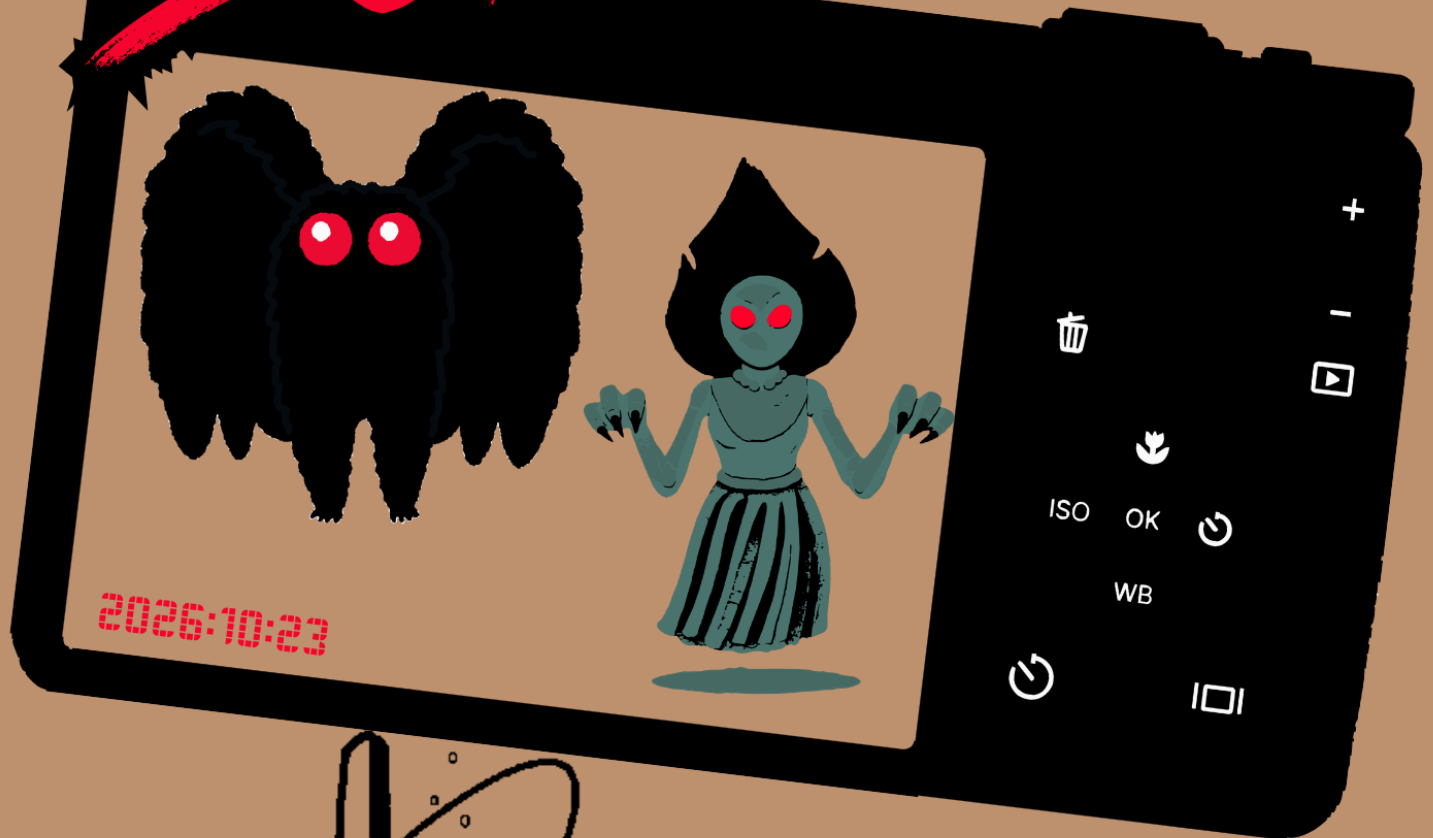


# SCIENCE



FLATWOODS, WV



# THE REAL MYTHBUSTER!



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*Dedicated to building research infrastructure and the promotion of science, technology, engineering, and math  
(STEM) education in West Virginia*

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WV High Technology Foundation  
West Virginia State University  
WVU Institute of Technology  
West Virginia Wesleyan College  
Wheeling University

**Thank you NASA WVSGC for supporting WVSTA, including the  
printing and binding of the conference program and  
host your own NASA Day programs.**

### **NASA WVSGC**

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## *President's Message*

### *Welcome to the 2026 WVSTA Conference!*

Dear WVSTA Members,

I am so excited to welcome you to the West Virginia Science Teachers Association annual Fall conference. It is an honor to gather with so many educators who make curiosity contagious and bring learning to life in classrooms across our state. Our theme, "Science: The Real Mythbuster," reminds us that science is more than a collection of facts. Real science is active. Real science welcomes questions, tests ideas, examines evidence, and never stagnates. Science will change our minds when the evidence leads us somewhere new. And, of course, we could not resist adding a few cryptids to the adventure. After all, if science can investigate the Mothman, it can certainly help us explain where all the missing dry-erase markers go.



Science education also faces significant challenges. Teachers navigate limited resources, increasing demands, misinformation, declining attention spans, and the occasional student who believes that "I saw this on TikTok" is a complete research citation. Yet, through all these challenges, I still firmly and passionately believe our science classrooms remain places of possibility. From Appalachian watersheds to space exploration, from biology labs to engineering challenges, and from kindergartners exploring their surroundings to university students reigniting their childhood curiosity, science has the power to ignite wonder, inspire discovery, and connect learners of every age to the world around them.

Our membership's dedication gives us our greatest strength. You keep science alive by inspiring students to look more closely. Whether you teach elementary, middle school, high school, or university budding scientists, or maybe you are an informal educator whose passion for science inspires others, your work makes a lasting impression on all.

In my mind, the work we do can be compared to trace fossils. Within each of our many students, those trace fossils are imprints of their time with you. So, allow me to leave you with this: "We all carry trace fossils within us – the marks that the dead and the missed leave behind. Handwriting on an envelope; the wear on a wooden step left by footfall; the memory of a familiar gesture by someone gone, repeated so often it has worn its own groove in both air and mind: these are trace fossils too." Robert Macfarlane, *Underland: A Deep Time Journey*

Thank you for everything you do for science education and for one another.

Yours in science education,

Angela McKeen

## *Conference at a Glance*

### **Thursday, October 22nd**

| <b>Time</b>      | <b>Room</b>     | <b>Event</b>          |
|------------------|-----------------|-----------------------|
| 3:30pm – 8:30pm  | Lobby           | Registration          |
| 6:00pm – 9:00pm  | Ballrooms B & C | Exhibits Open         |
| 6:00pm – 9:00pm  | Ballrooms B & C | Exhibitors' Reception |
| 6:00pm – 9:00pm  | Huntington      | Preconference Session |
| 8:00pm – 10:00pm | Ballroom A      | Auction ☺             |
| 10:00 pm         | Meet in Lobby   | Stargazing            |

### **Friday, October 23rd**

| <b>Time</b>       | <b>Room</b>     | <b>Event</b>                  |
|-------------------|-----------------|-------------------------------|
| 6:30am – 8:00am   | Woods & Waters  | Breakfast (hotel guests only) |
| 7:30am – 4:30pm   | Lobby           | Registration                  |
| 8:00am – 5:00pm   | Ballrooms B & C | Exhibits Open                 |
| 8:00am – 10:15am  |                 | Concurrent Sessions           |
| 9:30am- 10:00am   | Ballrooms B & C | Coffee                        |
| 10:30am – 12:00pm | Ballroom A      | Opening Session               |
| 12:00pm – 1:30pm  | Ballroom A      | Lunch                         |
| 12:00pm - 12:45pm | Ballroom A      | Forums                        |
| 1:30pm – 5:00pm   | Meet in Lobby   | Tours                         |
| 1:30pm – 5:00pm   |                 | Concurrent Sessions           |
| 2:30pm - 2:45pm   | Ballroom B & C  | Tea & Lemonade                |
| 6:30pm – 8:30pm   | Ballroom A      | Grand Banquet                 |
| 8:30pm – 10:30pm  | Ballroom A      | Dessert Reception             |

### **Saturday, October 24th**

| <b>Time</b>         | <b>Room</b>     | <b>Event</b>                                  |
|---------------------|-----------------|-----------------------------------------------|
| 6:30am – 8:30am     | Woods & Waters  | Breakfast (hotel guests only)                 |
| 8:00am – 10:00am    | Lobby           | Registration                                  |
| 8:00am – 12:00 noon | Meet in Lobby   | Tours                                         |
| 8:30am – 11:45 am   |                 | Concurrent Sessions                           |
| 8:30am – 11:45am    | Ballrooms B & C | Exhibits Open                                 |
| 12:00 noon – 1:30pm | Ballroom A      | President's Luncheon & WVSTA Business Meeting |
| 1:30pm – 2:30pm     | Lewisburg       | WVSTA Board Meeting                           |

**Welcome to Sutton, WV and Days Inn & Suites**

## *Keynote Speakers*

*Opening Session - Friday, October 23, 11:00am*



**Jan E. Janecka, Ph.D.**, is an Associate Professor of Biological Sciences at Duquesne University, a Research Associate at the Carnegie Museum of Natural History, and founder of Janecka & Associates, a consulting firm focused on wildlife genetics, genomics, and conservation. He is a wildlife geneticist whose research uses DNA, genomics, camera traps, and field ecology to answer questions about wildlife that can be surprisingly difficult to observe directly.

His work has taken him from studying bobcats in Vermont and ocelots in South Texas to investigating diverse mammal communities in Thailand and studying snow leopards and other wildlife in the Himalayas. Much of his current research focuses on applying genetics and genomics to wildlife conservation and management, including efforts to recover endangered ocelots in the United States, developing noninvasive approaches for studying wildlife from scat and other environmental samples, and investigating landscape connectivity and management in black bears.

Jan is also passionate about science education and creating opportunities for students and teachers to participate in authentic wildlife research and experience how scientific discovery actually happens. In 2025, he established the WILDs Community Partnership, which provides middle and high school students with opportunities to monitor and study wildlife in their own communities.

## *Keynote Speakers (cont.)*

***Grand Banquet - Friday, October 23, 6:30pm-8:30pm***



**Colin Carpenter, M.S.,** received his B.S. in Wildlife and Fisheries Science from The Pennsylvania State University. He received his M.S. in Wildlife and Fisheries Biology from Frostburg State University. Colin has been employed by the West Virginia Division of Natural Resources since 2002. He began his career as a Wildlife Manager on Blackwater WMA in Tucker County before moving to Beckley to become the Assistant District Game Biologist. In 2010 he assumed the role of Black Bear Project Leader. Colin serves on the wild turkey and deer committees for WVDNR helping to guide research and management of these species. He is past chair of the Northeast Black Bear Technical Committee, the Large Carnivore Working Group of the Southeast Association of Fish and Wildlife Agencies and has served 2 terms as the President of the West Virginia Chapter of The Wildlife Society. He is currently the Vice Chair of the recently formed West Virginia Prescribed Fire Council. In his free time, Colin enjoys hunting, fishing and camping with his family and friends.

## General Information

### Registration

The registration area will be located in the Lobby and will be open during the following times:

- **Thursday, October 22nd** \_\_\_\_\_ **3:30pm – 8:30pm**
- **Friday, October 23rd** \_\_\_\_\_ **7:30am – 4:30pm**
- **Saturday, October 24th** \_\_\_\_\_ **8:00am – 10:00am**

### Conference Meals and Breaks

All meals and breaks are included in your registration (provided you selected them during pre-registration) and are available at the following times (with your ticket):

#### Thursday, October 22nd

Exhibitors' Reception \_\_\_\_\_ 6:00pm– 9:00pm \_\_\_\_\_ Ballrooms B & C  
(Sponsored by All of Our Exhibitors)

#### Friday, October 23rd

- ☐ Breakfast \_\_\_\_\_ 6:30am– 8:00am \_\_\_\_\_ Woods & Waters
  - ☐ Coffee Break \_\_\_\_\_ 9:30am \_\_\_\_\_ Ballrooms B & C
- ☐ Lunch \_\_\_\_\_ 12:00pm– 1:15pm \_\_\_\_\_ Ballroom A
- ☐ Tea & Lemonade \_\_\_\_\_ 2:30pm– 2:45pm \_\_\_\_\_ Ballrooms B & C
- ☐ Grand Banquet \_\_\_\_\_ 6:30pm– 8:30pm \_\_\_\_\_ Ballroom A
- ☐ Dessert Reception \_\_\_\_\_ 8:30pm– 10:30pm \_\_\_\_\_ Ballroom A

#### Saturday, October 24th

- ☐ Breakfast \_\_\_\_\_ 6:30am– 8:00am \_\_\_\_\_ Woods & Waters
- ☐ President's Luncheon \_\_\_\_\_ 12:00pm– 1:30pm \_\_\_\_\_ Ballroom A

## General Information

### Exhibits

Stop by and visit the exciting booths, get free resources for your classroom, see the newest products, services, and opportunities for science educators located in **Ballrooms B & C**. The exhibit hall is open during the following times:

- **Thursday, October 22nd** \_\_\_\_\_ **6:00pm – 9:00pm**
- **Friday, October 23rd** \_\_\_\_\_ **8:00am – 5:00pm**
- **Saturday, October 24th** \_\_\_\_\_ **8:30am – 11:45am**

### WVSTA Meetings and Events

Remember, this is YOUR organization. Get involved and engaged by attending WVSTA formal and informal meetings held during the conference at the following times:

#### Friday, October 24th

- Opening Session \_\_\_\_\_ 10:30am–12:00pm \_\_\_\_\_ Ballroom A
- Forums \_\_\_\_\_ 12:00pm–12:45pm \_\_\_\_\_ See Forums Page  
Join like-minded people at a roundtable session and then go to lunch together.

#### Saturday, October 25th

- WVSTA Business Meeting \_\_\_\_\_ 12:00pm–1:30pm \_\_\_\_\_ Ballroom A
- Executive Board Meeting \_\_\_\_\_ 1:30pm–2:30pm \_\_\_\_\_ Lewisburg Rm



## Pre-Conference Workshop

Registration is required. Please see the registration desk if you are interested!

**Thursday, October 22, 6:00 p.m.- 9:00 p.m**



**Ellie White** is an NSF Graduate Research Fellow pursuing her PhD in Physics at West Virginia University. She recently earned her M.S. in Physics from Marshall University, where she taught introductory astronomy and physics. Her research experience includes work with the Green Bank Observatory, National Radio Astronomy Observatory, LSST, UC Berkeley SETI Research Center, and SETI Institute, where she received the 2021 SETI Forward Award. Ellie is passionate about astronomy and STEAM outreach and is a founding member of the nonprofit West Virginia Alliance for STEM and the Arts. In her free time, she enjoys family, friends, pets, the outdoors, baking, arts and crafts, reading, and too many rom coms.

**Deana White** is Executive Director of the West Virginia Alliance for STEM and the Arts. She holds a B.S. in Chemical Engineering from the University of Kentucky and has worked in the refinery and petrochemical industry in process design and environmental and safety compliance. She has also home educated her children, helped design a theme restaurant, and advocated for the Green Bank Observatory. Deana now focuses on education projects, including STEM and the Arts Film events, the web-based learning game STEAM Trek, and programs that inspire curiosity and engagement in STEM and the Arts. She enjoys learning, hearing others' stories, hiking, kayaking, games, family time, and too many rom coms with Ellie.



### ***Scope in the Box and Small Town Universe Screening***

Join us to learn how educators can apply for a Society of Amateur Radio Astronomers (SARA) grant to receive a free Scope in the Box—a radio telescope kit that you and your classroom can build to map the Milky Way! We'll demonstrate the kit and raffle one to a lucky attendee.

Stay afterward for a screening of the award-winning documentary *Small Town Universe*, followed by a Q&A with Ellie and Deana. The film shares stories of love, loss, resilience, scientific discovery, and the search for extraterrestrial intelligence in Green Bank, WV. Learn how to bring the film to your classroom and about efforts to sustain Green Bank Observatory as a premier global astronomy and education facility right here in our backyard.

## Special Events

### 29th Annual WVSTA Auction

**Thursday, October 22nd 8:00pm– 10:00pm**

**Ballroom A**

Surplus your extra supplies by donating them to a good cause . . . other teachers! Do you have stuff in your stock room that has not been touched in years? Just hate to throw it away because you know somebody somewhere can use it? Bring it and the rest of your surplus supplies to the WVSTA Auction! MONEY IS NO OBJECT (and it isn't real either)!!! WVSTA Bucks are provided with your Registration, and are awarded by Visiting Exhibitors, or Donating Equipment. Auctioneer **Jim Cozort** wants to remind you, "The more you bring, the more you can get!!!"



### Stargazing

**Thursday, October 22nd 9:30pm– 11:00pm**

**Meet in Lobby**

Engage in updates of the WVSTA Dark Skies initiative led by Robert Strong (SMART Center) and John Tudek (WVGES) while observing with telescopes. Get directions to the viewing site from a WVSTA Board Member or meet in the Lobby. Dress for the weather and enjoy the nighttime sky! This is a FREE event open to all.



### Photo Booth

➤ **Thursday October 22- Saturday October 24**

**Foyer**

Find the photo booth and take a science selfie, or a group photo with your favorite science friends! Post your photo, and any others you take at the conference, to social media along with #yeti2learn as a hashtag. Let's show WV and the world our amazing science teachers!

### Door Prize Winners Circle

☐ **Saturday, October 24th 12:00pm**

**Ballroom A**

Items donated by vendors are displayed at the registration booth throughout the conference. You receive several slips in your registration packet that can be used to "bid" on these items. Winners will be announced at the President's Luncheon and you **MUST** be present to win!

### Vendor Bingo Cards

☐ **Saturday, October 24th 12:00pm**

**Ballroom A**

Collect all stickers from all vendors by visiting them Friday- Saturday noon in the exhibit hall. You keep the contact information, bring your completed bingo sheet to the registration desk, we'll cut off the bottom and put your name in the drawing. The winner gets a free registration to next year's conference!!



## Conference Tours

*Pre-registration, prepaid tickets required for all field trips. Didn't pre-register? Check for availability at the registration desk. All tours meet in the Lobby. Please arrive 15 minutes before departure time.*

### Flatwoods Monster Museum

**Friday, October 23, 2026 9:00am-10:15am**

Located on Main Street in downtown Sutton, two miles from Exit 62 on I-79. Displays include: one of a kind collections and artifacts, historic items, memorabilia, books, and more! Novelty items include: shirts, figures, stickers, shot glasses, and lanterns.



### Dr. Bob Behling Memorial Geology Field Trip

**Friday, October 23, 2026 1:00pm-5:00pm**

*It's a great day for a field trip!* Spend the afternoon with geologists Dr. Elizabeth Rhenberg & John Tudek with the West Virginia Geological Survey, learning about the geology around Elk River Wildlife Management Area. Visit outcrops where you will have a hands-on opportunity to explore and understand the geology of West Virginia.

Please note: Guests are required to wear close-toed shoes, carry water, and bring rain gear.



### WV Wildlife Center

**Saturday, October 24, 2026 8:00am-12:00pm**

The Wildlife Center is a modern zoological facility displaying native and introduced state wildlife. Operated by the Wildlife Resources Section of the WV Division of Natural Resources, the WV Wildlife Center presents visitors with a realistic and factual understanding of WV wildlife. Woodland wildlife can be viewed along a wheelchair accessible trail traveling 1.25 miles through a mature hardwood forest. Spacious enclosures allow animals to interact with their environment and exhibit more natural behavior patterns.



## *WVSTA Leadership*

### West Virginia Science Teachers Association: 2026 Executive Board

**President** \_\_\_\_\_ Angela McKeen  
**President-Elect** \_\_\_\_\_ Megan Bennett  
**Immediate Past President** \_\_\_\_\_ Davita Melander  
**Membership Vice President** \_\_\_\_\_ Vincent O’Leary  
**Treasurer** \_\_\_\_\_ Josh Revels  
**Secretary** \_\_\_\_\_ Peggy Moore  
**Executive Director** \_\_\_\_\_ Deb Hemler  
**Electronic Services** \_\_\_\_\_ Todd Ensign  
**WVDE Liaison** \_\_\_\_\_ Rachel Eades  
**Webmaster/Social Media Director** \_\_\_\_\_ Angela McKeen  
**Elementary School Representative** \_\_\_\_\_ Tiffany Pace  
**Middle School Representative** \_\_\_\_\_ Alicen Adkins  
**High School Representative** \_\_\_\_\_ Dayna Juraschek

#### Past Presidents:

|                            |                            |                             |
|----------------------------|----------------------------|-----------------------------|
| 2023-2025 Davita Melander  | 2006-2008 “Jo” Hendricks   | 1992-1993 George Gruber     |
| 2020-2023 Josh Revels      | 2004-2006 “Page” Stevenson | 1991-1992 Patricia Obenauf  |
| 2018-2020 Erika Klose      | 2003-2004 Eric Pyle        | 1988-1990 Sylvia Cooper     |
| 2016-2018 Carolyn Thomas   | 2001-2003 Jody Cunningham  | 1987-1988 Robert Phipps     |
| 2014-2016 Elizabeth Strong | 1999-2001 Larry Oyster     | 1985-1987 Rayman Richardson |
| 2012-2014 Linda Fonner     | 1997-1999 Diane Furman     | 1984-1985 Larry Wilkinson   |
| 2009-2012 Deb Hemler       | 1995-1997 Joe Evans        |                             |
| 2008-2009 Ed Evans         | 1993-1995 Jerry DeLuca     |                             |

#### Conference Committee Members

**Conference Chair** \_\_\_\_\_ Deb Hemler and Josh Revels  
**Program Coordinators** \_\_\_\_\_ Josh Revels and Rachel Eades  
**Registration Coordinators** \_\_\_\_\_ Deb Hemler, Josh Revels, and Cody Barnes  
**Speaker Coordinators** \_\_\_\_\_ Megan Bennett and Vincent O’Leary  
**Exhibitor Coordinator** \_\_\_\_\_ Megan Bennett  
**Tour Coordinators** \_\_\_\_\_ Deb Hemler and Megan Bennett  
**Merchandise Coordinators** \_\_\_\_\_ Todd Ensign  
**Auction Coordinators** \_\_\_\_\_ Jim and Patty Cozort  
**Hospitality Coordinators** \_\_\_\_\_ Teresa Barton & Robin Sizemore  
**AV Coordinator** \_\_\_\_\_ John Holbrook & Todd Ensign  
**Additional Committee Members** \_\_\_\_\_ Peggy Moore & Alicen Adkins,

## *WVSTA Guiding Principles*

### **WVSTA Mission**

The mission of the WVSTA is to promote scientific growth through professional development and networking in the science community.

### **Purpose**

The purpose of the WVSTA is to encourage interest and active participation in science and science education at all levels, to provide a medium for the exchange of views regarding the teaching of science, and to promote the cooperative study of problems and challenges to the teaching of science.

### **Goals**

1. Facilitate and cooperate in providing for national, regional, state and local conferences on science education.
2. Prepare and distribute articles, reports, and classroom materials which are appropriate and helpful to teachers of science.
3. Disseminate information which promotes science and science education universally throughout the state at all levels, i.e. school, community, business and industry, and government.
4. Encourage investigations, experimentation and research in science, and science education.
5. Cooperate with the National Science Teachers Association in formulating plans and projects which advance the quality of science teaching and which promote a more widespread acceptance of science as a subject worthy of serious study from elementary school through college.



*Friday October 23rd, 8:00am-9:00am*

**Mothman Flight Lab: Straw Rocket Engineering**

**Ballroom A**

Stephenie Righini, *Pitsco, Pittsburgh, KS, srighini@pitsco.com*

Participants will put engineering design and physical science into action through a hands-on straw rocket challenge. Attendees will build and launch a rocket, collect flight data, modify one design variable, and test again to investigate how design choices affect performance. Along the way, participants will explore concepts including force and motion, aerodynamics, measurement, data analysis, and the engineering design process. Attendees will leave with a classroom-ready activity that encourages students to predict, test, analyze, and improve their designs while making science visible, measurable, and fun.

**Flipped-Mastery Learning**

**Ballroom D**

Rachel Eades, *WVDE, Charleston, WV, reades@k12.wv.us*

Experience a dynamic, hands-on session inspired by one of the trailblazers of flipped classrooms and mastery learning. Discover how this innovative approach boosts student learning and builds confidence in budding scientists through active, inquiry-based science exploration. Join us to see how science instruction can be reimaged and revitalized in a non-traditional classroom setting.

***Note: For the purpose of modeling this instructional method, this session has a brief task to complete before the session. Please access this form before you attend so that you may experience the hands-on activity. <https://forms.office.com/r/D6nPcjRZE6>***

**Life at the Edge: Exploring Hydrothermal Vents Through Biology, Physics, and Earth Science**

**Ballroom E**

Teresa Barton, *PikeView High, Princeton, WV, tbarton@k12.wv.us*

Ashley Williams, *James Monroe High, Linside, WV, alwilliams@k12.wv.us*

Peggy Moore, *PikeView High, Princeton, WV, psmoore@k12.wv.us*

Discover how the ocean's darkest depths can illuminate your middle or high school science curriculum. This interdisciplinary session bridges the gap between Earth Science, Physics, and Biology by examining the extreme world of deep-sea hydrothermal vents. Teachers will explore tectonic geology, the thermodynamics of superheated underwater geysers, and the fascinating world of chemosynthetic extremophiles that thrive entirely without sunlight. The hands-on activity will model a desktop hydrothermal vent using thermal plumes and salt water densities. You will leave with a complete lesson blueprint to ignite curiosity in your next NGSS-aligned physics, earth science, or biology unit.



## *Friday October 23rd, 8:00am-9:00am (continued)*

### **From Biomes to Board Games: Science by Design**

**Beckley**

Tracey Lea, *Stem Pioneer, Morgantown, WV*, [tracey.lea@k12.wv.us](mailto:tracey.lea@k12.wv.us)

Margie Suder, *East Fairmont Middle School, Fairmont, WV*, [msuder@k12.wv.us](mailto:msuder@k12.wv.us)

Dr. Melanie Rohaley, [melanie.rohaley@k12.wv.us](mailto:melanie.rohaley@k12.wv.us)

What happens when students move beyond learning about biomes and use their science knowledge to create something others can play? This hands-on session shares a cross-grade project in which elementary students researched biomes and habitats, communicated their learning through informational writing, and applied their knowledge to design and create original board games. Along the way, students incorporated engineering design, 3D-printed pieces, 3D pens, circuits, and other technologies as they developed and revised their games. Participants will experience a condensed version of the design process and explore how science content can drive game design rather than simply decorate it. Student examples, project resources, successes, and challenges will be shared. Participants will leave with a flexible framework for integrating science, literacy, engineering, technology, collaboration, and student choice into a project that can be adapted to different classrooms and available resources.

### **WVPEC/WVU STEAM TAC: Rangers on the Rails**

**Braxton**

Erica Skorlinski, *WVPEC/WVU STEAM TAC, Morgantown, WV*, [erica.skorlinski@mail.wvu.edu](mailto:erica.skorlinski@mail.wvu.edu)

Angela McDaniel, *WVPEC/WVU STEAM TAC, Morgantown, WV*, [amcdaniel@mail.wvu.edu](mailto:amcdaniel@mail.wvu.edu)

In this place-based STEAM immersion, students explore the unique ecosystems of New River Gorge National Park while considering how technology can support sustainable ecotourism. Student teams research mini-biomes within the park, examining native species, ecosystem services, and human impacts before highlighting their location as an ecotourism destination. Using Intelino J-1 Smart Trains, students then apply computer science and engineering skills to design and code a model New River Gorge Personal Rapid Transit (NRG-PRT) system that connects visitors to these environmentally significant locations. Through block coding and programmable track components, students control train speed, direction, lights, sounds, and stops while considering how transportation solutions can increase access to the park while minimizing environmental impact. The immersion integrates environmental science, biology, computer science, engineering design, and career awareness through an authentic West Virginia context.

### **Power Up! Engineering, Circuits, and Cryptid Creations**

**Charleston (114/116)**

Tiffany Pace, *Cross Lanes Elementary, Charleston, WV*, [tiffpace@hotmail.com](mailto:tiffpace@hotmail.com)

STEM Pioneers:

Mystee Branble-Ansari, [mansari@stempioneers.com](mailto:mansari@stempioneers.com)

F. Nikki Harper, [fharper.stempioneers@gmail.com](mailto:fharper.stempioneers@gmail.com)

Cynthia Brown, [cbrown.stempioneers@gmail.com](mailto:cbrown.stempioneers@gmail.com)

Power up your elementary classroom with engineering, creativity, and innovation! In this engaging, hands-on session, participants will design and construct a unique cryptid habitat using 3DuxDesign materials and Chomp Saws while incorporating simple circuits. Beyond the build, you'll receive ready-to-use, cross-curricular lessons that integrate engineering, problem-solving, and creativity into every content area, empowering students to become confident designers, makers, and innovators.

## *Friday October 23rd, 8:00am-9:00am (continued)*

### **Designing for Discovery**

**Charleston (118/120)**

Zack Merritt, *Clay Center for the Arts and Sciences, Charleston, WV*, [zmerritt@theclaycenter.org](mailto:zmerritt@theclaycenter.org)

One of the challenges we face is finding meaningful ways for students to learn through play, discovery, and wonder. We know that play gives students room to experiment, make choices, test ideas, and learn from what happens, so why can it sometimes be difficult to create those experiences? Come explore a new engineering lab being rolled out at the Clay Center, where students design, build, test, and redesign their own robots. Participants will try the challenge themselves and explore how open-ended problems and intentional questions can help students build problem-solving skills, persistence, creativity, and scientific and engineering thinking. Educators will leave with practical strategies for designing their own hands-on learning experiences, along with resources and opportunities to connect with the Clay Center for future learning experiences.

### **Making Sense of Science: Using Gizmos to Explore**

**Huntington**

#### **Real-World Phenomena**

Dustin Lackey, *ExploreK12 (ExploreLearning), Mechanicsville, VA*,  
[dustin.lackey@explorek12.com](mailto:dustin.lackey@explorek12.com)

Discover how Gizmos interactive simulations can help West Virginia science educators create engaging, standards-aligned learning experiences that deepen student understanding and drive achievement. In this hands-on session, participants will explore ways to integrate Gizmos into daily instruction to support inquiry, student sensemaking, and the scientific and engineering practices emphasized in the West Virginia College- and Career-Readiness Standards for Science.

## *Friday October 23rd, 9:15am-10:15am*

### **Launch Your STEM Club: Starting an American Rocketry Challenge Team** **Ballroom A**

Todd Ensign, *Fairmont State University, Fairmont, WV*, [tensign@fairmontstate.edu](mailto:tensign@fairmontstate.edu)

The American Rocketry Challenge is the world's largest student rocket competition, and has engaged over 110,000 middle and high school students in rocketry. The challenge provides a yearlong opportunity to gain hands-on engineering experience by designing, building, testing, and launching model rockets to meet rigorous requirements. The program fosters leadership, teamwork, and problem-solving skills as students deepen their interest and passion for aerospace and STEM. This session will introduce you to the program and how to start your own team and is led by NAR mentor and President of the WV Rocketry Association, Dr. Todd from Fairmont State's SciTech ERC.



*Friday October 23rd, 9:15am-10:15am (continued)*

**Unlocking STEAM: Cultivating Mindsets and Skillsets for Authentic Integration**

**Ballroom D**

Rachel Eades, *WVDE, Charleston, WV, reades@k12.wv.us*

Dive into the dynamic world of STEAM education as we explore the essential mindsets and skillsets that empower innovative teaching. In this interactive session, you'll engage in a collaborative brainstorming experience designed to inspire genuine, practical strategies for weaving STEAM principles seamlessly into your instruction. Come ready to spark creativity, connect with peers, and transform your approach to STEAM learning!

**Prints and Probability**

**Ballroom E**

**Mark Flood**, *Fairmont State University, Fairmont, WV, mflood@fairmontstate.edu*

Participants will learn about the role of probability in the determination of the uniqueness of fingerprint patterns and of fingerprint minutiae. Be prepared to get messy while rolling your own set of inked fingerprints and then identifying which pattern each fingerprint exhibits. You will also identify as many different minutiae as you can on a single fingerprint and calculate the probability that your fingerprint could be duplicated by chance. Bring your phones to take pictures and use your calculators!!

**The Bear's Bathroom Mystery: Following the Evidence from Scat to Seed Dispersal**

**Beckley**

Carolyn Honsaker, *Blackshere Elementary, Fairview, WV, carie.lynn28@gmail.com*

What can bear scat reveal about the plants growing in a West Virginia forest? Step into a hands-on science mystery where children's literature, text sets, and inquiry-based learning come together to investigate seed dispersal and plant growth. In this interactive session, educators will analyze model bear scat to uncover evidence of what a bear has eaten and use that evidence to develop explanations about how animals help disperse seeds. Through questioning, observation, evidence collection, and scientific reasoning, participants will experience a classroom-ready investigation that connects science to students' local environment. The investigation is part of a larger seed dispersal and pollinator unit integrating West Virginia social studies standards through state symbols, including the black bear, honey bee, monarch butterfly, state tree, and state fruit. Children's literature and informational text sets build background knowledge, vocabulary, and comprehension. Participants will leave with practical strategies for using literature-rich, hands-on inquiry to make elementary science meaningful, engaging, and accessible.



## *Friday October 23rd, 9:15am-10:15am (continued)*

### **Bright Ideas: Exploring Solar Energy Through Hands-On Learning**

**Braxton**

Samantha Couch, *WVPEC/WVU STEAMTAC, Morgantown, WV, sct0004@mail.wvu.edu*

Melissa Bane, *WVPEC/WVU STEAMTAC, Morgantown, WV, mmaher2@mail.wvu.edu*

Sponsored by Berkshire Hathaway Energy Renewables, Bright Ideas introduces students to solar power and its role in modern energy systems. Using Snap Circuits, students explore how solar panels capture energy and how that energy can be stored in batteries for later use, mirroring real-world solar farms and energy grids. Students investigate fundamental electrical concepts, including voltage, current, and resistance, while gaining hands-on experience with how solar energy is converted into usable electricity. The immersion connects science and engineering concepts to renewable energy technologies and career pathways. Additionally, discover how STEAM TAC and the West Virginia K-12 Speakers Bureau strengthen career-connected learning by pairing engaging STEM experiences with authentic interactions with industry professionals. These connections help students see how classroom concepts apply to real-world careers and inspire them to explore future opportunities in West Virginia.

### **Cyber Surgeons: Bringing Healthcare Careers to Life**

**Charleston (114/116)**

Jackie Shia, *Challenger Learning Center, Wheeling, WV, jshia@wheeling.edu*

Students become a rapid response trauma team aboard a Mercy ship traveling up the Amazon. The emergency specialists in your classroom will use a state-of-the-art, high-tech medical interface to triage a wide range of patient ailments. The goal during this scenario is to accurately diagnose patients, order needed tests, interpret test results and assign appropriate treatment as well as assign suitable NIH clinical trials to as many patients as possible during a shift. This intense simulation provides an engaged and immersive learning environment that challenges your students' critical thinking and problem-solving skills. Your students will work collaboratively with a Chief Medical Officer at the Challenger Learning Center in hopes of saving the lives of the native population and Medical Research personnel in the rainforests of Brazil.

### **Quick and Easy Labs to Practice Graphing**

**Charleston (118/120)**

Vincent OLeary, *Wheeling Middle School, Wheeling, WV, vincent.oleary@k12.wv.us*

This session will be a graph generating palooza! Get your students ready to actually use graphs to understand their data, instead of something to fill out on the lab report. I will demonstrate a dozen low cost "labs" that get students making measurements and recording high quality data that is easy to graph. Quickly collect real data in a single class period, with examples for linear, inverse, and exponential datasets. In addition to collecting data, get advice on how to turn that data into better graphs, whether graphing by hand or using digital tools and leave with a student checklist for making graphs. We will focus on using how water alone can be used to teach lab safety, accurate measurements, thermal energy, states of matter, and graphing with a few simple labs, but I will share dozens of other non-water example activities for collecting data. These ideas scale well to introduce middle school students to the concept of graphing or to give high school students more practice making their graphs better. Leave ready to get your students making better graphs and understanding why we use graphs in science

## *Friday October 23rd, 9:15am-10:15am (continued)*

### **Powering Up Elementary Classrooms with Energy Science**

**Huntington**

Caryn Turrel, *The NEED Project Manassas, VA, info@need.org*

Bring energy to life in your elementary classroom! Explore energy forms and transformations through fun, hands-on activities that seamlessly integrate science with reading, writing, and vocabulary. Experience engaging lessons from a student's perspective while discovering strategies that make energy concepts easy to understand and exciting to teach. Participants will leave with classroom-ready activities, real-world connections, and free curriculum and resources they can use right away to help students identify, describe, and explain energy transformations.

## *Opening Session*

**Friday, October 23rd, 10:30am –12:00pm  
Ballroom A**

**Opening** \_\_\_\_\_ **Angela McKeen**  
*WVSTA President*

**Welcome** \_\_\_\_\_ **Dr. Deb Hemler**  
*WVSTA Executive Director*

### **Invited Announcements**

State of Science Education in West Virginia \_\_\_\_\_ **Erika Klose**  
*Academic Support Director*

**Rachel Eades**  
**Keisha Thompson**  
*State Science Coordinators*

**Keynote Speaker** \_\_\_\_\_ **Dr. Jan Janecka**  
*Duquesne University*

**Conference Announcements** \_\_\_\_\_ **Josh Revels**  
*WVSTA Conference Chair*

## *Friday, October 23rd, 12:00pm-12:45pm Forums!*

Just after the opening session and before your lunch at Hickory, join a conversation with like-minded folks. We have many forums to choose from, and if you would like to suggest another, let us know and we'll add it next year! We'll announce the forums and direct you to the right convener and table in the Ballroom to begin your discussion. Afterwards, you can move as a group to lunch if you would like to continue your conversation!

WV Dark Skies  
2027 Conference Planning  
Elementary Science  
WV Science & Engineering Fair  
Physics Professional Development

Robert Strong  
Megan Bennett  
Tiffany Pace  
Rachel Eades  
April Townsend



*Friday, October 23rd, 1:30pm-1:55*

**Differentiated Discovery: Science Through Reading and Writing**

**Ballroom A**

Heather Puglisi, *Warwood Elementary School, Wheeling, WV*, [heather.puglisi@k12.wv.us](mailto:heather.puglisi@k12.wv.us)  
Christa Miller

This session discusses ways to incorporate science through reading and writing instruction in the elementary classroom. We will focus on ways to use tools such as Magic School AI, SeeSaw, and Book Creator to differentiate instruction for all levels of learners. Instruction can be used for whole group, small groups, or early finishers. This session could easily be adapted for all elementary grade levels.

**Beyond WVU Classrooms: Building a Biomedical Science Outreach Program Without a Roadmap**

**Ballroom D**

Roberta Leonardi, *West Virginia University, Morgantown, WV*, [roleonardi@hsc.wvu.edu](mailto:roleonardi@hsc.wvu.edu)  
Sarah Starcovic, *West Virginia University, Morgantown, WV*, [ss0241@mix.wvu.edu](mailto:ss0241@mix.wvu.edu)  
Caitlin Cather, *West Virginia University, Morgantown, WV*, [ccather1@hsc.wvu.edu](mailto:ccather1@hsc.wvu.edu)

In 2024, the WVU Department of Biochemistry and Molecular Medicine began developing a community outreach program with little experience—and no roadmap. Since then, our efforts have grown to include public library programs for children and adults, interactive activities in local high schools, and a week-long residential summer camp for high school students. In this session, we will share what we have tried, what has worked, what has not, and where we would like to take the program next. We hope to build partnerships that will allow us to reach students beyond Monongalia County, and we welcome ideas and suggestions from educators on how we can improve and expand our efforts.

**Data Literacy for Every Classroom**

**Ballroom E**

Matt Kelly, *WVDE, Charleston, WV*, [mmkelly@k12.wv.us](mailto:mmkelly@k12.wv.us)

Data is everywhere and helping students make sense of it is no longer the responsibility of mathematics and science educators alone. Join West Virginia Department of Education Social Studies Coordinator Matt Kelly as he shares insights from the inaugural Mountains of Evidence cohort, a statewide pilot cohort designed to integrate data literacy into social studies instruction. Educators from across West Virginia explored strategies for analyzing, interpreting, and communicating with data while applying those skills to authentic civic issues and decision-making. Participants will examine how data literacy supports inquiry, critical thinking, and evidence-based reasoning across disciplines, empowering students to navigate an increasingly data-rich world. Through interactive activities and classroom-ready examples, attendees will experience practical approaches for helping students evaluate data, identify patterns, consider multiple perspectives, and take informed civic action. Whatever you teach, this session will provide immediately applicable strategies for strengthening data literacy and student engagement.

## *Friday, October 23rd, 1:30pm-1:55 (Continued)*

### **NASA Data Science for High Schools in West Virginia**

**Beckley**

Christopher Fowler, *West Virginia University, Morgantown, WV*, [christopher.fowler@mail.wvu.edu](mailto:christopher.fowler@mail.wvu.edu)  
Catherine Regan, *West Virginia University, Morgantown, WV*, [catherine.regan@mail.wvu.edu](mailto:catherine.regan@mail.wvu.edu)  
Anna Turner, *West Virginia University, Morgantown, WV*, [akt0001@mix.wvu.edu](mailto:akt0001@mix.wvu.edu)

Dr. Christopher Fowler is a research scientist within the Department of Physics and Astronomy at WVU. As part of a NASA grant he and his group are developing a “sand-box” style data science project aimed at engaging high school students in WV in data- and computer science. A key focus of the project has students interact with, analyze and interpret “real-world” observations made by the NASA Advanced Composition Explorer (ACE) spacecraft at Earth. Students choose to tackle one of several provided science topics, utilizing coding skills to reduce, analyze and interpret the observations. The topics collectively fall under the theme of “space weather at Earth”, providing students with a relevant and topical backdrop within which they are learning. This presentation will provide an overview of the project, lesson plans, and research topics students can address. We will be seeking volunteers for first test-runs in the near future.

### **Elevating Labs from Side Dish to Main Course in Introductory**

**Charleston (114/116)**

#### **Biology**

Bruce Edinger, *The Linsly School, Wheeling, WV* [bedinger@linsly.org](mailto:bedinger@linsly.org)

My course content is now 50% lab. How did I get here? After decades in education, and as a part of a six-year experiment, I revamped my teaching to add more lab exercises and expand existing labs to tightly interweave concepts once taught as stand-alone lectures, practice sheets, or video notes. My students continue to rate labs as the best way engage and instruct them; and it's the labs they continue to talk about weeks or years later. Flexibility is important when designing each lab while inquiry remains the centering component. My labs now incorporate relevant case studies, quantitative skills practice, close reading practice and assessment, and careful explanatory writing. I discuss the anatomy of labs on scientific method, human survivorship curves calculated from obituary data, trophic pyramid analysis from a living rotting log community, and designing and modeling ectothermic lizard bodies and behavior to be fast warmers.

### **Get Students Making Better Observations**

**Charleston (118/120)**

Vincent OLeary, *Wheeling Middle School, Wheeling, WV*, [vincent.oleary@k12.wv.us](mailto:vincent.oleary@k12.wv.us)

I will demonstrate multiple back to school activities I use to get students making observations early. With just a glass of water, learn how students can make observations, generate a hypothesis, and even think through experimental setups to support or reject their hypothesis. I have taught these activities in classes for 6th grade through 12th grade with great engagement. These lessons are adapted from the Investigative Science Learning Environment (ISLE) approach, "an intentional, holistic learning environment which addresses two main goals: to help students learn physics by engaging them in processes that mirror scientific practice, and to improve their well-being while they are learning physics." Come learn how to get your students acting like scientists and making better observations after just one fun lesson.

*Friday, October 23rd, 1:30pm-1:55 (Continued)*

**Immunology and Medical Microbiology: Preparing Future Scientists and Healthcare Leaders!** **Huntington**

Kelly Collins, *West Virginia University, Morgantown, WV, kelly.collins3@hsc.wvu.edu*

Callie Ancosky, *West Virginia University, Morgantown, WV*

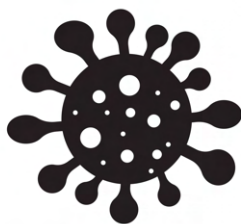
The Bachelor of Science in Immunology and Medical Microbiology (IMMB) at WVU offers students a unique opportunity to study the relationship between the immune system, microorganisms, and human health within a School of Medicine. The program examines immune function in health and disease, with emphasis on microbial interactions and immune-related conditions such as cancer and cardiovascular disease—health challenges particularly relevant to West Virginia. The IMMB curriculum connects foundational biology and biomedical research to clinical outcomes. Through coursework, clinical shadowing, and hands-on research, students explore how laboratory discoveries translate into disease prevention, diagnosis, and treatment. Research opportunities include vaccine development, cancer immunology, and infections during early life. This presentation will highlight the interdisciplinary nature of the IMMB major, career pathways in medicine and biomedical research, and opportunities available to students. Current IMMB students will share their experiences and perspectives on how the program is preparing them for their career goals.

*Friday, October 23rd, 1:30pm-2:30pm*

**Engage Young Engineers in Documenting Their Ideas and Discoveries with Science Notebooks** **Braxton**

Marcie Raol, *Fairmont State University, Fairmont, WV, mrice4@fairmontstate.edu*

How can young learners think and work like engineers while building their science and literacy skills? In this hands-on session, teachers will take on an engineering challenge and experience how a scientific notebook can support each step of the design process. Participants will use sketches, labels, measurements, and reflections to define a problem, plan a solution, record test results, and explain improvements. We will discuss ways to adapt notebook entries for emerging writers so every student can document ideas and use evidence to make decisions. Teachers will leave with a practical challenge and notebook prompts they can use in their classrooms.



*Friday, October 23rd, 2:05pm-2:30pm*

**West Virginia Bridge Design Build**

**Ballroom A**

Emily Edwards, *WVU Tech/ WVBDB, Kimberly, WV, ee00023@mix.wvu.edu*

Ashleigh James, *WVU Tech/ WVBDB, Beckley, WV, amj00029@mix.wvu.edu*

The West Virginia Bridge Design Build Program is a competition for students in both middle and high school. These students get to compete in teams of 2-3 students using the provided software to design the most efficient bridge. This program is realistic and includes cost of materials, stability, and many other factors that can teach them real critical thinking. This competition opens October 30th and continues until March. The top 30 teams get to come to WVU Tech and compete to win. If a team places top 30, they must construct a balsa wood bridge that they will bring to WVU Tech and place under heavy loads. They will also rebuild a bridge in a limited time using the software. Through the program, a teacher can request a classroom visit in which someone will come demonstrate the software and answer any questions.

**Safety in the Science Classroom**

**Ballroom D**

Rachel Eades, *WVDE, Charleston, WV, reades@k12.wv.us*

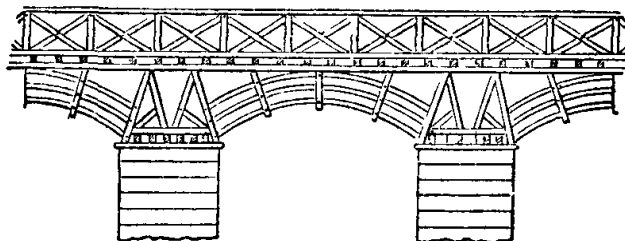
Science classroom lab safety is a vital teacher responsibility. This session presents an overview of policies and resources for implementing a safe learning environment for budding science scholars. Topics include negligence and its consequences, best practices for safety procedures, and lesson planning through the lens of safety-risk assessment.

**The Complete Computer Science Journey: AI, Coding, Cybersecurity, and Credentials**

**Ballroom E**

Jennifer Brown, *Prodigy Learning, Tampa, FL, jennifer.brown@prodigylearning.com*

Explore how Prodigy Learning's Computer Science Course combines AI Ready Skills, Coding in Minecraft, and Cyber in Minecraft to deliver engaging, standards-aligned computer science instruction. In this session, attendees will discover how students progress from digital citizenship and artificial intelligence to block-based and text-based programming in Python or JavaScript while developing essential computer science skills. Learn how the course supports multiple implementation models, including teacher-led and student-led instruction, and how industry-recognized credentials and a capstone exam help validate student achievement. Whether you are looking to expand existing computer science offerings or launch a new pathway, this session will provide practical insights and resources to help you get started with confidence.



*Friday, October 23rd, 2:05pm-2:30pm (continued)*

**Empowering Educators, Connecting Careers: WVCC Initiatives in Action**

**Beckley**

Ethan Backus, *Glenville State University, Glenville, WV, ethan.backus@glenville.edu*

This session aims to highlight the work of the West Virginia Career Collaborative (WVCC) over the past two years, its current initiatives, and its plans for the coming year to promote work-based learning in classrooms throughout north-central West Virginia. The WVCC focuses on bridging the gap between industry and education by promoting work-based learning opportunities at all grade levels. Studies show that students who participate in work-based learning opportunities demonstrate greater academic success, stronger durable skills, and greater career awareness than their peers who do not have these opportunities. This session will highlight several initiatives and opportunities for teachers to engage in work-based learning, including curriculum mini-grants, opportunities to serve as high school work-based learning coordinators, Project Lead the Way (PLTW) training scholarships, and educator field trips.

**Visualizing Earth Through Time**

**Charleston (114/116)**

Nikki Moriarty, *George Washington High School, Charleston, WV, dmoriarty@mail.kana.k12.wv.us*

Ever wondered what Earth was like throughout its history? Tired of seeing the same old, linear timelines? Join me to see an exciting new spin on Earth's geologic history. See how students will entice visitors to travel through time with Moriarty's Time-share vacations (emphasis on time). Additionally, check out some creative, non-straight line representations of Earth's history. But wait! There's more! Your gift for coming to my presentation - your own set of instructions to recreate this in your classroom!

**Practice Student Communication with LEGOs**

**Charleston (118/120)**

Vincent OLeary, *Wheeling Middle School, Wheeling, WV, vincent.oleary@k12.wv.us*

Leave the peanut butter and jelly sandwiches at home this year and teach the importance of clear directions and communication with LEGOs instead. With this lesson, students use just 7 LEGO pieces to construct a shape, then write directions on how to build their object. They learn about different ways to communicate in engineering using text, color, pictures, and diagrams. Then students must create directions that are clear enough for a peer to use successfully. The fun begins when they swap LEGOs and instructions with a neighbor and begin trying to build without any other help. I have used this lesson with students from 6th grade through 12th grade with great engagement. Learn about communication, build problem solving skills, and practice the engineering design process with this simple, low cost activity. Leave this session with examples of student work and a guide for implementing this activity in your own classroom.



## *Friday, October 23rd, 2:05pm-2:30pm (continued)*

### **Hot Water, Air, and Sunlight Drive Photosynthesis**

**Huntington**

Emma Casto, *Glenville State University, Glenville, WV, casto.emmae@gsu.glenville.edu*

Ashley Kookan, *Glenville State University, Glenville, WV, ashley.kookan@glenville.edu*

This presentation will explore ways to plan and design science instruction that will emphasize students' thinking about the movement of matter and energy through photosynthesis. Participants will be able to examine data from student thinking interviews conducted with two 5th-7th grade students. During the presentation, we will discuss how the productive elements of students' thinking can be leveraged throughout the 5-E Learning Cycle Unit to support students' meaningful science learning. Attendees will also have an opportunity to consider how they might assess students' learning of this life science disciplinary core idea. Participants will leave with a thoughtful conception of the 5-E model of science instruction and the benefits it has on science teaching and learning.

## *Friday, October 23rd, 2:45 - 3:45pm*

### **Teaching Science by Paradox**

**Ballroom A**

Robert E. Strong, *SMART-Center, Wheeling, WV, robert@smartcenter.org*

Teaching science should be the easiest subject to teach. We know that within every student is this innate desire to know and understand the Universe and all the wonders it entails. So why does it seem so hard to teach science sometimes? It is a Paradox - a situation that should be one way but is in reality quite another. Join Robert E. Strong from Wheeling's SMART-Center as he flips the paradoxical "tables" on students by Teaching Science by Paradox. Classroom science teachers often need an introductory "edge" to a new topic, something that engages every student's need to understand, to solve a mysterious problem, a seemingly unsolvable problem, that does not seem quite right, that seems "paradoxical". Robert will introduce you to some of his favorite historical science paradoxes ready made for the elementary, middle, high school, and college level students first thing Monday morning. Activities & hand-outs.

### **Specially Designed Instruction (SDI) for Science Teachers**

**Ballroom D**

Whitney White, *WVDE, Charleston, WV, whitney.white@k12.wv.us*

Rachel Eades, *WVDE, Charleston, WV, reades@k12.wv.us*

What exactly is Specially Designed Instruction (SDI), and what does it look like in a science classroom? Many educators hear the term SDI but struggle to distinguish it from accommodations, interventions, differentiation, or simply good teaching practices. This session will provide a practical introduction to the foundations of SDI, including the federal definition, the purpose of SDI, and how it supports students with disabilities in accessing grade-level science standards. Participants will explore the differences between accommodations and SDI, learn how SDI is connected to a student's unique disability-related needs, and examine examples of how instruction can be adapted through content, methodology, and delivery. Science teachers will leave with a clearer understanding of their role in implementing SDI and practical ideas for supporting meaningful access, participation, and achievement in science classrooms.

**High Schoolers' STEM Impact on Younger Students**

**Ballroom E**

Chuck Trautwein, *Garrett County Public Schools, Oakland, MD*,  
[chuck.trautwein@garrettcountyschools.org](mailto:chuck.trautwein@garrettcountyschools.org)  
Eden Rankin, *Northern Garrett High School*

Whether it's VEX, SkillsUSA or FIRST, these youth robotics teams instill a passion for STEM in students who compete in these programs. Garrett County Public Schools (Maryland) harnesses this passion to ensure elementary students gain the foundational skills they need for their success in STEM such as spatial reasoning, proportionality, and those found in computational thinking. Every year, our high school robotics students teach highly engaging and impactful lessons to every student, grades 1 through 5. At our session, our students will share these high energy lessons which include a LEGO Top Spinner, a set of five cards that help teach the rudiments of binary numbers and circuits, AND, a set of LEGO calipers that exactly determine the Golden Ratio. This program is a huge "Win-Win" success and our students are excited to share about their experience and the difference they have made... and there will be lots of "give-a-ways!"

**Vera C. Rubin Observatory**

**Beckley**

Zach Willhoite, *Tyler Consolidated High School, Sistersville, WV*, [zachary.willhoite@k12.wv.us](mailto:zachary.willhoite@k12.wv.us)

This session will introduce teachers to the Vera C. Rubin Observatory and several of the classroom activities available through its website. I will give a short overview of the observatory, including what it is designed to study, why it will change astronomy forever, and facts about the observatory itself. I will then model one of the activities, showing how the activity works and how it can be used with students. We will also discuss ways to adapt the activities for different grade levels and science courses. Participants will leave with a better understanding of the Rubin Observatory and ready-to-use activities that can bring real astronomical data and discoveries into their classrooms. Please bring a laptop/tablet!

**It's... Mole Day! (Oct.23)**

**Braxton**

Josh Revels, *Fairmont State University, Fairmont, WV*, [jrevels@fairmontstate.edu](mailto:jrevels@fairmontstate.edu)

Mole Day (6:02 on 10-23) is every chemist's favorite annual holiday! Come celebrate and learn how to teach your students to make mole sculptures made of aluminum foil! In this session, you will learn how and why scientists measure substances using "the mole". Although the mole concept is a high school performance expectation, activities in this session can be modified to emphasize science process skills taught in elementary and middle school. Prize for best sculpture!



**From Wonder to Understanding: Building Knowledge  
Through Science Text Sets**

**Charleston (114/116)**

Rachel Kellar, *Marion County Schools, Fairmont, WV*, [rkellar@k12.wv.us](mailto:rkellar@k12.wv.us)

Debbie Wilson, *Marion County Schools, Fairmont, WV*, [dwilson@k12.wv.us](mailto:dwilson@k12.wv.us)

Young children are naturally curious about the world around them. In this interactive session, elementary educators will explore how science text sets can transform instruction by combining engaging literature, informational texts, multimedia, and hands-on investigations to build scientific understanding and literacy. Participants will experience a model text set, discover how to align it with the 5E Instructional Model and West Virginia Science Standards, and learn practical strategies for designing their own. Grounded in the Science of Reading and knowledge-building research, this session demonstrates how connected texts deepen vocabulary, strengthen comprehension, and support scientific sensemaking. Attendees will leave with planning tools, text selection strategies, and classroom ideas for integrating reading, writing, discussion, and inquiry to spark curiosity and help students become confident readers and young scientists.

**AI Literacy for All: Student-Led Learning with AI Ready Skills**

**Charleston (118/120)**

Jennifer Brown, *Prodigy Learning, Tampa, FL*, [jennifer.brown@prodigylearning.com](mailto:jennifer.brown@prodigylearning.com)

In today's world, it is essential for students to understand Artificial Intelligence (AI). AI Ready Skills provides a comprehensive, student-led curriculum and credentialing pathway that educates students on AI through engaging and interactive methods. This session will demonstrate how integrating captivating student activities with the immersive environment of Minecraft Education empowers educators to enhance their students' AI knowledge, regardless of their own expertise in the field. Additionally, AI Ready Skills emphasizes the importance of teaching students to use AI responsibly, ensuring they understand ethical considerations and safe practices in their AI interactions. And it is available to all WV public schools at no cost!

**Mission to Mars: Bringing West Virginia's Involvement with NASA's**

**Huntington**

**Artemis Missions into Your Classroom**

Sophie de Saint Georges, *Green Bank Observatory, Green Bank, WV*, [sdesaint@nrao.edu](mailto:sdesaint@nrao.edu)

Ray King, *Green Bank Observatory, Green Bank, WV*

From Green Bank Observatory's involvement in the Mars 2020: Perseverance Rover mission to using the Green Bank Telescope to track 4 astronauts' journey around the moon, West Virginia has a rich and proud history with NASA's missions to Mars. GBO has curated activities for educators to celebrate West Virginia's involvement in these missions with their students. Whether you teach K-2nd, 9-12th, or something in between; we have activities and resources to support you and excite your students!

*Friday, October 23rd, 4:00-5:00pm*

**Solar Observing**

**Beckley**

Zach Willhoite, *Tyler Consolidated High School, Sistersville, WV, zachary.willhoite@k12.wv.us*

This session will cover the basics of safely observing the Sun and ways to use solar astronomy in the classroom. We will discuss different methods for observing the Sun, what students can look for, and common safety concerns when working with solar telescopes. Weather permitting, participants will have the opportunity to observe the Sun through an H-alpha telescope and see features such as prominences and active regions. If the weather does not cooperate, we will instead explore the Sun and go through an activity using historical solar data. Participants will leave with a better understanding of safe solar observing, ideas for classroom activities, and practical ways to make observations of the Sun part of their science lessons.

**Investigating the Mole Ratio with Hydrogen Cars**

**Braxton**

Josh Revels, *Fairmont State University SciTech ERC, Fairmont, WV, jrevels@fairmontstate.edu*  
Rory Essenmacher, *Fairmont State University, Fairmont, WV, ressenmacher@students.fairmontstate.edu*

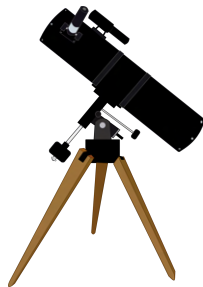
Assemble a hydrogen car and use electrolysis and chemical energy to power its motion. Learn to measure the gases produced from its electrolytic fuel cell and interpret the data to establish a balanced chemical equation. Join us for this fun application of stoichiometry.

**Forces and Energy: Connecting Middle School, High School, and College Physics**

**Charleston (114/116)**

April Townsend, *Fairmont State University, Fairmont, WV, april.townsend@fairmontstate.edu*  
John Makous, *Concord University, Athens, WV, jmakous@concord.edu*  
Katrina Andrews, *Ritchie County High School, Ellenboro, WV, kandrews@k12.wv.us*

This session is an opportunity for middle school, high school, and college teachers of physics to share ideas on how to teach forces and energy. We will discuss how middle school teachers can prepare their students to succeed in high school physics, and how high school teachers can prepare their students for college. Please bring copies of activities that you do with your students on these topics, so others can learn from you and so that we can give each other constructive feedback. We will especially focus on free-body force diagrams, energy transfer, and energy conservation. Note that there will not be hands-on demos, but concrete suggestions for how teach forces and energy will be shared!



*Friday, October 23rd, 4:00-5:00pm (Continued)*

**A Wicked Storm is Brewing**

**Charleston (118/120)**

Donna Cyr, *Anna Jarvis Elementary School, Grafton, WV, donna.cyr@k12.wv.us*

A Recipe for Hurricane Science: What ingredients brew a hurricane, and what happens when one reaches the shore? Join me for a Halloween-season science session with a hurricane read aloud and hands-on activities you can bring back to your classroom. Together we will make a swirling storm, investigate clouds and moving air, and test what happens when water reaches a model coastal town. You will leave with a recipe for getting students curious about severe weather.

**West Virginia Waters: Local Streams to Systems Thinking**

**Huntington**

Tina Blankenship, *McDowell County Schools, Welch, WV, tina.blankenship@k12.wv.us*

Amber He, Ashton Toney, Jeanette Pomeroy, Amanda Runion

Shared Waters is a FREE classroom-ready curriculum for grades 3-6 exploring watershed health and human impacts. Students collect and analyze data to identify clean water issues, fostering student-led action. Attendees will learn about this NSF-funded environmental science curriculum, co-created with West Virginia teachers, focusing on watershed health. The ten-lesson, WV standards-aligned program engages students in local field experiences and data analysis, empowering them to identify and address clean water issues in their community. In this session, attendees will explore hands-on lessons and leave with a printed copy of the curriculum, which is also available online.



## *Grand Banquet*

**Friday, October 23rd, 6:30 pm (doors open 6:15)  
Ballroom A**

**Introductions** \_\_\_\_\_ Angela McKeen  
*WVSTA President*

**Invocation** \_\_\_\_\_ Dr. Pat Obenauf ☺

**Dinner** \_\_\_\_\_ Buffet

**Presentation of Awards** \_\_\_\_\_ *see next pages*

**Introduction of Keynote Speaker** \_\_\_\_\_ Megan Bennett  
*WVSTA President-Elect*

**Keynote Speaker** \_\_\_\_\_ Colin Carpenter  
*Black Bear Project Leader,  
WV DNR*



## *Special Recognition Awards*

### **2026 Awards Ceremony**

#### **2026 WV Outstanding Biology Teacher Award**

*Presenter:* \_\_\_\_\_ **Brian McNeel**

*NABT- Outstanding Biology Director for WV*

**WV OBT Awardee** \_\_\_\_\_ **No Applicants**

Please nominate a teacher: <https://nabt.org/Awards-NABT-Award-Nomination-Form>

#### **2026 Patricia Obenauf Scholarship**

*Presenter:* \_\_\_\_\_ **Deb Hemler**  
*WVSTA Executive Dir.*

**Scholarship Recipient** \_\_\_\_\_ **Christy Young**  
*Herndon*  
*Consolidated K-8*

This award honors the 33-year commitment of Dr. Patricia “Pat” Obenauf, a founding member, to WVSTA.

Please nominate a teacher: <https://forms.gle/PhbyExETaFKtrYzL8>



**Dr. Patricia Obenauf (1932-2017)**  
**I honor the place in you in which the universe dwells.**

## Recent PAEMST\* Science Award Winners

### Elementary

2024 TBA  
2020 Tiffany Pace  
2018 Jamie Pettit  
2016 Margaret Howells  
2014 Nancy Holdsworth  
2012 Barbara “Tootie” Black  
Gabrielle Rhodes  
2010 Michele Adams  
2006 MaryLu Hutchins  
2004 Kathryn Edwards  
2002 Barbara Haines  
2001 Rebecca Kittle  
2000 Philip Guseman  
1999 Linda Fonner  
1998 Annette DeLuca  
1997 James Giles  
1996 Bonnie Mae Mueller  
1995 Carol Lou Mathis

### Secondary

2023 Alicen Adkins  
2021 Renee Haines  
2019 Angela McKeen  
2017 Erika Klose  
2015 Maureen Miller  
2013 Eric Kincaid  
Pete Karpyk  
2011 Angela McDaniel  
2009 Rebecca Jones  
2007 Mickie Richardson  
2003 Alicia Spears  
2002 Wayne Yonkelowitz  
2001 Linda Robinson  
2000 Cynthia Keeling  
1999 Sonya Picklesimer  
1998 Cindy Willis  
1997 Mary Sue Burns  
1996 Kathryn Ann Conway  
1995 Kathryn Burns Jacquez



**\*Presidential Award for Excellence in Math and Science Teaching**

## *WVSTA Distinguished Fellow*

At the 2002 WVSTA conference in Charleston, WVSTA began recognizing outstanding leaders in our organization. In 2004, the Executive Committee bestowed on these winners the title of “WVSTA Fellows” and drafted the following guidelines for future winners:

*Nominees must meet a minimum of four (4) of these seven criteria, and a minimum of two of the starred criteria:*

1. Past officer of WVSTA \*
2. Help plan/execute a WVSTA conference \*
3. Leadership in statewide educational activities or grants \*
4. Presenter at several WVSTA conferences
5. Significant contributions to the enhancement of science education
6. Recipient of other significant recognition (e.g. Presidential Award, Milken Award)
7. Served on state committees (such as WESTEST construction, or state curriculum development/revision, or state textbook adoptions)

## **Past Winners**

|      |                        |      |                                |
|------|------------------------|------|--------------------------------|
| 2025 | Ms. Teresa Barton      | 2022 | Dr. Todd Ensign                |
| 2023 | Mr. Robert Strong      | 2020 | Ms. Robin Sizemore             |
| 2017 | Mr. Kip Bisignano      | 2018 | Ms. Libby Strong               |
| 2015 | Ms. Linda Fonner       | 2016 | Mr. Wayne Yonkelowitz          |
| 2013 | Ms. Jody Cunningham    | 2014 | Dr. Deb Hemler                 |
|      | Ms. Jo Hendricks       |      |                                |
| 2011 | Mr. Patrick Balch      | 2010 | Mr. Bob Seymour                |
| 2009 | Ms. Cindy Willis       | 2008 | Ms. Sheila “Page”<br>Stevenson |
| 2007 | Dr. Rayman Richardson  | 2006 | Mr. Larry Oyster               |
| 2005 | Mr. David Goodwin      | 2004 | Mr. Jerry DeLuca               |
| 2003 | Ms. Diane Furman       | 2002 | Ms. Phyllis Barnhart           |
|      | Dr. Edward Keller, Jr. |      | Dr. Robert Behling             |
|      | Dr. Thomas Repine      |      | Dr. H. Andrew Cook             |
|      | Ms. Brenda West        |      | Dr. Joe Evans                  |
|      |                        |      | Dr. Jim Meads                  |
|      |                        |      | Dr. Patricia Obenauf           |

Please contact your officers for future nominations for WVSTA Fellow.

*Saturday, October 24th, 8:30am–8:55am*

**Elementary ESS Share-A-Thon**

**Ballroom A**

Deb Hemler, *Fairmont State University, Fairmont, WV*, [dhemler@fairmontstate.edu](mailto:dhemler@fairmontstate.edu)  
Josh Revels, *Fairmont State University, Fairmont, WV*, [jrevels@fairmontstate.edu](mailto:jrevels@fairmontstate.edu)  
Tina Blankenship, *Coalfield Elementary, Welch, WV*, [tina.blankenship@k12.wv.us](mailto:tina.blankenship@k12.wv.us)  
Anna Edmunds, *West Preston, Reedsville, WV*, [anna.edmunds@k12.wv.us](mailto:anna.edmunds@k12.wv.us)  
Rory Essenmacher, *Fairmont State University, Fairmont, WV*,  
[ressenmacher@students.fairmontstate.edu](mailto:ressenmacher@students.fairmontstate.edu)

Scholars of the 2026 Elementary Earth & Space Science Literacy Program will lead you through an exploration of a suite of elementary grade-level specific lessons. These inductive lessons teach Earth & Space Science and include a children's book to help teach science.

**STEM Competitions in WV: Robotics**

**Ballroom D**

John Holbrook, *Fairmont State SciTech ERC, Fairmont, WV*, [john.holbrook@fairmontstate.edu](mailto:john.holbrook@fairmontstate.edu)

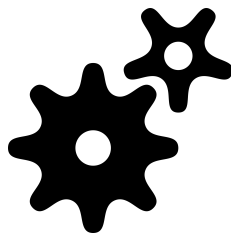
Through its WV Robotics Alliance project, Fairmont State's SciTech Education Resource Center supports over 10 unique STEM competition programs, comprising over 30 competition events each year and impacting thousands of students across West Virginia. This session will focus on our robotics competition programs.

**WV SPOT: Connecting Classrooms with STEM Role Models**

**Ballroom E**

Kourtney Kotvas, *NASA WV Space Grant Consortium, Morgantown, WV*,  
[klk00012@mix.wvu.edu](mailto:klk00012@mix.wvu.edu)

This presentation will share the evaluation of the West Virginia Science Public Outreach Team (SPOT), a STEM outreach program that connects K–12 classrooms with undergraduate and graduate SPOT Ambassadors for hands-on science presentations. WV SPOT aims to connect K–12 classrooms with relatable STEM role models to foster STEM interest and identity. The evaluation focuses on three primary outcomes: the program's impact on Ambassadors who deliver presentations, its effects on classrooms that receive them, and educators' perceptions of the program's influence on their classrooms. Data collection included surveys, interviews, and observations. A measure of science communication self-efficacy was also developed for the program. Findings indicate strong Ambassador science identity and science communication self-efficacy, high levels of K–12 classroom engagement, and positive educator perceptions of the program. Participants will gain insight into how SPOT presentations can support classroom STEM learning and success, including what presentations are currently available.



*Saturday, October 24th, 8:30am–8:55am (continued)*

**West Virginia Welcomes the First Annual Invention Convention**

**Beckley**

Vanessa Licwov Channell, *West Virginia University, Morgantown, WV, vlicwov@mail.wvu.edu*

The Invention Convention Worldwide is an entrepreneurship-focused K-12 program that teaches students to solve real-world problems through hands-on invention. Run by The Henry Ford, the curriculum guides students to identify challenges, engineer prototypes, and pitch their ideas, with top inventors advancing to the U.S. Nationals. Excitingly, West Virginia University (WVU) will host the state's first-ever competition in the Spring of 2027. Attendees will learn more about this opportunity and how to get support through the process.

**Empowering Educators, Connecting Careers: WVCC Initiatives in Action**

**Braxton**

Ethan Backus, *Glenville State University, Glenville, WV, ethan.backus@glenvillestate.edu*

This session aims to highlight the work of the West Virginia Career Collaborative (WVCC) over the past two years, its current initiatives, and its plans for the coming year to promote work-based learning in classrooms throughout north-central West Virginia. The WVCC focuses on bridging the gap between industry and education by promoting work-based learning opportunities at all grade levels. Studies show that students who participate in work-based learning opportunities demonstrate greater academic success, stronger durable skills, and greater career awareness than their peers who do not have these opportunities. This session will highlight several initiatives and opportunities for teachers to engage in work-based learning, including curriculum mini-grants, opportunities to serve as high school work-based learning coordinators, Project Lead the Way (PLTW) training scholarships, and educator field trips.



*Saturday, October 24th, 8:30am–9:30am*

**A Prehistoric Posse: Using Dinosaurs to Teach Life Science Standards**

**Charleston (114/116)**

Angela McKeen, *Fairmont State University, Fairmont, WV, amckeen@fairmontstate.edu*

In this hands-on learning cycle session, we will be putting a prehistoric twist on two common Life Science NGSS standards "Construct an argument that some animals form groups that help members survive" and "Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death." Using dinosaurs as our animal forms and bubbles to represent the differences in life cycles, we will be taking these standards way back to the Mesozoic. Join us for a great time looking at these standards through a prehistoric lens.

**Crime Reconstruction (Part 1 of 2)**

**Charleston (118/120)**

Roger Jefferys, *WVU, Morgantown, WV, reffery@mail.wvu.edu*

This engaging presentation is specially designed for high school educators looking to bring real-world forensic science into their classrooms. Participants will explore the multidisciplinary world of crime scene reconstruction by diving into three core investigative pillars: crime scene photography, shooting reconstruction, and bloodstain pattern analysis. Educators will learn how to translate these techniques into accessible, safe, and standards-aligned classroom activities that build critical thinking and problem-solving skills for their students.

**Hands-on Energy and Climate STEM Modules: Exploring Geoscience Solutions (EGeoS)**

**Huntington**

Amy Weislogel, *West Virginia University, Morgantown, WV, amy.weislogel@mail.wvu.edu*

What if your next STEM lesson started with an energy or climate challenge facing West Virginia? Exploring Geoscience Solutions (EGeoS) modules are teacher-vetted, classroom-tested, and aligned with high-school standards in physical science, chemistry, biology, environmental science, and Earth and space science. Each module uses authentic science to explore energy and climate topics students already hear about, including geothermal energy, forest carbon offsets, carbon sequestration, rare earth elements, and greenhouse gases. Through hands-on, inquiry-based activities, students build career-ready skills in collecting and interpreting data, solving problems, communicating scientific ideas, and using systems thinking to connect science with environmental, technological, economic, and community decisions. With EGeoS, students become scientists and engineers investigating geoscience solutions to real energy and climate challenges. Bring EGeoS into your classroom with support from a WVU undergraduate EGeoS student ambassador, who can visit your class to help you launch a module.



*Saturday, October 24th, 9:05am–9:30am*

**Elementary ESS Share-A-Thon**

**Ballroom A**

Deb Hemler, *Fairmont State University, Fairmont, WV, dhemler@fairmontstate.edu*  
Josh Revels, *Fairmont State University, Fairmont, WV, jrevels@fairmontstate.edu*  
Tina Blankenship, *Coalfield Elementary, Welch, WV, tina.blankenship@k12.wv.us*  
Anna Edmunds, *West Preston, Reedsville, WV, anna.edmunds@k12.wv.us*  
Rory Essenmacher, *Fairmont State University, Fairmont, WV, ressenmacher@students.fairmontstate.edu*

Scholars of the 2026 Elementary Earth & Space Science Literacy Program will lead you through an exploration of a suite of elementary grade-level specific lessons. These inductive lessons teach Earth & Space Science and include a children's book to help teach science.

**WV STEM Competitions: Drones**

**Ballroom D**

John Holbrook, *Fairmont State SciTech Education Resource Center, Fairmont, WV, john.holbrook@fairmontstate.edu*

Through its WV Robotics Alliance project, Fairmont State's SciTech Education Resource Center supports over 10 unique STEM competition programs, comprising over 30 competition events each year and impacting thousands of students across West Virginia. This session will focus on our drone competition programs.

**NABT - West Virginia Outstanding Biology Teacher Award**

**Ballroom E**

Brian McNeel, *NABT, Winfield, WV, bmcneel@k12.wv.us*

This session will highlight the Outstanding Biology Teacher Award (OBTA) in West Virginia and go over how to apply. Past West Virginia OBTA recipients will share their experiences, teaching practices, and insights into what makes an outstanding biology educator. Participants will learn about the impact of the award and how we can continue to recognize and support excellence in biology education across West Virginia.

**Save The Bananas! Applied Genetics for grades 6-12**

**Beckley**

Suzanne McDonald, *West Virginia University, Morgantown, WV, smcdonal@mail.wvu.edu*  
Dr. Emma Gardner

Save the Bananas! Your Banana is a clone! Every Cavendish banana sold worldwide is genetically identical, propagated by cutting rather than seed, and that lack of genetic diversity is now colliding with Fusarium wilt Tropical Race 4, a fungal disease spreading through banana-growing regions with no easy cure. It's a real, unfolding case of what happens when a crop loses its genetic diversity, and a perfect hook for teaching genetics to grades 6–12. Come extract real banana DNA using common, inexpensive materials. In this hands-on session, you'll run the extraction yourself and see how it opens into classroom conversations about monoculture risk and the biotechnology being developed to save this important world crop. All participants receive the full lesson plan, materials list, student handouts, and the opportunity to request the free full curriculum and complimentary equipment kit.

## *Saturday, October 24th, 9:05am–9:30am (continued)*

### **Does an Undergraduate Teacher's Assistant Increase Student Success?**

**Braxton**

Karlie Fenstermacher, *Fairmont State University, Fairmont, WV*,  
[kfenstermacher2@students.fairmontstate.edu](mailto:kfenstermacher2@students.fairmontstate.edu)

Kristy Henson

Attending college can pose unique challenges to freshmen, and many feel unprepared. This project explores whether an undergraduate teaching assistant (UTA) increases student success during their first semester. An UTA was placed into a 1-credit-hour STEM1100 Freshman Seminar at Fairmont State University (n=8), attended class, and offered 1-office hour before class. Measurements include 4-week, midterm, and final grades, number of times the UTA is reached out to for help, and results of UTA's anonymous well-being check ins. This will help determine if the students are more comfortable with the UTA rather than the professor and see if it increases student success. Current results indicate that 25% of students are failing 1+ courses at 4-weeks. Thirty-seven percent feel uncomfortable speaking up in class, and time management is their biggest hurdle. 2/8 students have reached out. UTA's may be a useful tool to implement in freshman STEM courses to increase student success.

## *Saturday, October 24th, 9:45am–10:45am*

### **Dragonfly Mission Classroom Activities**

**Ballroom A**

Todd Ensign, *Fairmont State University, Fairmont, WV*, [tensign@fairmonstate.edu](mailto:tensign@fairmonstate.edu)

Katrina Andrews, Vincent O'Leary, Jo Frost, Barbie Pill, Joyce Mills, John Holbrook, Angie Abbott, Heather Oden

Join a group of dedicated teachers who have been developing and testing new activities designed for middle-high school classrooms to introduce NASA's Dragonfly Mission to Titan launching in July 2028. In addition to free materials, you will also learn how you can get involved in the annual Dragonfly Educator Summer Institute at Fairmont State.

### **Let's Make a Coal Swamp**

**Ballroom D**

John Tudek, *WVGES, Morgantown, WV*, [jtudek@wvgs.wvnet.edu](mailto:jtudek@wvgs.wvnet.edu)

Elibeth Rhenberg and Cassie Tudek

A hands-on activity, primarily for elementary school students, wherein we 'make' a collaborative Carboniferous coal swamp as a way to explain what life was like across most of West Virginia when coal was being deposited. Links to online materials provided as part of the session.



**Lessons Using Electron Microscopy for any Science, Local or Remote Classroom**

**Ballroom E**

Stephen Kuehn, *Concord University, Athens, WV*, [skuehn@concord.edu](mailto:skuehn@concord.edu)

Brian Strickler, *Concord University, Athens, WV*, [stricklerb11@mycu.concord.edu](mailto:stricklerb11@mycu.concord.edu)

Electron microscopes can provide an accessible window into the world of the very small, appropriate for kids and adults alike. Tiny crystals, bits of a feather, or even just a grain of sand could be an entry point into this micro-world. It's easier than you might think.

We've been developing lesson topics and a few initial lesson plans, aligned with WV content standards, for multiple 9-12 courses, including Earth-Space Science, Biology/A&P, Chemistry, Physics, Environmental Science, Art, and Forensics. These can utilize electron microscopy to ask many kinds of "what does it look like" and "what is it made of" questions. Both pictures and compositional data can be obtained. All of this can be done remotely from any classroom via a Zoom connection, and your kids can even take control of the instrument themselves. In this session, we'll share and discuss lesson ideas and draft lessons that you could use.

**Energy in Action**

**Beckley**

Joyce Bryant, *Holden Central Elementary, Holden, WV*, [joyce.bryant@k12.wv.us](mailto:joyce.bryant@k12.wv.us)

This hands-on presentation explores the transformation of energy through engaging, interactive activities designed to make abstract science concepts tangible and meaningful. Participants will investigate how energy can change from one form to another by making and testing a pinwheel. Participants will observe energy transformations and identify evidence of these changes. This activity is designed for fourth grade, but could be adapted for different grade levels and learning environments.

**Data Centers, A.I., Small Modular Nuclear Reactors, and the Future of West Virginia**

**Braxton**

Robert E. Strong, *SMART-Center, Wheeling, WV*, [robert@smartcenter.org](mailto:robert@smartcenter.org)

Richard J. Pollack, *SMART-Center, Wheeling, WV*, [rjpenenergy@gmail.com](mailto:rjpenenergy@gmail.com)

Join Richard J. Pollack and Robert E. Strong from Wheeling's SMART-Center as we get you acquainted and prepared for a question, we are sure you, your friends, colleagues, and students will soon be asking. It is not too bold a statement to suggest that the very future fate of West Virginia lies within three seemingly unrelated technology concepts: Data Centers, AI, and Small Modular Nuclear Reactors. Join Richard and Robert for an open and frank discussion / presentation of what Data Centers, AI, and Small Modular Nuclear Reactors (SMR's) each offer to West Virginia in both positive and negative terms. Richard and Robert will outline the pros and cons of each with help and input from the audience. Then Richard and Robert will outline how a merging of these three technologies will influence (for the good or bad) every single aspect of West Virginia. Activities & hand-outs.

## *Saturday, October 24th, 9:45am–10:45am (Continued)*

### **The Elementary Scoop on Poop** **(114/116)**

**Charleston**

Karen Davis, *Eastwood Elementary School, Morgantown, WV*, [karen.l.davis@k12.wv.us](mailto:karen.l.davis@k12.wv.us)

Unearth the secret power of detritivores to teach both literacy and life science! We will explore how Read Alouds can serve as a tool for hands-on composting and sustainability in grades K–5. We will dig into nature's mini-recyclers—worms and pill bugs—while trying out classroom-tested decomposition experiments that integrate reading comprehension, inquiry-based science, and environmental stewardship. Get tips on keeping classroom detritivores happy and working. You can have your own low-maintenance classroom composting and design interactive critter-investigations using red wigglers and isopods.

### **Crime Reconstruction (Part 2 of 2)** **(118/120)**

**Charleston**

Roger Jefferys, *WVU, Morgantown, WV*, [rjeffery@mail.wvu.edu](mailto:rjeffery@mail.wvu.edu)

This engaging presentation is specially designed for high school educators looking to bring real-world forensic science into their classrooms. Participants will explore the multidisciplinary world of crime scene reconstruction by diving into three core investigative pillars: crime scene photography, shooting reconstruction, and bloodstain pattern analysis. Educators will learn how to translate these techniques into accessible, safe, and standards-aligned classroom activities that build critical thinking and problem-solving skills for their students.

### **"Funergize" Your Science Class**

#### **Huntington**

Eric Kincaid, *Monongalia County Board of Education, Morgantown, WV*, [ekincaid@k12.wv.us](mailto:ekincaid@k12.wv.us)

Looking to add some tools to your “funtastic” toolbox? In this interactive session, middle and high school teachers will explore five practical strategies to make lessons fun and ramp up the positive energy, while still focused on the content. Participants will have the opportunity to share what they already do so everyone can leave with a few new tools to make your class one students don’t want to miss!

## *Saturday, October 24th, 11:00am-12:00pm*

### **Essential Physics Skills: Connecting Middle School, High School,** **and College Physics**

**Beckley**

April Townsend, *Fairmont State University, Fairmont, WV*, [april.townsend@fairmonstate.edu](mailto:april.townsend@fairmonstate.edu)

John Makous, *Concord University, Athens, WV*, [jmakous@concord.edu](mailto:jmakous@concord.edu)

Katrina Andrews, *Ritchie County High School, Ellenboro, WV*, [kandrews@k12.wv.us](mailto:kandrews@k12.wv.us)

This session is an opportunity for middle school, high school, and college teachers of physics to discuss the essential skills of graphing and vector analysis in the context of physics courses. We will discuss how middle school teachers can prepare their students to succeed in high school physics, and how high school teachers can prepare their students for college. Please bring copies of activities that you do with your students on these topics, so others can learn from you and so that we can give each other constructive feedback. There will be no hands-on demos, but you will receive concrete ideas that you can incorporate into your classroom!

## ***Saturday, October 24th, 11:00am-12:00pm (continued)***

### **The Good, The Bad, and The Ugly - A Game for Evaluating Dark Skies Exterior Lighting**

**Braxton**

Robert E. Strong, *SMART-Center, Wheeling, WV*, [robert@smartcenter.org](mailto:robert@smartcenter.org)

We all know that West Virginia is both “Wild and Wonderful”. But did you know that there are parts of West Virginia that have the darkest skies east of the Mississippi? This little-known natural resource - with awareness and understanding - will become another major tourist industry for West Virginia. In an effort to preserve and enhance the rare and delicate treasure that is West Virginia’s Dark Skies, Robert and Libby Strong have developed a “game” your students can play at school and at home evaluating outdoor lighting fixtures for Dark Skies friendliness. We can retain and enhance West Virginia as truly “Wild and Wonderful” both day and night. Join Robert E. Strong from Wheeling’s SMART-Center as we play a game for evaluating Dark Skies exterior lighting preserving West Virginia’s premier Dark Skies while fighting encroaching Light Pollution in our desire to remain both “Wild and Wonderful”. Activities & hand-outs.

### **Talk Moves for Science Sensemaking**

**Charleston (114/116)**

Adrienne Morris, *FOSS and School Specialty, Pendleton, KY*,  
[adrienne.morris@schoolspecialty.com](mailto:adrienne.morris@schoolspecialty.com)

How can purposeful teacher moves deepen student thinking and engagement in science? Through a shared Explore experience, participants will examine practical discourse strategies and talk moves that support sensemaking, strengthen student-to-student conversations, and connect to West Virginia's Science and Engineering Practices (SEPs) and Crosscutting Concepts (CCCs). Teachers will leave with ready-to-use strategies that can be applied in any grades 3-5 science classroom.

### **Wind Can Do Work!**

**Charleston (118/120)**

Caryn Turrel, *The NEED Project Manassas, VA*, [info@need.org](mailto:info@need.org)

Put your engineering skills to the test with hands-on wind energy challenges! Explore wind as a renewable energy source while investigating how blade material, shape, pitch, number of blades, and other variables affect a wind turbine’s ability to do work. Design and test turbine blades, collect and analyze data, and compete in the Wind Weightlifting Challenge to see whose turbine can lift the greatest load. Participants will also build an anemometer to investigate wind speed and its importance in generating electricity. These classroom-ready activities engage students in planning and carrying out investigations, analyzing data, constructing explanations, and designing solutions while working like engineers. Leave with engaging lessons, teaching strategies, and free resources to bring wind energy and engineering to life in your classroom.

### **From Living Things to Living Streams: A Hands-on Investigation**

**Huntington**

Eric Kincaid, *Monongalia County Board of Education, Morgantown, WV*, [ekincaid@k12.wv.us](mailto:ekincaid@k12.wv.us)

Explore a hands-on investigation that connects characteristics of life, biodiversity, and environmental remediation. Middle and High School teacher participants will experience a stream remediation challenge in which students use evidence, design solutions, and evaluate their effectiveness. The session will also share classroom examples from the characteristics of life portion of the investigation and discuss ways to adapt the activity for grades 6–8 science, Biology, and Environmental Science. Teachers will leave with resources and practical information they can use to replicate the activity in their own classrooms at minimal cost.

## *President's Luncheon & Business Meeting*

**Saturday, October 24th, 12:00pm- 1:30pm**  
**Ballroom A**

**Presider**\_\_\_\_\_ **Angela McKeen**  
*WVSTA President*

*Welcome*

*Introduction of Officers*

*Recognition of Conference Committee & Contributors*

*Lunch*

**WVSTA Business Meeting**\_\_\_\_\_ **Angela McKeen**  
*WVSTA President*

*New Business*

*Art Contest Winner*

*Door Prizes*

## **Plan to join us for Future Conferences**

**October 21<sup>st</sup>-23<sup>rd</sup>, 2027**\_\_\_\_\_ **Oglebay Resort**  
*Wheeling, WV*



## *Exhibitors*

### **3Z's Instruments, LLC.**

www.3zslc.com  
Mr. Tim Zickefoose  
Tim@3zslc.com  
(800) 247-2726

### **by the Robin**

Robin Sizemore  
bytherobin@gmail.com  
bytherobin on Facebook

### **ExploreK12**

www.explorek12.com  
josh.jones@explorek12.com  
866-871-7177 x333

### **McGraw Hill**

<https://www.mheducation.com/>  
Mark Hurt  
mark.hurt@mheducation.com

### **Monongalia County SWA**

Lynn Castro  
304-292-3801  
[www.monongaliacountyswa.com](http://www.monongaliacountyswa.com)

### **Pitsco Education**

Stephenie Righini  
srighini@pitsco.com  
800-835-0686

### **Prodigy Learning**

AI Ready Skills  
[aireadyskills.com/wv](http://aireadyskills.com/wv)  
Jennifer Brown  
jennifer.brown@prodigylearning.com

### **Savvas Learning Company**

<https://www.savvas.com/>  
Amanda Ansell  
amanda.ansell@savvas.com

## *Exhibitors (continued)*

|                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>FOSS/School Specialty</b><br><br><a href="http://www.schoolspecialty.com">www.schoolspecialty.com</a><br>Kevin Stinson, Ed.D.<br>FOSS<br><a href="mailto:kevin.stinson@schoolspecialty.com">kevin.stinson@schoolspecialty.com</a><br>503-806-7684 | <b>SMART Centre Market</b><br><br><a href="http://www.smartcenter.org">www.smartcenter.org</a><br><a href="http://www.smartcentremarket.com">www.smartcentremarket.com</a><br>Robert Strong<br><a href="mailto:robert@smartcenter.org">robert@smartcenter.org</a><br>Libby Strong<br><a href="mailto:libby@smartcenter.org">libby@smartcenter.org</a><br>304-23-DINOS (304-233-4667)<br>1410 Main Street, Wheeling, WV |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## **Non-Profit Vendors**

| Non-Profit Exhibitor                                           | Website                                                                                                                                          |
|----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Concord University, Physical and Environmental Sciences</b> | <a href="https://www.concord.edu/physci">https://www.concord.edu/physci</a>                                                                      |
| <b>Challenger Learning Center at Wheeling University</b>       | <a href="http://clcwheeling.org">clcwheeling.org</a>                                                                                             |
| <b>Fairmont State University SciTech ERC</b>                   | <a href="https://www.fairmontstate.edu/education-resource-center/">https://www.fairmontstate.edu/education-resource-center/</a>                  |
| <b>Green Bank Observatory/WV SPOT</b>                          | <a href="https://greenbankobservatory.org">https://greenbankobservatory.org</a><br><a href="https://www.wvspot.org/">https://www.wvspot.org/</a> |
| <b>National Energy Education Development</b>                   | <a href="https://www.need.org/">https://www.need.org/</a>                                                                                        |
| <b>Recycling Coalition of West Virginia</b>                    | <a href="http://wvrecycles.org">wvrecycles.org</a>                                                                                               |
| <b>West Virginia Bridge Design &amp; Build</b>                 | <a href="http://wvbdb.com">wvbdb.com</a>                                                                                                         |
| <b>Wood County Solid Waste Authority</b>                       | <a href="http://www.woodcountyrecycles.com">www.woodcountyrecycles.com</a>                                                                       |
| <b>WV Career Collaborative</b>                                 | <a href="mailto:wvcareercollab@gmail.com">wvcareercollab@gmail.com</a>                                                                           |
| <b>WV DEP Youth Environmental Program</b>                      | <a href="https://dep.wv.gov">https://dep.wv.gov</a>                                                                                              |
| <b>WVU Appalachian Geoscience Learning Ecosystem (AGLE)</b>    | <a href="mailto:AGLE@mail.wvu.edu">AGLE@mail.wvu.edu</a>                                                                                         |
| <b>WVU Immunology</b>                                          | <a href="http://www.medicine.wvu.edu/immunology-and-microbial-microbiology">www.medicine.wvu.edu/immunology-and-microbial-microbiology</a>       |

## *Special Thanks*

*This conference would not be possible without the above and beyond actions of many individuals and organizations. Please make an effort to give special thanks to:*

- WV SPACE GRANT CONSORTIUM for providing the printing and binding of the conference program.
- WV SPACE GRANT CONSORTIUM for assisting in the room rental fee, vendor reception, and breaks.
- By the Robin (Robin Sizemore) for her creativity and generous donation of speaker gift baskets.
- WVSTA for providing the name badge holders
- FAIRMONT STATE UNIVERSITY, for printing the Matrix.
- VENDORS for sponsoring the Vendor Reception
- FAIRMONT STATE UNIVERSITY for printing registration materials.
- Cody Barnes for preparing the registration materials.
- Blenko Glass for donating presenter gifts.
- ALL THE GENEROUS VENDORS who supplied door prizes.
- ALL OF THE PRESENTERS who prepared and shared their passion for science education;
- ALL who made tours possible and helped to make this a great conference; and
- ALL of you who attended, because without attendees, there is no conference!

*A state conference is a huge undertaking and is the work of many people. The cooperation and helping hands that have been extended to WVSTA and the conference committee have been invaluable. Thank you to everyone who made this conference possible.*

*WVSTA 2026 Art Contest Winner*



Aisiah Evans & Ivy Bailey  
East Hardy Elementary School  
Teacher: Trisha Henry

*CERTIFICATE OF  
ATTENDANCE*

**Presented to**

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**for Participation in the  
West Virginia Science Teachers Association Conference  
October 22-24, 2026  
Flatwoods Days Inn & Suites in Sutton, WV**

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**Angela McKeen  
2026 WVSTA President**

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**Dr. Deb Hemler  
WVSTA Executive Director**

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