

WORKSHOP DESCRIPTIONS

AI Beyond the Answers: Using Established Frameworks to Deepen STEM Learning

Presenter: Randy Kolset, Orange Unified School District

Grade Levels: 6-12

Room: 201 **Time:** 10:40 - 11:25 AM

Discover how established instructional frameworks can help educators move AI use beyond generating answers and toward deeper STEM learning. This interactive session explores real classroom examples using the 4Cs and SAMR to examine how AI can strengthen critical thinking, communication, collaboration, and creativity. Participants will apply the question "Where is the thinking?" to an existing lesson and explore practical strategies for using AI responsibly to support inquiry, reflection, and authentic student learning.

Beyond Gravity: Bringing Microgravity Science Into Your Classroom With Space for Teachers

Presenter: Tony Hwang, Einstein's Horizon

Grade Levels: 6-12

Room: 203 **Time:** 10:40 - 11:25 AM

Discover how microgravity science can transform familiar STEM concepts into engaging, career-connected learning experiences. This hands-on session introduces educators to Space for Teachers resources and opportunities while providing an opportunity to experience a classroom-ready microgravity activity. Participants will explore strategies for connecting space science investigations to real-world STEM careers and leave with ideas for bringing authentic space experiences into their classrooms.

Beyond the 2D Textbook: Igniting STEM & Healthcare Pathways Through Immersive 3D VR Exploration

Presenter: Randy Kolset, Orange Unified School District

Grade Levels: 6-12

Room: 202 **Time:** 10:40 - 11:25 AM

Discover how immersive 3D virtual reality can transform the way students explore complex biological and anatomical concepts. This interactive session introduces educators to spatial learning strategies that combine virtual exploration with teacher guidance, peer collaboration, and classroom discussion. Participants will explore practical approaches for integrating VR discover how immersive learning can strengthen engagement, scientific thinking, and connections to STEM and healthcare careers.

Chomp, Create, Innovate: Hands-On with the ChompSaw

Presenter: Manny Luong, TGR Foundation

Grade Levels: K-12

Room: Makerspace **Time:** 10:40 - 11:25 AM

Get ready to take a bite out of STEAM learning with the ChompSaw, a hands-on tool that helps students transform ideas into tangible creations. In this interactive workshop, educators will experience a ChompSaw-powered engineering activity while exploring ways to incorporate the tool into classrooms and makerspaces. Participants will leave with practical project ideas and strategies for using making, design, and engineering to build creativity, confidence, and problem-solving skills.

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Clean the Dirty Water: An Engineering Design Lesson

Presenter: Nichole DePaul Landry, Channelview ISD

Grade Levels: K-12

Room: 203 **Time:** 9:45 - 10:35 AM

Get your hands dirty with an authentic engineering design challenge focused on solving a real-world water filtration problem. In this interactive session, educators will experience the challenge from both a student and teacher perspective while exploring how research-based STEM experiences can be transformed into accessible, standards-aligned lessons. Participants will leave with a classroom-ready instructional roadmap, facilitation strategies, and ideas for connecting authentic research to inquiry-based STEM learning.

Climate Science in Action: Exploring Environmental Data with Databot and CODAP

Presenter: Robert Grover, Databot LLC

Grade Levels: 6-12

Room: 203 **Time:** 11:35 - 12:25 PM

Discover how real-time environmental data can turn the classroom into a climate science laboratory. In this hands-on session, educators will use Databot sensors and CODAP to collect, visualize, and analyze data related to carbon dioxide, temperature, and light. Participants will conduct rapid climate investigations and explore classroom-ready strategies that connect environmental data to California's Environmental Principles & Concepts while strengthening student inquiry, evidence-based reasoning, and data literacy.

Empowering Young Scientists Through Equitable, Hands-On Learning

Presenter: Nancy McIntyre, Resource Area For Teaching

Grade Levels: K-8

Room: 204 **Time:** 9:45 - 10:35 AM

Discover how low-cost, upcycled materials can make rigorous STEM learning more accessible and inclusive for every student. This hands-on session introduces strategies grounded in Universal Design for Learning that support English learners, neurodiverse students, and students with physical disabilities. Participants will identify barriers in their own instruction and explore ways to design culturally responsive, asset-based STEM experiences that empower all learners to see themselves as capable scientists and problem-solvers.

From Block-Based Blinking to AP Computer Science: A Flexible micro:bit Pathway for K-12 Educators

Presenter: Debbie Moss, Southern California Yeshiva High School

Grade Levels: K-12

Room: 201 **Time:** 9:45 - 10:35 AM

Discover how a simple micro activity can grow into a flexible pathway for computational thinking and computer science learning across grade levels. In this hands-on session, educators will explore block-based coding, simulation, physical computing, sensors, radio communication, and text-based programming using micro technology. Participants will identify ways to adapt activities for different learners, budgets, and hardware access while exploring connections to AP Computer Science Principles.

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Games, Puzzles and Patterns, Oh My! Using Carnival Games to Teach Mathematics and Data Science

Presenter: Carlos Gonzalez, CA MESA Program

Grade Levels: K-8

Room: 201 **Time:** 11:35- 12:25 PM

Discover how real-time environmental data can turn the classroom into a climate science laboratory. In this hands-on session, educators will use Databot sensors and CODAP to collect, visualize, and analyze data related to carbon dioxide, temperature, and light. Participants will conduct rapid climate investigations and explore classroom-ready strategies that connect environmental data to California's Environmental Principles & Concepts while strengthening student inquiry, evidence-based reasoning, and data literacy.

Hands-On Biotechnology: Bringing Micropipetting to Your Classroom

Presenter: Tasha Barr, IMPOWER Learning Lab by University Lab Partners

Grade Levels: 6-12

Room: 204 **Time:** 11:35- 12:25 PM

Bring biotechnology to life through hands-on laboratory experiences that connect classroom learning to real-world science and careers. In this interactive workshop, educators will practice foundational micropipetting techniques while exploring how this essential skill is used in biotechnology research, diagnostics, and industry. Participants will also discover career pathways in the life sciences and leave with strategies for incorporating biotechnology skills and career connections into engaging STEM learning experiences.

Igniting Student Leadership Through Mentoring: A School-Based Model for Postsecondary Success

Presenter: Marina Uriarte, Big Brothers Big Sisters of Orange County & the Inland Empire

Grade Levels: K-12

Room: 202 **Time:** 11:35 - 12:45 PM

Discover how school-based mentoring can strengthen student leadership, belonging, confidence, and postsecondary readiness. This interactive session introduces High School Bigs, an evidence-informed mentoring model that empowers high school students to mentor younger peers while developing communication, leadership, and relationship-building skills. Participants will explore real-world implementation strategies, reflect on opportunities within their own schools, and identify practical ways to integrate mentoring through existing programs, student leaders, staff, and community partnerships.

Logo Lab: Design Thinking Meets Creativity

Presenter: Asya Wilbon, TGR Foundation

Grade Levels: 6-12

Room: 207 **Time:** 9:45- 11:15 AM **(90 MINUTES)**

Discover how graphic design can become a powerful tool for creativity, self-expression, and student engagement. In this hands-on session, educators will explore the Elements of Design—including line, shape, color, space, and typography—to create a personal logo that communicates identity, values, and passions. Participants will experience a ready-to-use design challenge that can be adapted across grade levels and content areas while building students' critical thinking, visual communication, and design literacy.

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Prototype Playground: Empowering Students to Think Like Designers

Presenter: Madison McCarthy, TGR Foundation
Grade Levels: 6-12
Room: Makerspace **Time:** 10:40 - 11:30 AM

Step into the role of a designer and explore how prototyping can transform the way students approach authentic problems. In this hands-on workshop, educators will brainstorm, build, test, and refine solutions while experiencing collaborative design strategies that foster creativity, critical thinking, and iterative problem-solving. Participants will leave with practical ideas for integrating engineering and design challenges across science, mathematics, humanities, and other content areas.

Seabots: Operation Beacon Relay - Programming with Sphero BOLT+ Robots

Presenter: Shane Wines, Naval Surface Warfare Center Carderock
Grade Levels: K-12
Room: 204 **Time:** 10:40 - 11:30 AM

Embark on a mission-based robotics challenge where coding, engineering, and teamwork come together. In this interactive session, educators will program Sphero BOLT+ "Seabots" to navigate beacons, communicate information, and complete a collaborative relay mission. Participants will experience how algorithms, sequencing, debugging, sensors, and autonomous systems can create joyful, career-connected STEM learning and leave with ideas for adapting the challenge across grade levels.

Using Industry Challenges for Career Connected Learning in the Classroom

Presenter: Calvin Macaraeg, TGR Foundation
Grade Levels: 9-12
Room: 202 **Time:** 9:45 - 10:35 AM

Discover how authentic industry challenges can connect classroom learning to real-world careers and workforce needs. This interactive session introduces educators to the KnoPro platform and explores how hands-on industry projects can develop technical, problem-solving, and collaboration skills. Participants will also learn practical strategies for building partnerships with local businesses and industry professionals to expand career-connected learning opportunities and create meaningful pathways for students.