FALL CONFERENCE 2018 Workshop Descriptions

Session 1

Bundling PEs and Developing Storylines (Elementary, Middle School, High School)

Presenter(s): Michael Wysession (Keynote Speaker, Washington University St. Louis)

This session will focus on the use of storylines to create units, including phenomena that provide students with intriguing problems to solve. Activities that drive understanding, and assessments of instruction as well as bundling performance expectations including content, science and engineering practices and cross-cutting concepts will be discussed.

Using Argumentation for Discussing Phenomena: Increasing Student Voice in STEM (K-12)

Presenter(s): Dr. Terry Talley (Accelerate Learning)

Reduce teacher talk and increase purposeful student talk as we model consensus building through argumentation around intriguing science phenomena that matter. ELA skills and the 21st-century skills of communication and collaboration are a must in the STEM classroom.

Learn How to Implement a GAP Day (Middle School, High School)

Presenter(s): Terri Renna and Debbie Langone (East Meadow)

Learn How to Implement a GAP Day! is a workshop designed to evaluate student achievement, discuss methods of purposeful feedback, explore ways to reteach or disseminate information in ways that address all learning styles, incorporates technology, and includes inquiry learning that encourages discourse among students. The East Meadow High School District offered professional development in this area and incorporated its first district-wide GAP Day in Science classes this past Fall. The two presenters of this workshop look forward to presenting a technique that was found to be successful in our own district.

Escape the Classroom with Breakout EDU (Upper Elementary, Middle School, High School)

Presenter(s): Nancy Lin (Nassau BOCES)

Transform your classroom into a fun, academically-focused "Escape Room". Escape games combine kinesthetic learning, teamwork, spatial reasoning, critical and "outside-of-the-box" thinking into a format kids will love. In this workshop teachers will be engaged in a STEM Breakout game as if you are your students. In doing so, teachers will learn to facilitate Breakout games where players solve a series of challenging, content-based puzzles in order to open locked boxes.

Interactive STEM in the Intermediate Classroom (Upper Elementary)

Presenter(s): Liz Held and Beth Noon (Elwood)

Come learn about how Cranberries, Potatoes and and Fairy Tales can teach children about STEM. In this hands-on workshop, teachers will discover how to teach concepts with a creative and interactive approach. Participants will learn how to create various STEM stations for children to delve into learning about cranberries. They will also learn how to use potatoes to teach about the Olympic games and they will try to become a heroine to several fairy tale characters by rescuing them from the perils these characters face.

Session 2

Aligning Teaching with Learning (K-12)

Presenter(s): Dr. Jacqueline Grennon Brooks (Stony Brook University)

How do we reinvent curricula as sets of big ideas investigated through design challenges? How do we create classrooms that set the stage for a fail-forward mindset? The NGSS practices and crosscutting concepts -- not the 80 pages and hundreds of color coded columns organizing thousands of content statements in decimal-numbered outlines -- but, the handful of big unifying ideas that reflect how we think and the small set of practices that help us thoughtfully act are very useful answers to these practical and important questions. This workshop invites participants to explore these concepts and practices through challenge-based curricula examples.

Car Design: Green Engineering(Elementary)

Presenter(s): Eileen Tambone (Long Island Explorium)

Using a variety of recycled materials, participants will design and construct a "car". They will explore physics and math by testing ramps, pathways and the objects that roll on them. Students will find ways to make their cars move up or down a ramp while also developing a familiarity with angles, friction, and gravity and how they impact momentum.

STEAM Engineering is Elementary (Elementary)

Presenter(s): Dr. Brian Terry and Jeannine Doxsee (Hewlett-Woodmere)

This workshop is designed to help elementary teachers develop a progression of the engineering design model. Three main projects will be introduced, and the attendees will get participate and get step by step directions that they can start in the classrooms the very next school day. The first activity is designing parachutes from small cups which will be placed on a box fan. The second activity is designing, testing, and redesigning a straw rocket. The final activity is to build a sail for a car. The last activity incorporates several aspects of the other disciplines from the elementary level. They will discuss needs and wants, economy (budget to purchase parts for design), structure versus function, writing (why they redesigned the first design), and the engineering design concept as outlined in the new New York State Science Learning Standards.

Using Breakout Games to Meet Science Standards (Middle School, High School)

Presenter(s): Allison Moss and Kate Scheil (Garden City)

This workshop will provide teachers with activities to incorporate the new science standards to their lessons. Through games, like Breakout Edu, participants will explore lessons to transition from teacher-directed to a more student-direct approach. Teachers will join in a game to simulate the students' engagement and understand the need to build a collaborative classroom environment.

Transitioning to an Inquiry Mode: The Problem Based Learning Classroom (Middle School, High School)

Presenter: Ken Meskill (Creative Alternative Solutions)

Establishing and conducting an inquiry-mode, problem-based learning classroom has a steep learning curve. However, the slope decreases dramatically by the end of year two, levels by year three, then the fruits of the bold transition become evident. This participatory workshop will give immediate tools to start the transition from the current lecture-based classroom with lab-like exercises, to a challenging, exploratory course, while fostering love of learning, social-emotional growth, and self-determination. A course that demands the application of Creative, Alternative, Solutions to local/national/global problems

through NYS Curricula and Standards. All resulting in what most seek, high NYS Science Regents exam scores.

An Introduction to NGSS Classroom Assessments - Part I (K-12)

Presenter(s): Emily Kang, Ph.D. (Adelphi University) and Matthew Christiansen, Ed.D. (Oceanside)

In this double session, participants will practice developing classroom assessment tasks that are explicitly three dimensional in nature, as recommended by the NGSS and NYSSLS. Samples of assessment tasks will also be shared. Participants are asked to bring a device. To get the greatest benefits from this session, participants should have a working knowledge of NGSS.

Session 3

Extend the Classroom Beyond Four Walls: Earth Science Outdoor Learning (Middle School, High School)

Presenter(s): Stephanie Burns and Jessica Conrad (Connetquot)

It's easy to integrate phenomena into authentic labs where students engage, explore and evaluate their own data. Learn how to use local outdoor settings to cultivate student-centered learning while incorporating an Earth systems approach to various project-based labs. Suggestions for differentiation will also be discussed and examples of project-based labs will be given.

Elementary STEM Share (Elementary)

Presenter(s): Mary Goldberg (Floral Park-Bellerose School District), Anne Hackford (Floral Park-Bellerose School District), Janice Hyland (Floral Park-Bellerose School District), Regina D'Orio (Oyster Bay), Hayley Byron (Oyster Bay), Shauna Gazzo (Oyster Bay), Lisa Mariani (Commack)

The Elementary STEM Share brings together leaders in STEM education who will provide a variety of PreK-Grade 5 STEM teaching strategies and resources.

Hosting a STEAM Night (Elementary, Middle School)

Presenter(s): Suzanne Gray, Sherri Winick, Carolyn Tellone, and Rachel Lindsey (Plainview-Old Bethpage)

Plainview-Old Bethpage School District has hosted Family STEAM Night for K-8 students and their families to learn more about STEAM, 21st Century Skills, and Design Thinking. This event included 40 stations, 13 breakout sessions, and included outside vendors of STEAM education. It was an event that encompassed the guidance, scheduling, and man power of over 100 high school students, 20 administrators, 27 teachers, and a group of parents. The community had the opportunity to learn about STEAM through direct participation in the events, challenges, Makerspace, and technology that our students encounter in our program with their own families. POB Schools is here to share with you their journey, tips, and successes from the night in the hopes of helping others host their own STEAM events.

Using Phenomena to Establish Driving Questions (Middle School, High School)

Presenter(s): Carol-Ann Winans (Lynbrook)

During this workshop teachers will work at stations to engage, explore, and explain concepts in Biology. They will share out key findings and practice obtaining, evaluating, and communicating information. This workshop will introduce teachers to the Gather, Reason, Communicate (GRC) lesson design. It will provide teachers, new to the standards, with tools to re-structure units around phenomena in order to increase student involvement and meet the science and engineering practices.

Modeling for Understanding Secondary Science Education (High School)

Presenter(s): Jordan Pekor and Stephen Hassard (Plainview-Old Bethpage)

Modeling is an educational practice where students demonstrate how they would attack a problem in a sequential manner by drawing/noting the process using whiteboards and cell phones. The POBJFKHS physics teachers have integrated this practice into their daily instruction with great success. Learn how to integrate this into any science class.

An Introduction to NGSS Classroom Assessments - Part 2(K-12)

Presenter(s): Emily Kang, Ph.D. (Adelphi University) and Matthew Christiansen, Ed.D. (Oceanside)

In this double session, participants will practice developing classroom assessment tasks that are explicitly three dimensional in nature, as recommended by the NGSS and NYSSLS. Samples of assessment tasks will also be shared. Participants are asked to bring a device. To get the greatest benefits from this session, participants should have a working knowledge of NGSS.