FEFE Presentation Briefs: March 6th, 2021

11:00-11:45AM Concurrent Workshop Sessions

Activities Designed for Educators in Elementary School Settings to Promote Career and College Readiness, Including STEM Careers
Presented By: Dr. Stacy Van Horn
Grade Level: Elementary
This presentation will address specific interventions and strategies that can be used with K-5 students to increase their knowledge of themselves and the world of work. In particular, the focus will be to connect developmental career theory to practical activities that focus on career development. This session will provide elementary educators unique ideas on how to integrate career awareness and exposure to STEM occupations into their class lessons. This will be an interactive session where attendees will be invited to participate and experience the career and college readiness strategies being introduced.

Cultivating a Sense of Belonging Among Students Through Integrating STEM Storytelling in the Classroom
Presented By: Vanessa Lopez, John Fynn, Kassy Holmes, Damika Sanders, Arlene Willis, and Larry Young
Grade Level: Middle & High
This presentation will showcase the benefits of intentionally integrating storytelling into STEM educational efforts to support students in developing a sense of belonging and foster community. Participants will explore STEM storytelling and reflect on their own STEM journeys, as well as discover tools and methods to champion storytelling within their own classrooms in alignment with traditional STEM communication skill-building strategies.

Ready, Set, Draw! Where Computer Science Meets Art
Presented By: Michael Kmietowicz and Adriana Ocaña-Lara
Grade Level: Elementary, Middle, High
Ready, set, draw! See how computer science, math, and art meet in this lesson from Code.org’s Computer Science Discoveries middle school course. Participants will engage as students as they learn how humans tell computers to draw images, laying the foundation for animation, games, and more! Attendees will also learn how to find resources to implement this free curriculum in their classrooms, whether in-person or virtually.

Reach for the Stars ~ National Rocket Competition
Presented By: Jack Colpas
Grade Level: Elementary, Middle, High
All you need to know about getting your students (age 10 - 18) into the Reach for the Stars ~ National Rocket Competition! This workshop will prepare you to get your kids involved. From planning and funding through construction and launch – we are with you every step of the way. It’s a fun, exciting, safe and affordable STEAM outreach that honors the first Teacher-in-Space, Christa McAuliffe. Schools, scouts, and youth groups host locally - eliminating travel costs and allowing over 21,000
competitors to date. Local competitions draw attention to your school or program. The only thing that gets more attention than a rocket launch - is a rocket competition! Door Prize - an Estes Mi-Ti Rocket Kit
*Free Launch Set to FEEC attendees who host RFTS Competition!

12:15-1:00PM Concurrent Workshop Sessions

**Fundamentals of Computer Science**
Presented By: Veda Bhat and Yash Bhat  
Grade Level: Elementary & Middle  
This presentation aims to introduce our online portal for the learning of Fundamentals of Computer Science. The portal, BYTESVEDA.COM is recommended for kids between the ages of 10 and 17 years and new to the subject of computers and technology. It has topics ranging from Hardware components, History of Computers to Network Types, Algorithms, and Software Fundamentals. It is self-paced and flexible where kids can follow through on their own or teachers can use it as a platform and a guiding tool to discuss these topics.

**Hands-On Torricelli Water Fountain Experiment for Remote Learners**
Presented By: Dr. Matthew Traum, Dane Ungurait, and Nina Jones  
Grade Level: Middle & High  
The first 15 participants who register for this session (by 2/26) will receive a complimentary kit mailed to their home! In the session, presenters will guide participants through building and testing an apparatus to explore physics and fluid mechanics. Water is pumped into a graduated cylinder with holes drilled at different depths to create a Torricelli Fountain. Participants apply Torricelli’s Law and equations of motion to predict the distance each jet travels. Predictions will be tested via fountain jet trajectory measurement. While this session’s focus is Torricelli’s Law, supplied kits include two additional configurations: 1) a mass conservation experiment and 2) a dynamic water manometer experiment.
*Pre-registration information for this session will be emailed to those registered for the conference AND posted on the conference website. Kits are limited to registered FEEC participants only and one per person. Those who wish to attend the session but do not receive a kit can do so as the presenters will also demo an at-home set-up!

**Communicate, Collaborate, and Create with Digital Tools**
Presented By: Amy Trujillo  
Grade Level: Elementary, Middle, High  
Even though digital tools are available, it does not mean they are used for the three big Cs: communication, collaboration, and creativity. Participants will learn about Wakelet, BrainPOP, Adobe Spark, Kahoot, Gimkit, National Geographic, Scratch, Code.org, and Flip Grid’s Grid Pals. Participants will see examples of how each tool is used and will have a chance to share how they have used these tools, along with others, on a collaborative Wakelet. Finally, participants will brainstorm how they can use one of the digital tools in an upcoming lesson in their classroom.
Rising to the Challenge - How Placed-Based STEM Learning Helps Provide Inclusion and Equity in Diverse Populations - Lessons for Community-Based Projects
Presented By: Dr. Corydon Strawser
Grade Level: Elementary, Middle, High
This session will explore the ways educators can expand STEM affinity among diverse populations by using placed-based lessons through the cultural lens of lessons on weather and climate. During this session, we’ll explore and present classroom experiences, place-based lessons which collectively suggest that community-based inquiry positively affects diverse learners. Further, we’ll show that placed-based STEM explorations can and do correlate to greater academic achievement and higher science and STEM affinity. Throughout this interactive session, we’ll present culturally relevant project learning experiences and instructional practices, using weather and climate as a vehicle for developing learner interest in both science and engineering.

1:15-2:00PM Concurrent Workshop Sessions

Science, Leadership, and Mentoring: New Horizons for Girls in STEM
Presented By: Danielle Dickey, Saoulkie Bertin, Kirsten Cherry, Mariah Fermin, and Marie Hamel
Grade Level: Middle
Science Leadership and Mentoring is a program founded by the Women’s and Gender Studies Program at UCF to promote girls’ inspiration and excitement into STEM fields while also building leadership abilities. Our team will share the story of our program and lead an activity that highlights the contributions women have made to STEM throughout history.

Diagnosing Diabetes: Integrating CS & Engineering in a Biomedical Context
Presented By: Mohammed Patel
Grade Level: High
The aim of this presentation is to provide an overview of a low-cost reproducible lesson that was curated as part of a Research Experience for Teachers (RET) at the University of Central Florida. This lesson was test driven this year with distance learning constraints and earned an “innovating” on the Marzano scale and most importantly, the students loved it.

Educating the Artemis Generation: Leveraging NASA’s NextGen STEM Resources
Presented By: Dr. Samuel Garcia
Grade Level: Elementary, Middle, High
NASA is leader in earth and science exploration. With groundbreaking missions such as the Artemis Program, which will land the first woman and next man on the Moon by 2024, NASA continues to advance its vision ‘to discover and expand knowledge for the benefit of humanity.’ In this session, participants are provided with an overview of NASA’s NextGen STEM educational resources and products developed to strengthen students’ critical thinking and problem-solving skills to help nurture, and inspire the Artemis Generation.
**Connecting Classrooms to Experts in Industry and Academia**  
Presented By: Amanda Allen  
Grade Level: Elementary, Middle, High

stemCONNECT is a free classroom resource to connect students with experts in industry and academia around the state focused on Science, Technology, Engineering, and Math. stemCONNECT reinforces classroom ideas while introducing students to related high-tech careers. Our program utilizes an online video conference to allow students (at home or in the classroom) and experts to converse and see the everyday hands-on work of industry personnel.

**2:15-3:00PM Concurrent Workshop Sessions**

**Sites to See**  
Presented By: Jennifer Jones  
Grade Level: Elementary & Middle

In the session "Sites to See," attendees will learn ways to incorporate STEM learning in a way that engages both distant and face-to-face learners. The goal of this session is to help participants envision ways they can adapt a Google Site to give students choice in their learning, use inquiry to explore a topic, and complete a mix of hands-on and digital activities around a STEM topic.

**Block-Based Coding as a Hands-On Modeling Tool**  
Presented By: Lynne Cohen  
Grade Level: Middle & High

Have you ever spent hours searching for the perfect animation or simulation? Block-based coding provides a low-floor, high-ceiling platform for teachers and students to create visual or conceptual models, customized calculators, or small games. Excellent for demonstrating or reinforcing concepts, customizable visual models written in simple block code—whether authored by teacher or student—enhance understanding for struggling students, and are fun excursions into computer science in a traditional science classroom. Learn how the free, educational “Scratch” website can be used for exit tickets or longer projects in your science classroom.

**Enduring Effect of Project Based Learning**  
Presented By: Abdul Siddiqui  
Grade Level: Middle & High

The presentation and robotics hands on experience will highlight the benefits of Project Based Learning. The observations that are captured in the presentation are based on the High School Engineering Internship and Robotics Teams the US Army PEO STRI has supported. The High School Internship is intended to be a practical approach for mentoring high school students in developing and incorporating processes needed for accomplishing successful technical projects. The Robotics Teams mentoring is the best process for implementing the lessons for successful project development and management in a competitive environment.
Help, I Need Tech PD!
Presented By: Amy Trujillo
Grade Level: Elementary, Middle, High
Many teachers are expected to effectively teach, have engaged students, and increase their test scores, all while learning new technologies and tools. Learn what to read, who to follow, and what to look for when it comes to tech PD, as well as certifications, including Kahoot, Adobe, and Google. Resources will be shared with a collaborative Wakelet. When the session ends, the goal is that you will know how to find support for at least one of the technologies or tools you can use in the classroom. Support will be given after the session via email and social media.