

CONCURRENT SESSIONS

FRIDAY, OCTOBER 22 and SATURDAY 23rd, 2021

Concurrent Sessions are 60 minute sessions that run concurrently beginning at 8:15 AM and ending 5:00 PM on Friday and noon on Saturday. There is something for every interest and grade level. The majority of these sessions are presented by teachers for teachers. Our vendors are our partners for instruction. Any vendor presentations apply directly to instruction in the classroom.

Abbreviations for targeted audiences are E(Elementary), M(Middle) H(High), C(College), and A(ALL). Scheduled times and room assignments will be available on site in the program book.

The following sessions have been accepted for this year's conference.

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

A

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.

Math Modeling for Middle School and High School

A

Your students can create math models to help answer a wide range of real life problems. See how OMC students were able to determine how to efficiently invest in biodiversity conservation activities by creating a math model this summer.

Space Station Explorers: An Out-of-this-World Educational Experience

A

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.

Educate and Assess through Analyzing Models

A

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)

Teaching Literacy in Science

A

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!

Understanding and Implementing STE(A)M

A

Has it been challenging to find the time and inroads to successfully implement STEM in your classroom? This session will provide a comprehensive overview of STEM integration and provide resources for meaningful STEM/STEAM activities in your classroom.

How Word Choices Influence Scientific Understanding

A

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..

Visual Literacy

A

Do you want to reach ALL learners in your classroom? Do you want to provide ALL students students a fighting chance on the next high stakes test? You need to infuse Visual Literacy into your practice.

Work like a Real Scientist with Interactive STEM Cases

A

Working with Interactive STEM Cases will empower our students to jump into the role of a real STEM professional tasked to solve real-world problems. Participants will view interactive case studies, form and test ideas and find solutions.

Get the FACTS! (Formative Assessment Classroom Techniques)

A

Effective techniques for understanding student thinking at any point during an instructional cycle both inform teaching and promote conceptual learning. Using a strategy harvest format for this session, you will gather at least 15 interactive FACTs you can use immediately.

Uncovering Students' (and Teachers') Ideas Using Justified List Probes

A

Learn how to develop and use a purposefully designed formative assessment probe that uncovers students' (and teachers') ideas, including misconceptions, about core science concepts.

Virtual Reality Tours to Explore Labs and Landscapes

A

Take your students to scientists' labs and field research sites through FREE virtual tours from Streaming Science. Learn about mobile VR hardware, cloud-based software, and view tours of the UF/IFAS Nature Coast Biological Station and living shoreline project.

NASA needs YOU and YOUR students!

A

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!

Navigating Student Centered Learning through Google Workspace Tools

A

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.

Impact of Biotechnology through Spike Virus Case and mRNA Vaccine

A

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.

FMSEA Aquatic Species Collection Workshop (ASCW) – 2 Hour Session on Saturday

A

Upon completion, certificate holders (educators) will be authorized to harvest and possess aquatic fish and invertebrate species without a regular fishing license by learning responsible collection, transport, and captive holding practices, while minimizing environmental impacts.

Citizen Science & Education: Insights from SciStarter

A

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.

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

A

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).

Raising Social Emotional Literacy on Campus

A

We have been a frontrunner in developing our own SEL Adult and Student practices for 3 years. We aim to arm you with strategies to implement in your classrooms and/or campus wide to promote social emotional literacy.

Sci-Map: A Hands On Way to Navigate Science Education in Your Community

A

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.

Treasure Hunting with GPS

A

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.

How to make investigations more meaningful and interactive for students

A (All-General)

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

I Really Don't Know Clouds - A Look at Clouds from Both Sides

E

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.

Backyard Habitats: Exploring with Video

E

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.

Putting STEM into Action

E

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.

Monitoring and Meaning-Making with Hands On Learning

E

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.

Navigating Meaning: How to Maximize Student Engagement and Sense-Making in Science

E

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.

Integrating Makerspace for Concept Development

E

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.

Explore Your Environment with Project Learning Tree

E

Activities in Project Learning Tree's Explore Your Environment: K-8 Activity Guide develop critical thinking and problem-solving skills. Explore how PLT supports elementary science and the Florida NGSSS Standards and receive a PLT activity collection.

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

E

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.

Effective Input-Output Journals

E

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.

Connecting with the Natural World. Using Children's Literature to Inspire Environmental Stewardship

E

Explore a collection of books and activities that develop environmental awareness for students (K-5). We will talk books and activities that require few materials and little prep time but can provide lasting impacts on students' environmental identity.

Science of Nature

E

Join Brevard Zoo as we explore various materials, sharing the joy of nature as we discover the importance of student-led learning experiences. Take-aways and lesson plans will help you recreate these, nature-based science programs in your classroom.

Navigating Nature of Science

E

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.

Energizing Early Childhood STEM

E

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.

Thanks for the Feedback!

E

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

Magnets and the National MagLab

E

The National Magnet Lab (Tallahassee, FL) 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!

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

E

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.

STEM activities from Elementary Science Olympiad of Florida

E

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!

Implementing Machine Learning and AI to Advance Science Curriculum

E, M

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.

Spacegate Station, a Free Virtual Program
E, M

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.

Nurture Through Nature (How we stumbled our way into building the most innovative school club in the country)

E, M

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.

Decision Making in Science

E, M

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.

Driving Question Boards Steer Students to Success

E, M

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.

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

E, M

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.

Teaching STEM with NASA's Commercial Crew Program

E, M

NASA's Commercial Crew Program is sending American astronauts in American spacecraft from American soil once again! Participants will explore STEM resources activities designed to ignite students' engineering skills.

Using Student-Driven Experiences to Build Engagement & Understanding

E, M

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.

Science Adventures! Motivating students and enhancing STEM learning through project-based learning

E, M

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!

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

E, M

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.

You're Oil I Need: A physical science investigation with environmental applications

E, M

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!

Differentiate for Genius Results

E, M

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!

Get Outside and Get Inventing

E, M

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?

Make and Take – Double Session on Saturday

E, M

Join Brevard Public School teachers and their sponsor, STEMscopes to "make-and-take" standards-aligned activities. Participants will navigate through stations, engaged in hands-on activities. Lesson plans for each activity will be provided (on a flash drive). This year's activities include elementary and middle school activities.

Virtual Connections: Bringing Manatees and Marine Science into Your Classroom

E, M

Explore engaging resources from Manatee Lagoon, an FPL Eco-Discovery Center to bring marine science to life in your classroom. Discover live and recorded lessons, join a coral lesson demo and maybe win a prize!

Fostering a Climate of Curiosity in the Classroom

E, M, H

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.

Everglades Restoration Fights Climate Change

E, M, H

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.

DIY MacroScale Breadboard

E, M, H

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.

Diving Deep into Science with the Guy Harvey Ocean Foundation

E, M, H

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.

The Water that Connects Us

E, M, H

You will learn about Florida's water and then test it through a classroom activity. After this F.A.S.T. 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.

EVERFI Resources to Support STEM Learning for the Real World

E, M, H

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!

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

E, M, H

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!

STOP & STEAM

E, M, H

STOP & STEAM approach is to deliver standard/project-based, cross curricular instruction through engaging hands on activities for the 21st century learners using Science, Technology, Engineering, the Arts and Mathematics as themes for guiding student inquiry, dialogue, and critical thinking.

Social Emotional Learning Inside the Science Classroom

E, M, H

Explore the connection between science and SEL. See how the strategies you already use can improve the outcomes of your students. Preparation, collaboration, engineering design, and reflections. Oh my!

Thinking Outside the Box Oven

E, M, H

Participants will learn how to effectively use solar cookers in the classroom, explore cooker designs, as well as the science and engineering of how they work. Lesson and cooker plans, tips, recipe ideas and door prizes!

Krazy Kontraption for Learning and Fun

E, M, H

Using ordinary materials, discover how you can reinforce physics and engineering concepts in a fun and creative way. Come prepared to play, design, build and explore Attendees receive free resources. Door prizes!

Why Shark Education Matters

E, M, H

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.

CER - What Happened to the Alligator?

E, M, H

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.

Engaging Graph Analysis and Interpretation

E, M., H

This interactive workshop uses various Covid 19 graphs and progressive graph analysis to support students with data analysis and presenting evidence. Teachers will receive a link to the presentation including instructions and student expectations.

STEM 101: Federal Tools for Moving STEM Forward

E, M., H

Learn with a panel of Albert Einstein Distinguished Educators as they share lessons, applications, and innovative ideas in STEM the federal government has available for education. Panelists will share engagement tools for all students.

Visible Biology: Learn Biology Hands-on Virtually

H

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!

Zombies Are Knocking on Your Classroom Door!

H

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.

Biology Wars

H

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.

Aerial Surveillance with Raspberry Pis: Landscape Mapping and Monitoring

H, C

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.

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

H, C

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.

Lagoonology: A compete curriculum featuring a classroom sized board game

M

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.

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

M

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.

Stations and the 5E Model

M

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.

Analyzing Star Characteristics with the H-R Diagram

M

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.

Modeling Genetic Traits and Variations

M

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

Aquaculture in the Classroom

M, H

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.

Daytime Astronomy and the Lightwave Spectrum

M, H

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.

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

M, H

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

Strengthening Students' Hands-on Lab Skills through Progress Monitoring

M, H

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.

Personalizing Science Research

M, H

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.

Are You Crazy About Genetics?

M, H

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.

Genes in Space: Genetics on the International Space Station, Free Loaner Equipment, Curriculum, and More!

M, H

Genes in Space is an experimental design competition for students in middle and high school. Join us to learn about the contest and hear how you can receive a free classroom loan of ISS biotechnology equipment.

Let's Put Science in Motion!

M, H

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.

Everglades Champions in Action

M, H

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.

Florida's Tesla Tale

M, H

The National MagLab in Tallahassee, Florida leads the world in electromagnetic research. Come learn how we built the world's strongest magnet and what we do to keep that record here. A giveaway for every teacher!

Careers in Aquaculture

M, H, C

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.

When the Wheels Are Turning, the Students Are Learning!

M, H, C

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.

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

M, H, C

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.

**Second Day of School STEM Strategic
Instruction**

M, H

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

**Not Another Buzz Word: Culturally Responsive
Teaching in Secondary Science**

M, H

Join us as we discuss culturally responsive teaching and how we can use it in the secondary science classroom to help all students succeed.

Safety in the Hands on Science Lab

M, H

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

Journey2050

M., H

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.