

O K L A H O M A SU M M I T

57TH ANNUAL | AUGUST 1-2, 2024

STEM Division

FRIDAY, AUGUST 2, 2024

7:15 a.m. - Teacher Arrival to Tulsa Tech Peoria Campus
8:00 a.m. 3850 N Peoria Ave Tulsa, Ok 74106

8:00 a.m. - Breakout Session 1
8:45 a.m.

Session Title: TSA Updates

Presenter Name: Tami Redus

Room 101 Auditorium

Description: Updates about TSA, schedule of events/dates, planning and getting POs in place.

Session Title: Laser Engraving and Your Classroom

Presenter Name: Brandi Schwarts and Ronnie Tatum

Room 102

Description: We will go over how to incorporate a laser engraver in your classroom, the benefits of having a laser engraver, how to use and maintain a laser engraver (3D Printers) This will be for all grade levels and beginner/advanced audience

Session Title: Problem-Solving and Computational Thinking with LEGO Education

Presenter Name: Lauren Russell

Room 103

Description: Join us for an interactive session demonstrating the power of joyful, hands-on learning. During this session, you will use your problem-solving skills to design a solution to an open-ended challenge. You will practice computational thinking and bridge connections across coding, engineering, and core subjects like math and science. Learning about decomposition, pattern recognition, and more, you'll experience how computational thinking lays the foundation for skills in engineering, computer science and more, setting your students up for STEM success in the classroom and beyond.

Session Title: Recruiting: Finding Stardust to Make Stars in your CTE Programs

Presenter Name: Gayle Hahn and Tammy McDermott

Room A205

Description: Are you ready for some fun learning and idea sharing of innovative ways you can recruit student stardust at your local school or become stars through your CTE classes? Tammy and Gayle will showcase countless ideas for recruiting students to your programs to energize you. You will walk away with physical examples, have time to discuss and share ideas, and have a list of innovative ways you can recruit students in the upcoming year!

Session Title: What's Going on at Cisco Academy?

Presenter Name: Glen Wright

Room A210

Description: Pathways/resources available in Cisco Academy in Cybersecurity, Networking, Data

Session Title: Learning is Pretty Sweet-DNA Extractions

Presenter Name: Debra Wood

Room A215

Description: DNA extraction is the first step involved in learning about the genetic composition of living things and it is surprisingly simple if you know what to do! In this hands-on workshop we will demonstrate how to extract the DNA from a tasty strawberry, one of Oklahoma's specialty crops! Participants may never look at strawberries the same way again! This activity is designed mainly to introduce participants and their students to DNA. A discussion of how this DNA extraction procedure works will detail how the activity supports 3-dimensional learning. Participants will model a process that scientists use to extract DNA strands. Deoxyribonucleic acid (DNA) is a long molecule that contains the genetic instructions used in the development and functioning of all known living organisms and some viruses. Yes, DNA is in all your food!

Session Title: Engineering Your Robotics CTE Course

Presenter Name: Steff Forbes and Tim Lankford

Room A216

Description: **Beginner, Intermediate, and Advanced; High School**

As companies continue to adopt and leverage technology at a lightning pace, the demand for new skills and new jobs continues to grow. Career and technical education (CTE) provides an opportunity to prepare students for these jobs of the future by arming them with technical know-how and 21st-century skills. Join Pitsco Education for a primer on utilizing robotics in high school CTE pathways. During this session, we'll discuss how studying robotics provides students with workforce-ready skills and an engaging, relevant CTE classroom experience. Then, participants will team up for a fun and engaging mini robotics competition.

Session Title: Positive Classroom Culture

Presenter Name: Trisha Swift

Room A220

Description: This workshop will help teachers learn an approach to fostering a positive school culture and will equip teachers with both the understanding and practical tools they need to make a tangible impact in their classrooms.

Session Title: Surviving Your First Year

Presenter Name: Kelli Carnes

Room 401

Description: **New Teacher Session** – This presentation provides essential guidance for new CTE STEM teachers to successfully navigate their first year. It covers key topics such as setting up your school calendar, managing supplies, ensuring classroom safety, and organizing TSA (Technology Student Association) events. Additionally, it offers practical tips for establishing a well-structured classroom and preparing for substitute teachers. By attending, you'll gain

valuable insights and tools to confidently start your teaching journey and make a positive impact on your students.

Session Title: Let's Move That Oil- Middle School Math

Presenter Name: Michael Lewchuk

Room 402B

Description: 5th grade – pre-Algebra – Math

Have you ever wondered how the concept of slope is used by the Oklahoma petroleum industry?

Mathematicians think of slope as rise over run or the change in the y-values divided by the change in the x-values. Whenever a line is not vertical, it has a slope. The slope can be uphill or downhill. Its steepness depends on the difference in height between its points.

In the oil and natural gas industry, the concept of slope is used in directional drilling.

Session Title: Water and Membranes

Presenter Name: Keri Shingleton

Room 404

Description: In this workshop we will use hands-on foundational models to wonder and explore as the properties of water are revealed through play! Next, based on these discoveries, we will construct membranes and learn about the properties of biological membranes. The power of modeling for a learner centered classroom will be emphasized throughout the workshop. These activities are appropriate for middle school through AP level classrooms. While the membrane activities are especially important in biology classes, the concepts learned through the water section and applied in membrane construction are important for chemistry as well.

Session Title: OSU CEAT hands-on Activities

Presenter Name: Brandy Mays and Mary Tran

Room 405F

Description: Join us in building personal solar ovens and marble mazes, plus ideas for other hands-on engineering activities you can do in your classroom!

Session Title: Acid Rain and Buffers/ Disappearing Bees (middle school)

Presenter Name: Science Take-Out

Room 406

Description: Join Science Take-Out for an engaging middle school workshop where you will do a two-part activity in celebration of World Bee Day to explain and interact with different scenarios about sick bees using charts and graphs. Then, test two mediums to find the best acid rain buffer. This hands-on session is interactive science education, combines creativity and scientific inquiry to explore cellular processes and environmental chemistry. Dive into learning with Science Take-Out's innovative approach!

Session Title: The U.S. Army in Your Classroom

Presenter Name: Nita McGee

Room 407

Description: The ASVAB CEP is not solely meant for military enlistments, it is an additional resource that will provide students with the information needed in seeking out detailed college and career opportunities, scholarships, and the possibility of military enlistments. By creating a portfolio, students can keep track of their future endeavors. AND IT IS FREE, there's no line to enlistment, but there's endless link to the various possibilities for post high school plans.

Session Title: Exploring Cyber Security with OCII

Presenter Name: Chad Raduege, Tywania Griffin, Timothy Crisp

Room 409

Description: We will showcase an exciting hands-on demonstration using Micro:bits. Micro:bits are small, programmable devices that make learning about cyber security fun and interactive. During this demonstration you will learn basic cyber security concepts and the importance of digital safety. Our demonstration will illustrate key cyber security principles such as encryption and secure communications.

Session Title: Civil Air Patrol: Hear From a high-ranking High School CAP Student

Presenter Name: Spencer Lee

Room 410

Description: Civil Air Patrol program introduction and opportunities for students ages 12-21. Civil Air Patrol's cadet program transforms youth into dynamic Americans and aerospace leaders through a curriculum that focuses on leadership, aerospace, fitness, and character. As cadets participate in these four elements, they advance through a series of achievements, earning honors and increased responsibilities along the way. Many of the nation's astronauts, pilots, engineers, and scientists first explored their careers through CAP. Civil Air Patrol's award-winning aerospace education program promotes aerospace, aviation, and STEM-related careers with engaging, standards-based, hands-on curriculum and activities. It shapes the experiences and aspirations of youth both in and outside CAP's cadet program.

Session Title: RLS 3D Printing-Success, Tips and Tricks, and How to Repair

Presenter Name: David Ouellette

Room 411A&B

Description: Tips and tricks for successful 3d printing in the classroom environment. This information will be most helpful for beginners and intermediate skill levels. With almost 10 years of field repair experience, and training from more than 10 3D printer manufactures, I will be speaking from real world experiences and repairs.

Session Title: Safety in Educational Facilities

Presenter Name: Tulsa Fire Department -

Room 414A

Description: This session will be covering cover egress, emergency response plans, and classroom safety.

Session Title: Google Suite for Education: *Beginner* tips for GSuite Apps

Presenter Name: Casey Woods

Room 414B

Description: Are you a STEM teacher who has had on-the-job Google training? Do you want to hone your skills to better serve your students and provide your students with GSuite skills? This session will overview basic skills in the primary GSuite apps including but not limited: Docs, Sheets, Classroom, and Drive. Preparation for Google Educator Level 1 Certification will be discussed.

Session Title: Unlock Your Potential: Building Lifelong Tech Skills with CompTIA Spark

Presenter Name:

Room 414C

Description: Discover how CompTIA Spark curriculum empowers middle-grade students to unlock their potential and build essential tech skills for life. Through engaging and hands-on exploration of emerging technologies, students gain a solid foundation in tech concepts, preparing them for future opportunities in high school and beyond.

In this demonstration you'll learn how to:

- **Master foundational skills and key concepts:** Dive into the essential knowledge areas aligned with CompTIA Spark curriculum.
- **Harness project-based learning:** Discover how to effectively utilize project-based learning to achieve your educational and professional objectives.
- **Bridge the tech education gap:** Understand the critical importance of preparing students with tech skills before they enter high school.
- Whether you're looking to implement tech education into your existing curriculum or expand your footprint, CompTIA Spark curriculum offers a supportive and dynamic learning environment tailored to your level.

Session Title: Strategic Social Media Usage of Educators

Presenter Name: AJ Graffeo

Room 414D

Description: So, you have a social media account, and you post on it, but now what?! Are you using it strategically to shape perspectives, boost morale, increase engagement, and to authentically connect with your followers? Do you have buy-in from admin (and yourself) on the power of social media? By the end of this session, middle school and high school educators who are beginner to intermediate social media users will be able to manage their program's social media accounts strategically, yet simply, maximizing their time and efforts while yielding positive analytics.

Session Title: Biotechnology Basics: Exploring Agarose Gel Electrophoresis

Presenter Name: Dr. Danielle Snowflack- Edvotek

Room 425

Description: Agarose gel electrophoresis is a biotechnology technique used every day in research labs in labs worldwide. Electrophoresis uses electricity and a porous gel matrix to separate different molecules into discrete zones, or bands, based on physical properties like charge, size, and shape. In our dynamic workshop, we will dive into every step of the process—from loading and running gel, exploring the mechanisms of separation, and finally analyzing the results using two different electrophoresis systems.

Session Title: Basic Data Collection with your Vernier Equipment

Presenter Name: Vernier joining us live Via Zoom!!

Room 427

Description: This workshop will cover data collection with a range of Vernier equipment. We will be using wired and Go Direct sensors with the LabQuest app and Graphical Analysis. Participants will become familiar with compatibility of our various generations of sensors, interfaces, and software. If you have equipment that you are not familiar with, or unsure if it will work with our software, this is the workshop for you.

Session Title: KidWind

Presenter Name: Kathy Jackson

Room 443

Description: Join us as we will explore series and parallel circuits, solar exploration, and a grid activity. Hands on activities that you can take back to your classroom!

9:00 a.m. - Breakout Session 2
9:45 a.m.

Session Title: TSA: Promote and Grow Your Chapter

Presenter Name: Panel
Room 101 Auditorium

Session Title: Laser Engraving and Your Classroom

Presenter Name: Brandi Schwarts and Ronnie Tatum
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Description: We will go over how to incorporate a laser engraver in your classroom, the benefits of having a laser engraver, how to use and maintain a laser engraver (3D Printers) This will be for all grade levels and beginner/advanced audience

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Session Title: What's Going on at Cisco Academy?

Presenter Name: Glen Wright
Room A210

Description: Pathways/resources available in Cisco Academy in Cybersecurity, Networking, Data

Session Title: Illuminating Your Mind-Paper Circuits

Presenter Name: Debra Wood
Room A215

Description: Deepen your students' understanding of energy and energy transfer with paper circuits! Participants will be given the opportunity to design and create paper circuits that demonstrate the flow and transfer of energy from a battery to light bulb. The idea that the paper circuit can create a more concrete understanding for an abstract idea will hopefully resonate with all participants, and their students, in a unique way. Participants will become completely engaged in this hands-on activity! Energy and energy transfer are incredibly abstract concepts that young students (and even adults) tend to struggle with, but with paper circuits, learners construct meaning and understanding through a more concrete view of energy transfer.

Session Title: Positive Classroom Culture

Presenter Name: Trisha Swift

Room A220

Description: This workshop will help teachers learn an approach to fostering a positive school culture and will equip teachers with both the understanding and practical tools they need to make a tangible impact in their classrooms.

Session Title: Create Future Ready Coders and Makers

Presenter Name: Steff Forbes

Room A222

Description: **Beginner and Intermediate; Middle School and High School**

With the growth rate for tech jobs being 2x that of the national rate through the next decade, today's students have a vast number of career opportunities awaiting them.

What's more: 58 percent of all tech jobs are outside the technology sector. Computer science education opens a world of possibilities for students, preparing them for careers in a variety of industries. Join Pitsco Education for an engaging session focused on creating a Grades 6-12 program that exposes students to a variety of concepts and careers including computer science, game development, web development, and academic esports– all while preparing them for industry certifications.

Session Title: 5 Year Program Evaluation

Presenter Name: Angela Teeman

Room 401

Description: Only those that have their CareerTech 5-Year Program Evaluation in FY25 should attend this. Learn what you need to prepare before your onsite visit with your program specialist; see the evaluation document, the STEM Standards, examples of documents and get your questions answered.

Session: Exploring Computer Science Education Legislative Requirements and Frequently Asked Questions (Bring your laptop)

Presenter: Jeremy Maker

Room 401C (Inside 401)

Description: This session explores computer science legislation, examines the structure of the standards, and reviews frequently asked questions for computer science.

Session Title: Traveling Sound-Science Middle School

Presenter Name: Jeffrey Patterson

Room 402C

Description: Have you ever wondered if sound waves can travel through matter?

A wave is a disturbance that travels through a medium, which transports energy from one location to another location. The medium is the particles of a material through which the wave is moving. Waves can be transmitted through gases, liquids, and solids. There are two main types of waves: transverse waves and longitudinal waves. In a transverse wave, the particles of the medium vibrate with an up-and-down motion. In a longitudinal wave, the particles of the medium vibrate back and forth along the path that the wave travels.

Session Title: Let's Move That Oil MS Math

Presenter Name: Michael Lewchuk

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In the oil and natural gas industry, the concept of slope is used in directional drilling.

Session Title: DNA with a Twist

Presenter Name: Keri Shingleton

Room 404

Description: Models are central to everything we know about the structure of DNA. Crick and Watkins ultimately built a model of DNA as their crowning achievement and earned a Nobel Prize from it! In this workshop we will engage in models as a way of knowing and step and consider the model maker's story. What is each model designed for? How can using several different models help learners deepen their understanding? And how can we use modeling as a way to assess learning? Audience: middle school through higher ed.

Session Title: OSU CEAT hands-on Activities

Presenter Name: Brandy Mays and Mary Tran

Room 405F

Description: Hands-On activity of building a personal solar oven and marble maze, plus ideas on other hands-on engineering activities you can bring back to your classroom.

Session Title: Cell Communication (high school)

Presenter Name: TBD

Room 406

Description: Join Science Take-Out for an engaging high school workshop where you will construct a model of cell communication pathways. Through this activity, your students will grasp the fundamental concepts of cellular interactions and signaling mechanisms that govern life processes. This is a hands-on session is interactive science education, combines creativity and scientific inquiry to explore cellular processes. Dive into learning with Science Take-Out's innovative approach!

Session Title: The U.S. Army in Your Classroom

Presenter Name: Nita McGee

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impacts a reality. Good for Oklahoma, good for your school, and good for our students. We'll make this a fun session!

Session Title: Civil Air Patrol: Hear From a high-ranking High School CAP Student

Presenter Name: Spencer Lee

Room 410

Description: Civil Air Patrol program introduction and opportunities for students ages 12-21. Civil Air Patrol's cadet program transforms youth into dynamic Americans and aerospace leaders through a curriculum that focuses on leadership, aerospace, fitness, and character. As cadets participate in these four elements, they advance through a series of achievements, earning honors and increased responsibilities along the way. Many of the nation's astronauts, pilots, engineers, and scientists first explored their careers through CAP. Civil Air Patrol's awarding-winning aerospace education program promotes aerospace, aviation, and STEM-related careers with engaging, standards-based, hands-on curriculum and activities. It shapes the experiences and aspirations of youth both in and outside CAP's cadet program.

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Presenter Name: Tulsa Fire Department

Room 414A

Description: This session will be covering cover egress, emergency response plans, and classroom safety.

Session Title: Google Suite for Education: *Intermediate* tips for GSuite Apps

Presenter Name: Casey Woods

Room 414B

Description: Are you a STEM teacher who can use the basics features of primary GSuite Apps? Do you want to add a new level of expertise to your skills and those your students? Come experience an overview of Gsuite app integration using primary apps in addition to Classroom and Sites. Certified Google Educator Level 2 credentialing will also be discussed.

Session Title: Unlock Your Potential: Building Lifelong Tech Skills with CompTIA Spark

Presenter Name: Kay Frink

Room 414C

Description: Discover how CompTIA Spark curriculum empowers middle-grade students to unlock their potential and build essential tech skills for life. Through engaging and hands-on exploration of emerging technologies, students gain a solid foundation in tech concepts, preparing them for future opportunities in high school and beyond.

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Session Title: Strategic Social Media Usage of Educators

Presenter Name: AJ Graffeo

Room 415D

Description: So, you have a social media account, and you post on it, but now what?! Are you using it strategically to shape perspectives, boost morale, increase engagement, and to authentically connect with your followers? Do you have buy-in from admin (and yourself) on the power of social media? By the end of this session, middle school and high school educators who are beginner to intermediate social media users will be able to manage their program's social media accounts strategically, yet simply, maximizing their time and efforts while yielding positive analytics.

Session Title: Drones in the Classroom and Beyond: Using Tech to Promote Careers

Presenter Name:

Room 415

Description: All Levels - Exposure to various careers is crucial for middle school and high school, and drones are one technology becoming more prevalent in industry every single day. Join Pitsco Education to get hands on with drones while learning about cross-curricular and CTE applications. Our presenters will discuss how drones are a perfect introduction to skills and knowledge, from vocabulary and physics concepts to flying and coding practice, and how that knowledge can then contribute to obtaining industry certifications even before graduation. Witness how different drone options can be incorporated into your curriculum, learn about safety and compliance standards, and even get a chance to fly a drone.

Session Title: Biotechnology Basics: Exploring Agarose Gel Electrophoresis

Presenter Name: Dr. Danielle Snowflack- Edvotek

Room 425

Description: Agarose gel electrophoresis is a biotechnology technique used every day in research labs in labs worldwide. Electrophoresis uses electricity and a porous gel matrix to separate different molecules into discrete zones, or bands, based on physical properties like charge, size, and shape. In our dynamic workshop, we will dive into every step of the process—from loading and running gel, exploring the mechanisms of separation, and finally analyzing the results using two different electrophoresis systems.

Session Title: Building Bridges with the Engineering Design Process

Presenter Name: Vernier joining us live Via Zoom!!

Room 427

Descriptions: This workshop will provide a strategy for introducing students to the Engineering Design Process through the activity of a bridge building competition/activity. The following key steps will be emphasized:

- Clarifying the problem to be solved
- Gathering data to inform your options
- Selecting a solution and building a prototype
- Testing and evaluating the chosen solution

-Revising and refining the solution

This will be demonstrated using the Vernier Structures and Materials Tester, but can be applied to other tools for data collection and testing.

Session Title: KidWind

Presenter Name: Kathy Jackson

Room 443

Description: Join us as we will explore series and parallel circuits, solar exploration, and a grid activity. Hands on activities that you can take back to your classroom!

10:00 a.m. - Breakout Session 3
10:45 a.m.

Session Title: TSA Curriculum in the High School

Presenter Name: Tara Dye

Room 101 Auditorium

Description: Taking the TSA Blue Cap Curriculum and making it a part of your classroom curriculum, integrating the components and skills, and preparing your students to be successful in competition.

Session Title: Laser Engraving and Your Classroom

Presenter Name: Brandi Schwarts and Ronnie Tatum

Room 102

Description: We will go over how to incorporate a laser engraver in your classroom, the benefits of having a laser engraver, how to use and maintain a laser engraver (3D Printers) This will be for all grade levels and beginner/advanced audience

Session Title: STEM in Public Libraries

Presenter Name: Aaron Pence, Cari Boatright Rérat, Jason Gonzales and Theri Ray

Room 103

Description: This presentation is for anyone wanting to learn about what STEM programs that public libraries offer.

Session Title: Recruiting: Finding Stardust to Make Stars in your CTE Programs

Presenter Name: Gayle Hahn and Tammy McDermott

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Session Title: Securing Oklahoma with the Power of Community

Presenter Name: Amber Mangham

Room A210

Description: Cybersecurity continues to become more of a priority for state and local governments and public and private organizations in the critical infrastructure sectors. As the cybersecurity landscape continues to grow and evolve, it is important for professionals in every field to keep themselves updated and informed on current cyber threats and the tactics, techniques, and procedures used by threat actors. The Oklahoma Information Sharing and Analysis Center (OK-ISAC) is a team under OMES Cyber Command that focuses on Securing Oklahoma through the Power of Community. Come learn who we are and how YOU can better protect yourself, your school, and your family.

Session Title: Get to know iCEV

Presenter Name: Carla Campbell

Room A215

Description: It's time to stop being overwhelmed by your responsibilities and requirements. With iCEV, you have everything you need to plan courses, certify students, and prepare them for success - all in one place. Our easy-to-use, comprehensive CTE solution provides you the necessary resources and systems to do your best work.

Session Title: Illuminate Grades 5-8 Computer Science

Presenter Name: Steff Forbes

Room A216

Description: **Beginner and Intermediate; Middle School**

Today's students will need computer science and 21st-century skills to thrive in tomorrow's careers. Skills such as computational thinking, problem-solving, and critical thinking will be valuable in any field of study or career students choose.

Join Pitsco Education for an engaging session focused on using hands-on robots to make computer science come to life for Grades 5-8 students. Our presenters will share strategies for classroom implementation and how to integrate coding and career exploration into core subjects. Attendees will then receive a preview of a new middle school coding and robotics solution coming soon. Lastly, participants will pair up for a hands-on activity to code a robot to help in a restaurant setting.

Session Title: Anxiety in the Classroom

Presenter Name: Trisha Swift

Room A220

Description: This workshop provides applicable skills to teachers to be able to be aware and recognize signs of anxiety in students. They will learn real life interventions to help lower anxiety among students.

Session Title: AutoDesk Resources in Your Classroom

Presenter Name: TBD/Virtual

Room A222

Description: CAD, Fusion 360, resources for you and students, tips and tricks.

Session Title: Inspiring and Preparing Youth for STEM-Enabled Futures

Presenter Name: Levi Patrick and Michelle Rahn

Room 401

Description: Tulsa Regional STEM Alliance serves as an ecosystem leader in northeast Oklahoma. Learn about their work to ensure all youth have access to excellent STEM experiences in school, out of school, in competition settings, and with mentor relationships. Resources, professional development, grants, and networking experiences are all free to Oklahoma educators! Join us to learn more as we explore how you can create the learning environment that sets students on a strong foundation for their future.

Session: Exploring Computer Science Education Legislative Requirements and Frequently Asked Questions (Bring your laptop)

Presenter: Jeremy Maker

Room 401C (Inside 401)

Description: This session explores computer science legislation, examines the structure of the standards, and reviews frequently asked questions for computer science.

Session Title: Traveling Sound- Science Middle School

Presenter Name: Jeffrey Patterson

Room 402C

Description: Have you ever wondered if sound waves can travel through matter?

A wave is a disturbance that travels through a medium, which transports energy from one location to another location. The medium is the particles of a material through which the wave is moving. Waves can be transmitted through gases, liquids, and solids. There are two main types of waves: transverse waves and longitudinal waves. In a transverse wave, the particles of the medium vibrate with an up-and-down motion. In a longitudinal wave, the particles of the medium vibrate back and forth along the path that the wave travels.

Session Title: Let's Move That Oil MS Math

Session Title: Drill in the Right Direction- High School Math

Presenter Name: Michael Lewchuk

Room 402B

Description: High School Level – Math

Have you ever wondered how angles and other math concepts are used by the Oklahoma petroleum industry?

Mathematical concepts of angles, functions, unit conversions, and volume are all used within the context of drilling oil and natural gas wells. This activity will show these types of concepts are used by people employed in the oil and natural gas industry.

Session Title: CRISPR Adaptive Immunity... a tale of bacterial defense

Presenter Name: Keri Shingleton

Room 404

Description: The idea CRISPR has become synonymous with the idea of genome editing, but do you know what CRISPR really is? Come to this hands-on minds-on session to learn more about the fascinating biology of CRISPR systems and how scientists have modified them to edit genomes... and so much more!

This workshop is more appropriate for the curricular connections for high school through higher ed classrooms, but everyone is welcome to attend and learn!

Session Title: OSU CEAT hands-on Activities

Presenter Name: Brandy Mays and Mary Tran

Room 405F

Description: Hands-On activities like building personal solar ovens and marble mazes, plus idea for other hands-on engineering activities you can use in your classroom!

Session Title: A Medical Mystery of Epidemic Proportions (high school)

Presenter Name: Science Take-Out

Room 406

Description: Discover how to tackle unexplained epidemics with Science Take-Out's hands-on high school workshop. Teachers will explore scenarios using rapid test kits, antibody tests, and simulated DNA microarrays to investigate a fictional outbreak. This session provides a comprehensive approach to diagnosing and understanding epidemics, culminating in a discussion on preventive measures for future outbreaks. Enhance your science curriculum with interactive, real-world applications from Science Take-Out's session.

Session Title: The U.S. Army in Your Classroom

Presenter Name: Nita McGee

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Description: The ASVAB CEP is not solely meant for military enlistments, it is an additional resource that will provide students with the information needed in seeking out detailed college and career opportunities, scholarships, and the possibility of military enlistments. By creating a portfolio, students can keep track of their future endeavors. AND IT IS FREE, there's no line to enlistment, but there's endless link to the various possibilities for post high school plans.

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Presenter Name: Spencer Lee

Room 410

Description: Civil Air Patrol program introduction and opportunities for students ages 12-21. Civil Air Patrol's cadet program transforms youth into dynamic Americans and aerospace leaders through a curriculum that focuses on leadership, aerospace, fitness, and character. As cadets participate in these four elements, they advance through a series of achievements, earning honors and increased responsibilities along the way. Many of the nation's astronauts, pilots, engineers, and scientists first explored their careers through CAP. Civil Air Patrol's awarding-winning aerospace education program promotes aerospace, aviation, and STEM-related careers with engaging, standards-based, hands-on curriculum and activities. It shapes the experiences and aspirations of youth both in and outside CAP's cadet program.

Session Title: RLS 3D Printing-Success, Tips and Tricks, and How to Repair

Presenter Name: David Ouellette

Room 411A&B

Description: Tips and tricks for successful 3d printing in the classroom environment. This information will be most helpful for beginners and intermediate skill levels. With almost 10 years of field repair experience, and training from more than 10 3D printer manufactures, I will be speaking from real world experiences and repairs.

Session Title: Safety in Educational Facilities

Presenter Name: Tulsa Fire Department

Room 414A

Description: This session will be covering cover egress, emergency response plans, and classroom safety.

Session Title: Biomed Capstone- Fellowship Program Year 2

Presenter Name: Casey Woods

Room 414B

Description: Last year, data from the 1st year of the Fellowship Program at Tri County Tech was presented. We continued our program for a 2nd year, with minor changes. We will discuss 2nd year results, what minor changes were made, and what the future for a 3rd year of the program. The Fellowship program is a hybrid 3rd year option for Biomed students that includes both internship and didactic instruction to enhance participation in HOSA and provide certification opportunities for students.

Session Title: Unlock Your Potential: Building Lifelong Tech Skills with CompTIA Spark

Presenter Name:

Room 414C

Description: Discover how CompTIA Spark curriculum empowers middle-grade students to unlock their potential and build essential tech skills for life. Through engaging and hands-on exploration of emerging technologies, students gain a solid foundation in tech concepts, preparing them for future opportunities in high school and beyond.

In this demonstration you'll learn how to:

- **Master foundational skills and key concepts:** Dive into the essential knowledge areas aligned with CompTIA Spark curriculum.
- **Harness project-based learning:** Discover how to effectively utilize project-based learning to achieve your educational and professional objectives.
- **Bridge the tech education gap:** Understand the critical importance of preparing students with tech skills before they enter high school.

Whether you're looking to implement tech education into your existing curriculum or expand your footprint, CompTIA Spark curriculum offers a supportive and dynamic learning environment tailored to your level.

Session Title: Strategic Social Media Usage of Educators

Presenter Name: AJ Graffeo

Room 415D

Description: So, you have a social media account, and you post on it, but now what?! Are you using it strategically to shape perspectives, boost morale, increase engagement, and to authentically connect with your followers? Do you have buy-in from admin (and yourself) on the power of social media? By the end of this session, middle school and high school educators who are beginner to intermediate social media users will be able to manage their program's social media accounts strategically, yet simply, maximizing their time and efforts while yielding positive analytics.

Session Title: Understanding Relevant Drone Laws

Presenter Name:

Room 415

Description: (Beginner, Intermediate, Advanced, Middle and High School)

Educators new to drones and those experienced with the technology are invited to join a discussion of drone laws and regulations at both the federal and state level.

Pitsco Education's drone experts will provide knowledge of the current state of these guidelines and what the future is expected to bring. They will offer tips on how to do your due diligence when you are setting up your drone program, purchasing drone hardware, applying for and using funding, and more.

Session Title: CRISPR Connections

Presenter Name: Dr. Danielle Snowflack- Edvotek

Room 425

Description: The gene-editing tool CRISPR is one of the most exciting biotechnology breakthroughs of the past decade. This system evolved in bacteria as a defense against viral attacks. Today, researchers know how to design guide RNAs to precisely target specific genes. In this virtual workshop, we will discuss CRISPR biology and the application of the technology to a cure for genetic diseases.

Session Title: Advanced Biomed Focusing on specific sensors.

Presenter Name: Vernier and Bio-Rad joining us live Via Zoom!!

Room 427

Description:

Session Title: KidWind

Presenter Name: Kathy Jackson

Room 443

Description: Join us as we will explore series and parallel circuits, solar exploration, and a grid activity. Hands on activities that you can take back to your classroom!

11:00 a.m. - Breakout Session 4

11:45 a.m.

Session Title: TSA Curriculum in the Middle School

Presenter Name: Tara Dye

Room 101 Auditorium

Description: Taking the TSA Blue Cap Curriculum and making it a part of your classroom curriculum, integrating the competitions and skills, and preparing your students to be successful in competition.

Session Title: Laser Engraving and Your Classroom

Presenter Name: Brandi Schwarts and Ronnie Tatum

Room 102

Description: We will go over how to incorporate a laser engraver in your classroom, the benefits of having a laser engraver, how to use and maintain a laser engraver (3D Printers) This will be for all grade levels and beginner/advanced audience

Session Title: Choose Aerospace

Presenter Name: Crystal McGuire

Room 103

Description: "Round table" type of discussions, conversations, get answers to your Choose Aerospace questions, and build your aircraft teacher network

Session Title: Recruiting: Finding Stardust to Make Stars in your CTE Programs

Presenter Name: Gayle Hahn and Tammy McDermott

Room A205

Description: Are you ready for some fun learning and idea sharing of innovative ways you can recruit student stardust at your local school o become stars through your CTE classes? Tammy and Gayle will showcase countless ideas for recruiting students to your programs to energize you. You will walk away with physical examples, have time to discuss and share ideas, and have a list of innovative ways you can recruit students in the upcoming year!

Session Title: STEM in Public Libraries: Spaces available to you and your students!

Presenter Name: Panel

Room A210

Description: This presentation is for anyone wanting to learn about what STEM programs that public libraries offer.

Session Title: Get to know iCEV

Presenter Name: Carla Campbell

Room A215

Description: It's time to stop being overwhelmed by your responsibilities and requirements. With iCEV, you have everything you need to plan courses, certify students, and prepare them for success - all in one place. Our easy-to-use, comprehensive CTE solution provides you the necessary resources and systems to do your best work.

Session Title: Growing Good in the Classroom with Aquaponics

Presenter Name: Reece Hundly

Room A216

Description: This presentation is for the beginning or seasoned educators with a desire to incorporate an aquaponic system in their classroom at any scale. Our session will discuss the basic scientific processes necessary for a healthy aquaponic system as well as maintaining and troubleshooting problems that may arise in the aquaponic system as a living ecosystem. We will also share ideas on how to incorporate aquaponics in the classroom as a design challenge.

Session Title: Anxiety in the Classroom

Presenter Name: Trisha Swift

Room A220

Description: This workshop provides applicable skills to teachers to be able to be aware and recognize signs of anxiety in students. They will learn real life interventions to help lower anxiety among students.

Session Title: Autodesk in Your Classroom!

Presenter Name: Jim Swain

Room A222

Description: CAD, Fusion 360, resources for you and students, tips and tricks.

Session Title: Inspiring and Preparing Youth for STEM-Enabled Futures

Presenter Name: Levi Patrick and Michelle Rahn

Room 401

Description: Tulsa Regional STEM Alliance serves as an ecosystem leader in northeast Oklahoma. Learn about their work to ensure all youth have access to excellent STEM experiences in school, out of school, in competition settings, and with mentor relationships. Resources, professional development, grants, and networking experiences are all free to Oklahoma educators! Join us to learn more as we explore how you can create the learning environment that sets students on a strong foundation for their future.

Session Title: Traveling Sound- Science Middle School

Presenter Name: Jeffrey Patterson

Room 402C

Description: Have you ever wondered if sound waves can travel through matter? A wave is a disturbance that travels through a medium, which transports energy from one location to another location. The medium is the particles of a material through which the wave is moving. Waves can be transmitted through gases, liquids, and solids. There are two main types of waves: transverse waves and longitudinal waves. In a transverse wave, the particles of the medium vibrate with an up-and-down motion. In a longitudinal wave, the particles of the medium vibrate back and forth along the path that the wave travels.

Session Title: Let's Move That Oil MS Math

Session Title: Drill in the Right Direction- High School Math

Presenter Name: Michael Lewchuk

Room 402B

Description: High School Level – Math

Have you ever wondered how angles and other math concepts are used by the

Oklahoma petroleum industry?

Mathematical concepts of angles, functions, unit conversions, and volume are all used within the context of drilling oil and natural gas wells. This activity will show these types of concepts are used by people employed in the oil and natural gas industry.

Session Title: Unfolding the Mystery of Protein Structure and Function

Presenter Name: Keri Shingleton

Room 404

Description: In this session we will wonder and play with models to reveal the basic rules of protein structure and reinforce the concept of how mutations can alter protein structure and function. Next, we will play with models to help reinforce the properties of enzymes. This session is appropriate for all learners, and the activities we investigate could be used in any classroom—middle school through higher ed!

Session Title: OSU CEAT hands-on Activities

Presenter Name: Brandy Mays and Mary Tran

Room 405F

Description: Hands-On activities building personal solar ovens and marbles mazes, plus ideas for other hands-on engineering activities to take back to your classroom.

Session Title: Engineering a Living Medicine (high School)

Presenter Name:

Room 406

Description: Join us for an engaging and hands-on teacher training session hosted by Science Take Out. In this session, you will use a specialized kit to explore the process of engineering a living medicine for a patient's rare genetic disorder. Participants will:

1. Test Blood for PHP Levels
2. Build and Adjust an Engineered Chromosome Model for E. coli introduction.
3. Investigate the Clinical Trials Process

Gain practical skills and knowledge to bring cutting-edge biotechnology into your classroom and inspire future scientists.

Session Title: The U.S. Army in Your Classroom

Presenter Name: Nita McGee

Room 407

Description: The ASVAB CEP is not solely meant for military enlistments, it is an additional resource that will provide students with the information needed in seeking out detailed college and career opportunities, scholarships, and the possibility of military enlistments. By creating a portfolio, students can keep track of their future endeavors. AND IT IS FREE, there's no line to enlistment, but there's endless link to the various possibilities for post high school plans.

Session Title: Exploring Cyber Security with OCII

Presenter Name: Chad Raduege, Tywania Griffin, Timothy Crisp

Room 409

Description: We will showcase an exciting hands-on demonstration using Micro:bits. Micro:bits are small, programmable devices that make learning about cyber security fun and interactive. During this demonstration you will learn basic cyber security concepts and the importance of digital safety. Our demonstration will illustrate key cyber security principles such as encryption and secure communications.

Session Title: Civil Air Patrol: Hear From a high-ranking High School CAP Student

Presenter Name: Spencer Lee

Room 410

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Session: Drones In classroom and Beyond

Presenter: David Meador and Jaci Jenkins

Room 415

Description: (Beginner, Intermediate, Advanced, Middle and High School)

Exposure to various careers is crucial for middle school and high school, and drones are one technology becoming more prevalent in industry every single day. Join Pitsco Education to get hands on with drones while learning about cross-curricular and CTE applications.

Our presenters will discuss how drones are a perfect introduction to skills and knowledge, from vocabulary and physics concepts to flying and coding practice, and how that knowledge can then contribute to obtaining industry certifications even before graduation. Witness how different drone options can be incorporated into your curriculum, learn about safety and compliance standards, and even get a chance to fly a drone

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Presenter Name: Dr. Danielle Snowflack- Edvotek

Room 425

Description: The gene-editing tool CRISPR is one of the most exciting biotechnology breakthroughs of the past decade. This system evolved in bacteria as a defense against viral attacks. Today, researchers know how to design guide RNAs to precisely target specific genes. In this virtual workshop, we will discuss CRISPR biology and the application of the technology to a cure for genetic diseases.

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Presenter Name: Kathy Jackson

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12:00 p.m. - Comprehensive Teacher Update Meeting

12:20 p.m. Tonja Norwood

Room 101 Auditorium

11:45 a.m. - Tech Center Teachers Lunch Provided by OkACTE STEM Board-Ted's

1:00 p.m. *Dining Hall*

- 12:20 p.m. - Comprehensive Teacher Lunch Provided by OkACTE STEM Board- Ted's
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- 1:00 p.m. - Comprehensive Teacher Update Meeting
1:20 p.m. Tonja Norwood
Room 101 Auditorium
- 1:30 p.m. - Networking with OkACTE STEM Regional Vice Presidents
2:15 p.m. *Rooms TBD*
- 2:25 p.m. - Networking with Program Area and Industry Partners
4:00 p.m. *Rooms TBD*
- 4:00 p.m. **Conference Adjourns**