



29th Annual OCTC

TIE Conference

Teachers, Industry & Environment Conference

Wednesday, October 12, 2022

- 4:00-6:00 p.m. **Conference Registration**
- 5:00-6:00 p.m. **Welcome Dinner – *Sponsored by The Lubrizol Corporation***
- 6:15 p.m. **Shuttle Transportation to Ashland Chemical Company**
- 6:45 p.m. **Tour of Ashland Chemical Company**
Ashland Chemical Company is a global specialty chemical company that provides products, services and solutions throughout a variety of industries. The tour of Ashland Chemical Company provides conference participants an inside look at an operating chemical plant.
- 8:30 p.m. **Depart for Conference Hotel**

Thursday, October 13, 2022

- 7:00 a.m. **Breakfast**
- 7:45 a.m. **Conference Opening Remarks**
Jenn Klein, President, Ohio Chemistry Technology Council
- 7:55 a.m. **Introduction of Ashland University Graduate Credit Opportunity**
Linda Pettit, Ashland University
- 8:00 a.m. **Teaching Science with TOYS - *Presented by LyondellBasell***
Unlock the mysteries of chemistry for your students by learning to use both homemade and purchased toys in your classes. Teachers will explore hands-on science activities that use toys and other common household items to teach the principles of scientific inquiry, physics and chemistry.
Amy Weiskittel, LyondellBasell
- 10:00-10:10 a.m. **Break**
- 10:10-11:00 a.m. &
11:10-12:00 p.m. **Concurrent Sessions**
- Dancing Bubbles - *Presented by Solvay***
In this activity teachers will observe the relative densities of household liquids, like syrup, oil and alcohol and solids, like plastics, wood and paper.
Bonnie Bishop & Kelydra Welcker, Solvay
- Project WET Sampler - *Presented by Ohio EPA***
On “The Incredible Journey,” students simulate the movement of water molecules within the water cycle. “Ask the Bugs” simulates bioassessment of a stream, the way that Ohio EPA collects macroinvertebrates as an indicator of water quality.
Carolyn Watkins & Ryan Bourgart, Ohio EPA



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Thursday, October 13, 2022 (Continued)

12:00-1:00 p.m. Lunch – *Sponsored by PPG*

1:00-1:15 p.m. Break

1:15-2:15 p.m. Concurrent Sessions

&2:30-3:30 p.m.

Plastics in Industry & Environment – Presented by Covestro

Through a series of interactive demonstrations, participants will experience the stages of plastics manufacturing, including polymerization, extrusion, molding, quality analysis, and recycling. Participants will demonstrate polymer reactions, participate in a live color matching process, and experience tabletop-scale representations of extrusion, molding, and quality analysis processes. Participants will also be introduced to information on the career opportunities and education requirements in the industry.

Tim Frisch, Jim Hamilton, Adam Houdeshell, Jeremy Bennett, Steve Burgess, Sarah Boes, Paul Robertson, Jacob Rohr, Derek Fulk

NASA STEM Computational Thinking: Propulsion with the SLS Rocket.

Explore the practice of computational thinking and include elements of a real NASA mission. NASA's Artemis program will return humans to the lunar surface for the first time since 1972. Like all rockets, the success of the SLS launch vehicle is strongly influenced by the rocket's design and the trajectory of flight. With its unprecedented power and capabilities, the SLS is the only rocket that can send the Orion spacecraft, astronauts, and large cargo to the Moon on a single mission. We will design, build, and test a foam rocket to understand the relationship between a rocket's stability and its trajectory. The lesson will encourage computational thinking as we use an altitude tracker to collect and analyze data from the flight of a rocket.

Susan Kohler, Education Specialist, NASA

3:30 p.m. Break – *Sponsored by BASF*

3:30-4:30 p.m. Frosty Break - *Presented by LyondellBasell*

Liquid Nitrogen Fun!

Amy Weiskittel

4:30 p.m. Ashland University Reflection

This session is offered to those interested in obtaining 1 semester hour of graduate credit through Ashland University. The fee for the credit is \$190.00. Participants will work with an Ashland University facilitator on a reflection of the sessions attended during the conference, and how to incorporate what was learned into their curriculum.

Linda Pettit, Ashland University

4:30 p.m. Evening on Your Own



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Friday, October 14, 2022

7:00 a.m.

Breakfast

7:15 a.m.

Opening Remarks (During Breakfast)

Jenn Klein, President, Ohio Chemistry Technology Council

7:45 a.m.

You Be The Chemist Essential Elements – Presented by Univar Solutions & the Chemical Educational Foundation (CEF)

Essential Elements is based on the 5E learning cycle approach to teaching. Through this cycle, teachers and students build their own understanding of new concepts from both prior and new experiences by engaging in hands-on activities. Teachers will be able to participate in Elephant Toothpaste, Dancing Raisins, Goofy Putty, and Floating Paper Clips. Participants will also have the opportunity to learn about CEF's programs to help encourage the next generation of scientists.

Dwayne Sattler, Executive Director, Chemical Educational Foundation (CEF)

Larry Sernyk, Essential Elements Certified Instructor, Chemical Educational Foundation (CEF)

9:30-9:40 a.m.

Break

9:40-10:30 a.m.

Concurrent Sessions

& 10:40-11:30 a.m.

Bouncy Balls: The Science of Polymers - Presented by LyondellBasell

Why do some balls bounce higher than others? Why do diapers absorb so much liquid, do all plastics repel water? The basic concepts of plastics (polymers) including the properties of plastics and their many uses will be discussed.

Amy Weiskittel, Jan Galbraith, LyondellBasell

Real Industrial Concepts as Student-Friendly Experiments - Presented by Solvay

Discover some of the processes that chemical companies must be knowledgeable about when they design and operate their plants. Participants will model the concepts by completing hands-on experiments that can easily be brought back to their classrooms. They will learn how these ideas are used in real world applications, and they will observe how severe the consequences can be when the hazards are not properly understood or mitigated.

Bonnie Bishop & Kelydra Welcker, Solvay

11:30 a.m.

NASA STEM: Climate Change and The Air We Breathe

Our planet is changing, and NASA is on it. NASA uses satellites, aircraft, and even an occasional boat to study our planet's air, land, and water. There is a lot more than air in the atmosphere. Pick up STEAM with hands-on inquiry-based learning activities related to the Atmosphere and Aerosols. Explore picture books and authentic real-time data sets and engineering design challenges in problem-based lessons. Investigate ways to engage students as they become sky observers and learn more about the atmosphere, aerosols, and dust.

Susan Kohler, Education Specialist, NASA

12:30 p.m.

Conference Closing Remarks

Jenn Klein, President, Ohio Chemistry Technology Council