positive change in their communities and benefit the Everglades. Join us to learn about new Everglades Champions initiatives for middle and high school students.

Make and Take Standards-Based Activities for K-8

E, M

Michelle Ferro, K-6 Science Content Specialist, Rhonda Ripperger, Smart Lab Facilitator, Brevard Public Schools

9:15—11:30AM

Drop by anytime between 9:15 and 11:30 am to join Brevard Public School Teachers and their sponsor, STEMscopes to "make and take" standards aligned activities for K - 8. Navigate through stations engaged in hands-on activities. Lesson plans for each activity will be provided (on a flash drive).

Raffle in the Vendor Hall

Saturday

11:30am to 12:00pm

Thank You for Attending!

See you next year!

Sharon Cutler
Vendor Representative
# FAST Board for 2020-2021

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<th><strong>Executive Board</strong></th>
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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.
Celebrating 73 years of FAST Presidents

Mildred Reed 1958-1959 Carol Houck 1984-1985 Brad Tanner 2009-2010
NOTES:

SAVE the DATE!
Next year’s FAST conference will be held at the
Renaissance World Golf Village Resort
St. Augustine
October 27-29, 2022
NOTES:
Sponsors
THANK YOU!
for your additional Support for Science Education at FAST 2021

FPL
(Florida Power & Light)
Meet and Greet
Participant Bags

Edmentum
Meet and Greet

Motic SwiftLine, National
Optical and Scientific Instruments
Classroom set-12 Binocular microscopes SW350B

Accelerate Learning—STEMscopes
Cookie Break

Scientist in Every School
Participant badges

Texas Instruments
Coffee Sponsorship

NSTA Press
100 Books
FAST has Area Directors to serve your needs.
Please contact your Area Director for area specific information or ideas to support your teaching.

Area 1: Escambia, Santa Rosa, Okaloosa, Walton, Holmes
Area 2: Washington, Jackson, Bay, Calhoun, Gulf, Liberty, Gadsden, Leon, Wakulla, Franklin, Jefferson, Madison, Taylor
Area 3: Hamilton, Suwannee, Lafayette, Dixie, Columbia, Gilchrist, Levy, Baker, Union, Bradford, Alachua, Marion, Putnam
Area 4: Nassau, Duval, Clay, St. Johns
Area 5: Flagler, Volusia, Lake, Seminole, Orange
Area 6: Citrus, Hernando, Sumter, Pasco, Hillsborough, Pinellas, Polk
Area 7: Manatee, Hardee, Sarasota, De Soto, Highlands
Area 8: Brevard, Osceola, Indian River, Okaloobie, St. Lucie, Martin
Area 9: Charlotte, Glades, Lee, Hendry, Collier
Area 10: Palm Beach, Broward
Area 11: Monroe, Dade

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Stephanie Killingsworth  Area 10 Director  skillingsworth@floridamuseum.ufl.edu
Navia Gomez  Area 11 Director  237245@dadeschools.net
<table>
<thead>
<tr>
<th>Thursday 10/21</th>
<th>Room</th>
<th>Name of Session</th>
</tr>
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<tbody>
<tr>
<td>Workshop</td>
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<td>Workshop</td>
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<table>
<thead>
<tr>
<th>Friday 10/22</th>
<th>Room</th>
<th>Name of Session</th>
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<tbody>
<tr>
<td>Session 1</td>
<td>8:15-9:15 am</td>
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<tr>
<td>Session 2</td>
<td>9:30-10:30 am</td>
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<tr>
<td>Session 3</td>
<td>10:45-11:45 am</td>
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<tr>
<td>Session 4</td>
<td>12:15-1:15 pm</td>
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<tr>
<td>Session 5</td>
<td>1:30-2:30 pm</td>
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<tr>
<td>Session 6</td>
<td>2:45-3:45 pm</td>
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</tr>
<tr>
<td>Session 7</td>
<td>4:00-5:00 pm</td>
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<tr>
<td>St. Augustine B</td>
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<td><strong>Speaker Luncheon</strong></td>
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<td></td>
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<td><strong>Dr. Malcolm Butler</strong></td>
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<td><em>(pre-registration was required)</em></td>
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<tr>
<th>Saturday 10/23</th>
<th>Room</th>
<th>Name of Session</th>
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<tbody>
<tr>
<td>Session 8</td>
<td>8:00-9:00 am</td>
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</tr>
<tr>
<td>Session 9</td>
<td>9:15-10:15 am</td>
<td></td>
</tr>
<tr>
<td>Session 10</td>
<td>10:30-11:30 am</td>
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</tr>
</tbody>
</table>
Florida Association of Science Teachers

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Certificate of Participation

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For participation in the FAST 2021 Science Teachers’ Conference

Navigating Through Science! Live and in Person!

St. Augustine, FL

October 21-23, 2021

Mary Tweedy

FAST President 2020-2021