

SCIENCE



2024 ANNUAL CONFERENCE

24/7

STONEWALL RESORT ROANOKE, WV



NASA West Virginia Space Grant Consortium WVSPACEGRANT.ORG

West Virginia University, 341 Mineral Resources Building
Morgantown, WV 26506
(304) 293-4099

K-12 Educators & Outreach

- STEM Activities
- Games, Articles, Videos, & More!

College Students

- Undergraduate Research Scholarships
- Ambassador Program
- Graduate Research Fellowships
- Summer Internships

Higher Education Faculty Research Grants

- Research Initiation Grants

For more information please visit our website:
WVSPACEGRANT.ORG

or

Email: Candy.Cordwell@mail.wvu.edu

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

CONSORTIUM AFFILIATES

West Virginia University (Lead)
Bethany College
Bluefield State University
Clay Center for the Arts and Sciences of WV
Community and Technical College System of WV
Fairmont State University
Glenville State University
Green Bank Observatory
Marshall University
NASA Katherine Johnson IV&V Facility
Polyhedron Learning Media, Inc.
Shepherd University
West Liberty University
WV High Technology Foundation
West Virginia State University
WVU Institute of Technology
West Virginia Wesleyan College
Wheeling University

**Thank you NASA WVSGC for funding the
“Re-discovering CATS Cadre Experts” and
“WV Climate Change PD” grants,
K-12 Professional and Curriculum Development Programs which
provided registrations for 28 teachers, retired and in-service, at this
year’s conference,
and the “International Science & Engineering Fair” grant.**

NASA WVSGC

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www.wvspacegrant.org

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President's Message

Welcome to WVSTA's 2024 Conference - Science 24/7!

Dear Members,
Welcome to the West Virginia Science Teachers' Association (WVSTA) conference! Whether this is your first time with us, or your twentieth, I am so happy you decided to spend time with us this year. I look forward to this conference every year as an opportunity to be reinvigorated in my vocation, experience new ideas for my classroom, and share conversations with science-friends, new and old.



This year's theme, Science 24/7, recognizes the foundational role science plays in all our lives. It recognizes the passage of time: the cycle of day, night, and the seasons, as well as time on the long scales of geology and the universe. Our theme recognizes the contributions science makes in our daily lives: the medical advances we benefit from, the technologies that we use, and our understanding of our role in the health of our environment. Not least of all, our theme recognizes your dedication to sharing great science with your students. We are all here because of our passion for teaching!

This conference would not be possible without the contributions of the conference committee. Join me in thanking our conference chair, Angela McKeen, the WVSTA board, and the many volunteers that make this conference possible. WVSTA is a volunteer-run organization; we have no paid staff, and the WVSTA Executive Board works hard throughout the year to make it possible. Consider how you may help next year's conference shine - perhaps by serving on the conference committee, or by leading a session.

Make the most of your time here! If you are an early bird, start your time with us Thursday night at the vendor reception (where you get WVSTA bucks) and the auction (where you spend WVSTA bucks!). Attend the Opening Session, featuring Dr. Jordan Mader of University of Arkansas - Fort Smith. Don't miss the Grand Banquet, where you'll hear from Dan Mantz, CEO of the Robotic Education and Competition (REC) Foundation. Attend your custom blend of concurrent sessions, where you will learn new ideas and strategies from your peer teachers; take a field trip; visit vendors; and enjoy meals where you can catch up with old friends, and make new ones! Enjoy your time with us.

Be well, do good work, and have fun!
Davita Melander
2023-2025 President, WVSTA

Conference at a Glance

Thursday, October 24th

Time	Room	Event
3:30pm – 9:00pm	Lobby	Registration
5:00pm – 9:00pm	Stonewall I	Pre Conference Workshop
6:00pm – 9:00pm	Birch Room/Foyer	Exhibits Open
6:00pm – 9:00pm	Ballroom Foyer	Exhibitors' Reception
8:45pm – 10:00pm	Stonewall II	Auction ☺
10:00 p.m.	Meet in Lobby	Stargazing

Friday, October 25th

Time	Room	Event
6:30am – 8:00am	Ballroom/Foyer	Breakfast
7:30am – 5:00pm	Lobby	Registration
8:00am – 5:00pm	Birch Room/Foyer	Exhibits Open
8:00am – 10:15am		Concurrent Sessions
10:30am – 12:00pm	Stonewall I+II	Opening Session
12:00pm – 12:30pm	Stonewall II	Forums
12:30pm – 1:30pm	Stillwaters	Lunch
1:15pm – 5:30pm	Meet in Lobby	Tours
1:30pm – 5:00pm		Concurrent Sessions
2:30pm - 2:45pm	Ballroom Foyer	Break
6:30pm – 8:30pm	Stonewall Ballrooms	Grand Banquet
8:30pm – 10:30pm	Ballroom Foyer	Dessert Reception
	Fire Pit	Hangout with Friends

Saturday, October 26th

Time	Room	Event
6:30am – 8:00am	Ballroom/Foyer	Breakfast
8:00am – 10:00am	Lobby	Registration
8:00am – 12:00 noon	Meet in Lobby	Tours
8:30am – 12:00 noon		Concurrent Sessions
8:00am – 11:45am	Birch Room/Foyer	Exhibits Open
12:00 noon – 1:30pm	Stonewall Ballrooms	President's Luncheon & WVSTA Business Meeting
1:30pm – 2:30pm	Oak Boardroom	WVSTA Board Meeting

**Welcome to Stonewall Resort and Conference Center in
Roanoke, WV!**

Keynote Speakers

Opening Session - Friday, October 24, 11:00am



Jordan Mader is an Associate Professor of Chemistry at the University of Arkansas – Fort Smith (UAFS), where she has taught since 2019. Her engagement and advocacy for students, colleagues, and the surrounding community have driven her work in higher education for more than 15 years.

She received her degrees from Rensselaer Polytechnic Institute in the first cohort of the 7-Year B.S./Ph.D Program.

During her 7 years as Assistant then Associate Professor at Shepherd University she established transformative programs, including co-developing the “Seeding Your Future” Initiative, a STEAM outreach program for 5th-12th grade students.

Currently, Dr. Mader is heavily involved in the University Curriculum and Policies and Procedures committees; has helped to plan and presented at the UAFS Student Success Mini-Conference; participated in the Festival of Science and the STEM Associates program for area science teachers; and provided SafeZone training for faculty, staff, and students across campus. She has been featured in the College of Arts and Sciences Faculty Advisor Spotlight and the UAFS Faculty Voices.

Dr. Mader recently presented on interdisciplinary pedagogy (namely, project-based learning and the integration of the arts into her STEM classes) to public education and higher education audiences at the 2024 Biennial Conference on Chemical Education. Her research agenda is ongoing, as she has several research projects in development, primarily concerning the intersecting fields of environmental/green chemistry and organic synthesis. One of these projects has generated a student-led publication.

In her free time, Jordan enjoys reading fantasy and speculative fiction, hiking, gardening, playing any game in the Legend of Zelda series, and taking her 7-month-old dachshund puppy on big adventures.

Keynote Speakers

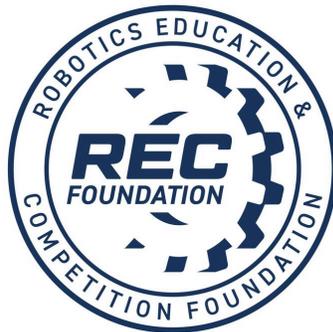
Grand Banquet - Friday, October 25, 6:30pm-8:30pm



Dan Mantz is the Chief Executive Officer for the Robotics Education and Competition (REC) Foundation. He joined the REC Foundation in 2017 after 30 years in the robotics and manufacturing industries. Dan is responsible for leading the REC Foundations strategic direction to provide more students the opportunity to engage in STEM activities and careers. The REC Foundation is one of the world's leading science, technology, engineering, and mathematics (STEM) nonprofit organizations whose mission is to spark student interest and involvement in STEM by engaging students in hands-on, affordable, and sustainable curriculum-based robotics programs.

The REC Foundation provides educators with services, solutions, and a community that allows students to learn and embrace the technical and interpersonal skills necessary for them to succeed in the 21st Century. Whether it's a competitive event, workshop, camp, or conference, the REC Foundation is committed to promoting technology and related student and professional advancement so that one day these programs become accessible to all students across all schools in all communities.

In West Virginia, we had 474 teams participating in REC Foundation programs including: VEX IQ, VEX V5, VEX University, Technology Student Association, and the Aerial Drone Competition, and we expect these programs to continue their rapid growth for the foreseeable future.



General Information

Registration

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

- **Thursday, October 24th** _____ **3:30pm – 9:00pm**
- **Friday, October 25th** _____ **7:30am – 5:00pm**
- **Saturday, October 26th** _____ **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 24th

Exhibitors' Reception _____ 6:00pm– 9:00pm _____ Second Floor Foyer
(Sponsored by All of Our Exhibitors)

Friday, October 25th

Breakfast _____ 6:30am– 8:00am _____ Ballroom/Foyer

AM Break _____ 10:15m- 10:30am _____ Second Floor Foyer
(Sponsored by WVSTA)

Lunch _____ 12:30pm– 1:30pm _____ Stillwaters

PM Break _____ 2:30pm- 2:45pm _____ Second Floor Foyer
(Sponsored by WVSTA)

Grand Banquet _____ 6:30pm– 8:30pm _____ Stonewall Ballrooms

Dessert Reception _____ 8:30pm– 10:30pm _____ Second Floor Foyer
(Sponsored by PAEMST)

Saturday, October 26th

Breakfast _____ 6:30am– 8:00am _____ Ballroom/Foyer

President's Luncheon _____ 12:00pm– 1:30pm _____ Stonewall Ballrooms
(Sponsored by WVSTA)

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 the **Birch Room**. The exhibit hall is open during the following times:

- **Thursday, October 24th** _____ **6:00pm – 9:00pm**
- **Friday, October 25th** _____ **8:00am – 5:00pm**
- **Saturday, October 26th** _____ **8:00am – 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 25th

- Opening Session _____ 10:30am–12:00pm _____ Stonewall Ballrooms
- Lunch Forums _____ 12:15pm– 1:15pm _____ See Forums Page
Join like-minded people at a roundtable while eating lunch!

Saturday, October 26th

- WVSTA Business Meeting _____ 12:00pm–1:30pm _____ Stonewall Ballrooms
- Executive Board Meeting _____ 1:30pm–2:30pm _____ Board Room



Pre-Conference Workshop

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

Thursday, October 24, 5:00 p.m.- 9:00 p.m



Josh Revels, NASA IV&V ERC Education Specialist, is the principal investigator of the Going Global in WV with GLOBE grant and aims to increase student and teacher participation with The Global Learning and Observations to Benefit the Environment (GLOBE) Program. As one of the team leads with the West Virginia Climate Change Professional Development (WVCCPD) Community, he offers weather and climate educator workshops demonstrating both citizen science protocols and lessons aligned with the West Virginia College and Career Readiness Standards.

Consider getting involved with the WV Atmosphere Focus Group and collecting data with your students! Come check out and celebrate West Virginia's award winning entries entered in the 2024 GLOBE International Virtual Science Fair.

NASA IV&V's ERC has added an Automated Weather Station to the Kit Loan Program

In the Fall of 2023, awards from both the NASA West Virginia Space Grant Consortium and The GLOBE Implementation Office enabled Fairmont State University and the NASA IV&V's Education Resource Center in Fairmont, WV to add a loanable, automated Davis Weather Station to its existing Atmosphere data protocol training. Mentorship and training prepare GLOBE teachers to become mentors for both the West Virginia Science & Engineering Fair projects and the GLOBE International Virtual Science Symposium.

Johnson Elementary (Bridgeport, WV) and Parkersburg High School (Parkersburg, WV) partner with the NASA IV&V ERC to maintain and facilitate the operation of fixed, automated weather stations. Compare data across the state and provide your students with an opportunity to collect high quality data for a meaningful science fair project.



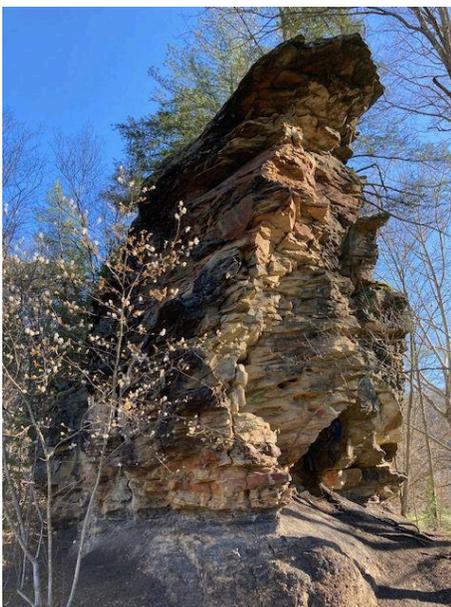
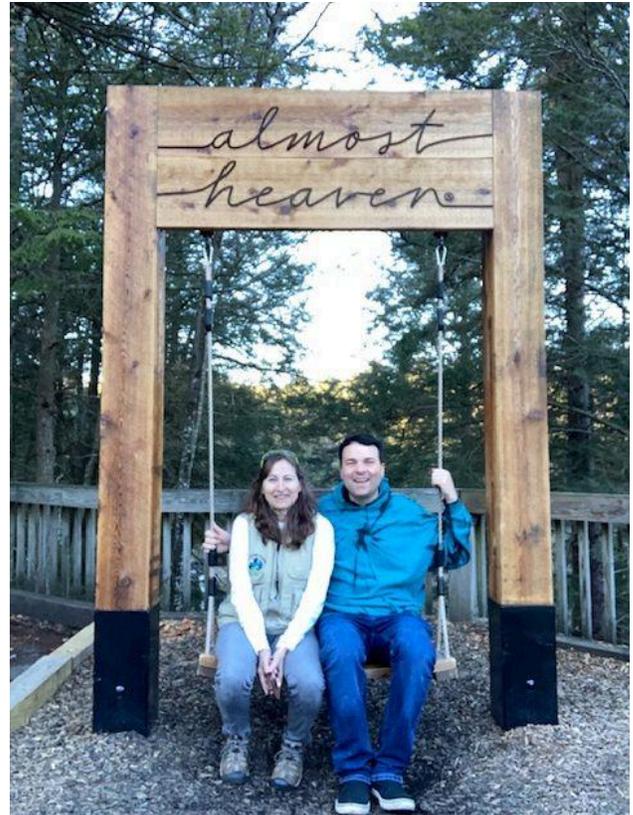
Post-Conference Workshop

Saturday, October 26, 1:30 p.m.- 3:30 p.m

Chasing waterfalls takes on a whole new meaning in West Virginia with the nation's first-ever statewide Waterfall Trail. Get your passport at <https://wvtourism.com/west-virginia-waterfall-trail/> and join Waterfall Wanderers, **Deb Hemler** and **Josh Revels**, in a tour of the Falls Mill waterfall and geology.

Just off U.S. Route 19 on Pleasant Hill Road (105 Pleasant Hill Rd, Napier, WV 26631) in Braxton County, Falls Mill is a photogenic and wide cascade spanning the entire width of the Little Kanawha River. Embrace the view from the roadside overlook to catch a truly panoramic snapshot of this expansive waterfall and surrounding exposed stratigraphy

Please sign up at the registration table before the Presidential Luncheon to be included in the convoy. Parking is available in a gravel lot. Although there is no hiking to get to the falls, wear comfortable shoes and bring water.



Special Events

18th Annual WVSTA Auction

Thursday, October 24th _____ 8:45pm– 10:00pm

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!!!"

Stonewall II



Photo Booth

➤ **Thursday October 24- Saturday October 26**

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 #wvsta24/7 as a hashtag. Let's show WV and the world our amazing science teachers!

Door Prize Winners Circle

□ **Saturday, October 26th _____ 12:00pm**

Stonewall Ballrooms

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 26th _____ 12:00pm**

Stonewall Ballrooms

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 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.

Stonewall Lake Kayak Trip

Friday, October 25, 2024 8:00am-10:00am

Enjoy a day on the lake learning about the natural history of your surroundings. All will have to complete waivers at the pool shop downstairs. Wear shoes that will get wet and stay on your feet. Life jackets are enforced.



Dr. Bob Behling Memorial Geology Field Trip

Friday, October 25, 2024 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 Central WV. 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, and carry water and rain gear.



WV Save Our Streams (SOS) StreamLAB Water Quality Monitoring & Stream Ecology

Saturday, October 26, 2024 8:00am-11:00am

Carpool to an area stream! Teachers who complete the certification test and commit to monitoring a stream with students will receive a benthic macroinvertebrate sampling kit that includes a kick net, trays, magnicubes, and more. The kit will be delivered to their class during the first stream survey outing, which the WVSOS Coordinator will attend and assist teachers as they lead their initial survey with students. Come prepared for outside work with items such as a hat, loose fitting clothes, closed toed shoes such as sneakers, muck boots or waders, snacks, plenty of water, sunscreen and insect repellent. You may also need a pencil or pen and a small notebook.



WVSTA Leadership

West Virginia Science Teachers Association: 2024 Executive Board

President	Davita Melander
President-Elect	Angela McKeen
Immediate Past President	Josh Revels
Membership Vice President	Rachel Eades
Treasurer	Wayne Yonkelowitz
Secretary	Samantha Haught
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:

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

Conference Committee Members

Conference Chair	Angela McKeen
Program Coordinators	Josh Revels, Erika Klose, Rachel Eades, and Deb Hemler
Registration Coordinators	Deb Hemler, Josh Revels, Keirsten Reich
Speaker Coordinator	Davita Melander and Todd Ensign
Exhibitor Coordinators	Rachel Eades and Linda Fonner
Tour Coordinators	Angela McKeen and Josh Revels
Merchandise Coordinators	Wayne Yonkelowitz & Todd Ensign
Auction Coordinators	Jim and Patty Cozort
Hospitality Coordinators	Teresa Barton & Robin Sizemore
AV Coordinator	Todd Ensign
Additional Committee Members	Alicen Adkins, Megan Bennett, Mollie Craven, Bonnie Crites, & Nikki Moriarty

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.



Opening Session

Friday, October 25th, 10:30am –12:00pm
Stonewall Ballroom

Opening _____ Davita Melander
WVSTA President

Invited Announcements

State of Science Education in West Virginia _____ Rachel Eades
State Science Coordinator

Presidential Award for Excellence _____ Dr. Deb Hemler
in Math and Science Teaching *WV PAEMST Coordinator*

Introduction of Keynote Speaker _____ Davita Melander
WVSTA President

Keynote Speaker _____ Dr. Jordan Mader
University of Arkansas

Conference Announcements _____ Angela McKeen
WVSTA Conference Chair



Grand Banquet

Friday, October 26th, 6:30pm (doors open 6:15)
Stonewall Ballroom

Introductions _____ Davita Melander
WVSTA President

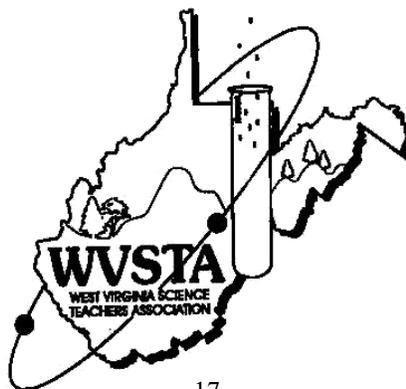
Invocation _____ Dr. Pat Obenauf ☺

Dinner _____ Buffet

Presentation of Awards _____ *see next pages*

Introduction of Keynote Speaker _____ Todd Ensign
*NASA IV&V ERC,
Program Manager*

Keynote Speaker _____ Dan Mantz
*Robotics Education &
Competition Foundation, CEO*



Special Recognition Awards

2024 Awards Ceremony

2023 Presidential Award for Excellence in Math and Science Teaching

Presenter:..... Deb Hemler
WV PAEMST Coordinator

Secondary Science State Finalists.....**Alicen Adkins**
Moorefield Middle School

Tina Cool
Preston High School

Dayna Juraschek
Jefferson High School

2024 Presidential Award for Excellence in Math and Science Teaching

Presenter:..... Deb Hemler
WV PAEMST Coordinator

Elementary Science State Finalists.....**Faith Harper**
Little Birch Elementary

Megan Lynch
Union Elementary

Heather Puglisi
Warwood Elementary

**Nominations are currently open for the 2025 Secondary Award Cycle
Please visit paemst.nsf.gov to nominate yourself or a worthy teacher.**



Special Recognition Awards (cont.)

2024 WV Outstanding Biology Teacher Award

Presenter: _____ Brian McNeel
WV Coordinator

WV OBT Awardee _____ No Applicants

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

2024 WV Outstanding Earth Science Teacher Award

Presenter: _____ Deb Hemler
NAGT ES

WV OEST Awardee _____ No Applicants

Please nominate a teacher: https://nagt.org/nagt/awards/oest_nomination_eastern.html

2024 Patricia Obenauf Scholarship

Presenter: _____ Deb Hemler
WVSTA Executive Dir.

Scholarship Recipient _____ Kathleen Lloyd
Poca Middle School

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.

PAEMST Awards

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	TBA
2021	TBA
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

2023	Mr. Robert Strong	2022	Dr. Todd Ensign
		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” 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.

President's Luncheon & Business Meeting

**Saturday, October 26th, 12:00pm- 1:30pm
Stonewall Ballroom**

Presider _____ **Davita Melander**
WVSTA President

Welcome

Introduction of Officers

Recognition of Conference Committee & Contributors

Lunch

WVSTA Business Meeting _____ **Davita Melander**
WVSTA President

New Business

Art Contest

Door Prizes



Friday October 25th, 8:00am-9:00am

Thinking in the Secondary Science Classroom

Stonewall Ballroom 1

Rachel Eades, *West Virginia Department of Education, Charleston, WV, reads@k12.wv.us*

Participants will receive a brief review of the three dimensions of science learning and how to implement them at the secondary level. In addition, attendees will be introduced to a free resource they can easily use to implement investigations with their students. They will also experience a new interactive thinking strategy as they collaboratively investigate a phenomenon.

Sweet Science: Using M&Ms to Understand Photosynthesis and Cellular Respiration

Maple

Teresa Barton, *Mercer County Schools (PikeView High), Princeton, WV, tbarton@k12.wv.us*

Dive into the world of cellular processes with a hands-on approach that makes the complex concepts of photosynthesis and cellular respiration both engaging and memorable! In this interactive session, educators will explore innovative strategies for teaching these fundamental biological processes using a fun and relatable tool-M&Ms.

Participants will engage in an activity designed to visually and physically represent the chemical reactions underlying photosynthesis and cellular respiration. By using M&Ms as atoms of molecules, students will gain a deeper understanding of how plants convert light energy into chemical energy and how cells break down that energy for various biological functions. Walk away with practical tips for integrating this activity into your curriculum and other extension ideas for further exploration.

Purposeful Tech Integration: Using EdTech to Enhance Science Learning

Pecan

Sophie Youngs, *Kami, Alderson, WV, sophie.youngs@kamiapp.com*

In this hands-on session, discover how to integrate technology into your science classroom to engage students, facilitate learning, and address West Virginia Science Standards. Explore the power of Kami for interactive activities and collaborative learning, harness the potential of AI tools for resource creation and personalized instruction, and learn strategies for streamlining your workflow to save time and focus on student success. Walk away with practical tips, ready-to-use resources, and the confidence to leverage technology to create a dynamic and impactful learning experience for your students.



Friday October 25th, 8:00am-9:00am (continued)

Tech Meets Science with MakeyMakey and Micro:bits

Sutton

Tiffany Pace, *Cross Lanes Elementary, Charleston, WV, tiffdp@hotmai.com*

Brandy Carroll, *Montrose and Richmond Elementary, Charleston, WV*

Get ready to learn about making connections with MakeyMakey! With this elementary hands-on science session, we will be learning about conductive and non-conductive items. In the first half of this session, we will experiment with all sorts of objects to find out what is conductive so you can start designing your own inventions. Connecting these different objects is going to be a fun, techy science experiment to explore!

But the fun doesn't stop there! For the second half of this session we will learn about animals and their habitats and then bring those animals to life with micro:bits! Not only will you learn how to create a 3-D animal and its habitat, you will bring that animal to life as you code a micro:bit using Makecode for your animal to respond to prey and predators. Don't miss these engaging tech meets science sessions!

CER: Wanna Fight About It?

Tygart

Mollie Craven, *Elkins High School, Elkins, WV, mollie.ferguson@k12.wv.us*

Dayna Juraschek, *Jefferson High School, Shenandoah Junction, WV, dejuraschek@k12.wv.us*

Claim, evidence, and reasoning are essential skills for our students to learn for science as well as for critically analyzing claims made by people on media outlets every day. Do your students struggle with using evidence and reasoning to support their claims? Then come visit us and let's fight it out! We'll use 3 games that you can use with your students to help them make connections with familiar topics to CER.

Spectra-cular Science

Summersville

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

Discover how to captivate your students and bring the fascinating world of light and spectra to life in the classroom. In this interactive session, "Spectra-cular Science," science educators will explore a range of demonstrations designed to enhance student understanding and enthusiasm for the topic. We will delve into color theory, types of spectra, and practical methods to model light's amplitude and wavelength, including blackbody diagrams. Attendees will witness live demonstrations and learn about both budget-friendly and more advanced, high-cost solutions for teaching light and spectra. Gain insights into integrating real-world data with affordable options, and explore more expensive tools that can offer additional depth to your demonstrations. Additionally, I will share spectral data collected by my astronomy club, offering a hands-on approach to data collection and analysis that educators can easily replicate. Join us to discover creative ways to make light and spectra a highlight of your science curriculum.

Friday October 25th, 8:00am-9:00am (continued)

Engaging Upward Bound Students in Atmospheric Physics

Potomac

Through NASA Goddard's Project Lifecycle and Total Participation Techniques

Gabriela Himmele, *West Virginia University, Morgantown, WV, gh00019@mix.wvu.edu*

This session will detail the integration of atmospheric physics into a summer educational program for West Virginia Upward Bound students, utilizing resources from NASA's Climate Change Research Initiative (CCRI) and adhering to the NASA Goddard Science Lifecycle framework. The program aimed to enhance students' understanding of atmospheric phenomena while fostering critical thinking and engagement through Total Participation Techniques (TPTs). Our instructional approach involved a blend of theoretical lessons and hands-on activities, enabling students to explore key concepts such as fluid dynamics, atmospheric circulation patterns, and space weather. The curriculum was structured according to the NASA Goddard Science Lifecycle and incorporated TPTs to ensure all students were actively engaged and contributing to discussions. This approach fostered a deeper understanding of complex topics by encouraging student interaction and collaboration. Participants will gain insights on how to incorporate NASA's Goddard Science Lifecycle into their lesson plans as well as how to make use of NASA's Earth Science resources for understanding climate change.

Friday October 25th, 9:15am-10:15am

Engaging Elementary Students in 3-D Science Learning

Stonewall Ballroom 1

Rachel Eades, *West Virginia Department of Education, Charleston, WV, reads@k12.wv.us*

Keisha Thompson, *West Virginia Department of Education, Charleston, WV, krunion@k12.wv.us*

Participants will receive a brief review of the three dimensions of science learning and how to implement them at the elementary level. Attendees will also be introduced to a free resource they can easily use to implement fun and engaging hands-on and collaborative investigations for their students. They will also try an entertaining and competitive activity that can be utilized with several standards.

National WWII STEM Innovations Lessons: Bubble Viewer (Elementary) and Blood in a Bag (Middle)

Stonewall Ballroom 2

Laura Bohrer, *Martinsburg South Middle School, Martinsburg, WV, lbohrer@k12.wv.us*

Jenni McClanahan, *Princeton Senior High, Mercer County, WV, jmccclanahan@k12.wv.us*

This hands-on session will take you through 2 National WWII STEM Innovations hands-on lessons. "Bubble Viewer" will show how the work of Dr. Katharine Blodgett during WWII led to her "invisible glass" invention and we will investigate electromagnetic waves in the form of light where you will investigate how refraction of the light can be used to estimate the thickness of bubbles. "Blood in a Bag" will show how WWII biologists solved the problem of wounded soldiers receiving the blood they needed on the battlefield quickly without refrigeration. This activity has students creating and identifying the components of a model of blood. All attendees will receive the STEM Innovations workbooks for their level of instruction.

Friday October 25th, 9:15am-10:15am (continued)

From Atoms to Oceans: Modeling the Properties of Water

Maple

Mark Arnholt, *3D Molecular Designs, Milwaukee, WI, mark.arnholt@3dmoleculardesigns.com*

"From Atoms to Oceans: Modeling the Properties of Water" is a dynamic workshop tailored for educators to explore the unique properties of water through the use of physical 3D models. This hands-on session will guide teachers in unraveling the complexities of water's states of matter and the various types of chemical bonding that give water its distinctive characteristics. Participants will construct and manipulate models to visualize molecular interactions, hydrogen bonding, and phase changes, deepening their comprehension of these fundamental concepts. The workshop aims to provide teachers with practical tools and innovative teaching strategies to effectively convey the molecular and macroscopic properties of water to their students. By engaging in this interactive learning experience, educators will enhance their ability to blend the fascinating world of chemistry and biology in their classrooms.

It's Phenomenal! Using Real-World Connections to Support Three Dimensional Learning

Pecan

Amanda Ansell, *SAVVAS, Charleston, WV, amanda.ansell@savvas.com*

What's so phenomenal about phenomena? Join the Savvas science team for an engaging, hands-on workshop as we explore the purpose of phenomena, the power of using it to drive your instruction, and the way it will support your students as they bring their own life experiences into your classroom. Attendees will leave with purposeful strategies they can replicate in their classrooms immediately.

WV Bridge Design and Build Contest

Sutton

Horng-Jyh Yang, *WVU TECH, Beckley, WV, hoyang@mail.wvu.edu*

West Virginia University Institute of Technology (WVU TECH), in partnership with the West Virginia Division of Highway (WVDOT), is set to host a transformative STEM-focused event aimed at inspiring and preparing the state's youth for careers in Science, Technology, Engineering, and Mathematics (STEM). This joint effort is designed to invigorate West Virginia's labor force by nurturing a new generation of STEM talent and encouraging them to pursue higher education in STEM fields.

What Percent of the Earth's surface can be used to produce food for our growing population?

Tygart

Debbie McKay, *HSTA through WVU at WPHS, Wheeling, WV, debmck59@gmail.com*

What percent of the Earth's surface can be used to produce food for our growing population? Human activities have increasingly threatened agricultural land and soil health. The change in temperature of the Earth's atmosphere due to global warming results in changing weather patterns that impact the Earth's surfaces and soil. Using an apple as a model of the Earth, we will see just how much soil is available to grow crops for human consumption and what we can do about it.

Friday October 25th, 9:15am-10:15am (continued)

Teach Smarter, Not Harder: AI Tools for Science Educators

Summersville

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

In this session, “Teach Smarter, Not Harder: AI Tools for Science Educators,” participants will explore innovative ways to boost student science literacy by leveraging artificial intelligence tools. We will delve into practical strategies for incorporating AI, including ChatGPT and MagicSchool AI, to streamline lesson planning, adapt existing materials, and tailor instruction to diverse learning needs. Attendees will gain hands-on experience in using these AI tools to create and modify lesson plans efficiently, making the planning process less time-consuming and more effective. The session aims to empower educators to spend more time engaging with students and less time on administrative tasks. By integrating AI into their teaching practices, educators will enhance their productivity and become more adept at utilizing technology to support personalized learning. Join us to discover how AI can transform your teaching experience and improve science literacy outcomes.

Math Matters in Blood Spatter

Potomac

Jason Gibbs, *June Harless Center, Huntington, WV, gibbs15@marshall.edu*

Engage in a hands-on blood spatter analysis lab, where participants apply mathematical concepts to real-world forensic scenarios, showcasing the practical relevance of mathematical skills. Using trigonometric principles, participants explore the relationships between angles, distances, and heights to recreate the three-dimensional path of blood droplets as they experience how forensic scientists calculate impact angles, origin points, and trajectories as they analyze and reconstruct events.

Behavioral Activation Meets STEAM: Enhancing Student Mental Health

Greenbrier

Angela McDaniel, *STEAM TAC, Morgantown, WV, amcdani@k12.wv.us*

Melissa Bane, *STEAM TAC, Morgantown, WV, mmaher2@mail.wvu.edu*

This session will equip educators with practical strategies to integrate STEAM and active learning with Behavioral Activation techniques to enhance student mental health and academic performance. Participants will explore the theory behind behavioral activation, understand its impact on alleviating symptoms of depression and anxiety, and learn how hands-on STEAM activities can be an effective tool for this approach.



Friday, October 25th, 10:30am-12:00pm

Opening Session

Stonewall Ballrooms

Friday, October 25th, 12:00pm-12:30pm Forums!

Just after the opening session and before your lunch at Stillwaters, 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
WV Climate Change PD
2025 Conference Planning
Presidential Awards
Elementary Science
WV Science & Engineering Fair
Science Book Studies

Robert Strong
Sandra Fallon
Angela McKeen
Alicen Adkins
Tiffany Pace
Rachel Eades
Davita Melander



Friday, October 25th, 1:30pm-1:55pm

**National WWII Museum STEM Innovations
Summer Teacher Workshop**

Stonewall Ballroom 2

Laura Bohrer, *Martinsburg South Middle School, Martinsburg, WV, lbohrer@k12.wv.us*

Jenni McClanahan, *Princeton Senior High, Mercer County, WV, jmccclanahan@k12.wv.us*

When teachers teach across curriculums, students gain a deeper understanding of the content. What better way to integrate history into STEM education than by implementing STEM lessons developed by the National WWII Museum in New Orleans. Come learn about the STEM Innovations Teacher Summer Workshop and learn how to integrate the history of WWII into your STEM lessons. This is an all-expense paid professional development opportunity that by the end of the week will give educators a deeper understanding of WWII and will be able to implement the use of the STEM Innovations Curriculum into their own classrooms. There is something for everyone at every level (elementary, middle, and high school). This session will be information about the program presented by 2 teachers that just came back from the workshop this past summer with an opportunity to answer any questions you may have on the program as well.

Problems with the Metric System (part 1)

Sutton

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

The Intended Audience for this presentation is any Educator (grades K-College) teaching or using Science or Measurement.

Join Robert for a reflective look at the English System of Measurement, its pros and cons and why at first glance the International System of Units (SI) more commonly known as the Metric System has become the international standard for measurement.

Follow an educator's story of looking deeply into the Metric System and finding that there are numerous inherent flaws in its basic design, its definitions, and fundamentally its usefulness as a set of tools for a citizen scientist, educator, and fledgling science writer.

Go Global with Science!

Tygart

Tiffany Pace, *Cross Lanes Elementary, Charleston, West Virginia, tiffdpace@hotmail.com*

Would you like to travel around the world and learn about science for free? Then get ready because in this session I will share three amazing science opportunities for teachers in which you will travel to destinations to ignite your passion for bringing global education to your classroom. Each of these life-changing fellowships will help you and your students to better understand science within our ever-changing world. So what are you waiting for? Let the adventures begin!



Friday, October 25th, 1:30pm-1:55pm (continued)

Science and Technology Applied to Radio Signals

Greenbrier

John Makous, *Concord University, Athens, WV, jmakous@concord.edu*

This talk will provide information about a summer workshop that is being offered at Concord University in Athens, WV during the week of July 14-18, 2025. This one-week workshop will provide training on how to build and operate a small, very affordable radio horn telescope for use in the classroom as well as in research projects. These radio horn telescopes are designed for detecting neutral hydrogen (HI) in the Milky Way Galaxy and are ideal for providing hands-on experience for students in physics and astronomy classes. This program is open to high school and college educators in grades 9-14.

Friday, October 25th, 1:30pm-2:30pm

The Clay Center: A STEAM Resource for Every Community

Stonewall Ballroom 1

Megan Thornhill, *The Clay Center for Arts & Sciences, Charleston, WV, mthornhill@theclaycenter.org*

This session will explore the critical role of play and discovery in fostering a deep understanding of scientific concepts. Participants will engage in hands-on activities that illustrate how curiosity-driven exploration enhances student learning and retention. We'll discuss strategies to integrate play into your curriculum, and share resources the Clay Center can offer to promote critical thinking and creativity in (and out of) the classroom. Come ready to play, share, and discover while learning about the amazing resources available at the Clay Center for Arts & Sciences.

First Steps with Sense-Making and Models

Maple

Kip Bisignano, *School Specialty, Madera, CA, kip.bisignano@schoolspecialty.com*

This workshop explores the critical role of sense-making in science education, emphasizing how models facilitate students' understanding of complex scientific concepts. Participants will engage in hands-on activities that demonstrate how to leverage models to enhance students' cognitive frameworks. We will discuss strategies for guiding students through the sense-making process, enabling them to connect prior knowledge with new information, and fostering deeper comprehension.



Friday, October 25th, 1:30pm-2:30pm (continued)

High Schoolers Engaging Elementary Students in STEM

Pecan

Chuck Trautwein, *Garrett County Public Schools, MD,*

chuck.trautwein@garrettcounty schools.org

Lorie Burdock, *Garrett County Public Schools, MD, lorie.burdock@garrettcounty schools.org*

Mikayla Frazee, *Garrett County Public Schools, MD, Student*

Eden Rankin, *Garrett County Public Schools, MD, Student*

Whether it's VEX, SkillsUSA or FIRST, these youth robotics programs instill a passion for STEM in students. Garrett County Public Schools (Maryland) leverages this passion by allowing its high school robotics students to teach highly engaging, standards-based, and scalable lessons in grades 3 through 6 - making a systemic impact. These lessons produce many "ah-ha" moments and help ensure that elementary-aged students develop the skills needed for their success in STEM. This session will feature high school students sharing about their lessons and the "gadgets" they use to teach including a LEGO Top Spinner, a "math-magic" trick revealing the importance of binary numbers, a set of LEGO calipers that exactly determine the Golden Ratio and homemade "Makey Makeys" AND participants will get all these "gadgets" to take home! This program has been a huge "win-win" success and our students' passion is contagious. They will inspire you with the difference they make!

Modeling in Science/STEAM: Showing Evolving Thinking

Summersville

Jason Gibbs, *June Harless Center, Huntington, WV, gibbs15@marshall.edu*

In traditional educational settings, students often mimic pre-existing models, reflecting completed thinking rather than engaging in active knowledge construction. Experience strategies for: facilitating model development and evolution in response to new evidence and knowledge; depicting and explaining not only the 'what' but also the 'how and why' of a phenomenon across a unit; and creating opportunities for students to evaluate their own thinking as well as the thinking of their classmates. Learn practical techniques for nurturing students' ability to create dynamic models reflecting their evolving understanding in an environment that embraces continuous learning, adaptation, and peer feedback.

Hosting a Community Science Night

Potomac

Alicen Adkins, *Hardy County Schools, WV, alicen.adkins@k12.wv.us*

Bonnie Crites, *Hardy County Schools, WV, bonnie.crites@k12.wv.us*

What better way to bring together parents/guardians, school staff, students, and community members than with an event full of fun experiments?! At this session you will receive all the information needed to host a community science night including an entire set of instructions for 12 hands-on experiments that can easily be performed in an event setting. (Materials not provided). During the session you will get to participate in 3 hands-on activities including holding fire in your hands!

Friday, October 25th, 2:05pm-2:30pm

Science Resources from NAEP

Stonewall Ballroom 2

Vickie Baker, *West Virginia Department of Education, Charleston, WV, vbaker@k12.wv.us*

This session will provide an overview of resources available from the administration of the National Assessment of Educational Progress (NAEP). Your students take the assessment. You and your principal complete questionnaires related to the assessment. Your tax dollars pay for the question development. Where can you find these resources? How can you use them? Again, you have already paid for them, so why not use them?

The Need for a Universal Metric System (part 2)

Sutton

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

The Intended Audience for this presentation is any Educator (grades K-College) teaching or using Science or Measurement.

Join Robert for the second half of the presentation “Problems With the Metric System (part 1)” the present International System of Units (SI) more commonly known as the Metric System.

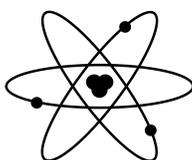
This second half of the story follows an educator's need to improve and replace an apparently flawed International System of Units (SI) or Metric System with a “better” more “useful” Universal Metric System to be used as a set of tools for a citizen scientist, educator, and fledgling science writer. Any feedback will be appreciated.

Monday Night Science

Tygart

Nathan Sams, *National Youth Science Academy, Davis, WV, nathan.sams@nysacademy.org*

Thanks to the generous support of the Claude Worthington Benedum Foundation, the National Youth Science Academy is now in its second year of hosting Monday Night Science. The program is based on the dream of Dennis Schatz, past president of the National Science Teaching Association, and aims to remove barriers while increasing belongingness, access, engagement, and STEAM-identity for rural WV families. Each event includes twice-monthly holistic STEAM programming with dinners sourced from local farms, followed by presentations and hands-on activities with local STEAM practitioners, plus STEAM kits to take home for continued engagement. Events are co-created with our participants and partners at the Tucker County Family Resource Network, and topics are chosen based on their feedback, interests, and experiences. Attendees will gain an understanding of the program, see highlights from our first year, learn about preliminary results from our work, and discuss potential applications of the program in other locations.



Friday, October 25th, 2:05pm-2:30pm (continued)

**Unlocking Cyber Education: Introducing Cyber.org's
Free K-12 Curriculum for the Classroom**

Greenbrier

Vathani Amarasingham, WVSU Extension Services, Charleston, WV,
vathani.am@wvstateu.edu

Cybersecurity is a growing priority for education, and Cyber.org offers a comprehensive, free curriculum designed for K-12 classrooms. In this presentation, we will explore how educators can access and implement Cyber.org's resources to introduce students to the fundamentals of cybersecurity, coding, and digital literacy. The curriculum covers a wide range of grade levels, offering age-appropriate, hands-on activities and lessons that align with national standards. Whether you're a STEM teacher or a general educator looking to integrate more technology in your lessons, Cyber.org's resources can support student engagement and help build essential skills for the future. The presentation will also provide a step-by-step guide on how to navigate the Cyber.org platform and access resources. Join us in empowering the next generation of digital citizens.

Friday, October 25th, 2:45pm - 3:45pm

**A Solar Eclipse Study & Implications of the Technology
for STEM Learning**

Stonewall Ballroom 1

Ashley N. Kooken, *Glennville State University, Glennville, West Virginia,*
ashley.kooken@glennville.edu

Connor Bell, *Pre-service Teacher, Bell.ConnorS@gsu.glennville.edu*

Samantha Casto, *Pre-service Teacher, Casto.SamanthaA@gsu.glennville.edu*

Jacey Collins, *Pre-service Teacher, Collins.JaceyB@gsu.glennville.edu*

Thomas Setzer, *Pre-service Teacher, Setzer.ThomasL@gsu.glennville.edu*

Joe Evans, *Professor Emeritus, Glennville State University, Joe.Evans@glennville.edu*

On April 8, 2024, Glennville State University students (Connor Bell, Samantha Casto, Jacey Collins, and Thomas Setzer) in collaboration with Crellin Elementary School 5th grade students and teachers conducted a study of the solar eclipse using a Spotter Scope, electronic balance, PASCO GLX with temperature and light sensors, and a light/sound device. These students along with their professors (Professor Ashley Kooken and Professor Emeritus Joe Evans) will present a Share-a-thon; the students will not only share the data they collected that day, but more importantly share how the technology can be used to support students' science learning all year round.

Hands-on Wind Energy Lessons – What a Breeze!

Stonewall Ballroom 2

Wayne Yonkelowitz, *The NEED Project, Manassas, VA, info@need.org*

Linda Fonner, *NEED Facilitator*

Come take a hands-on look at generating electricity from wind. Activities will explore measuring the wind, using wind turbines to do work, and the engineering challenges of building wind turbines. NEED lessons are available for free, align to state standards, and can be easily differentiated.

Friday, October 25th, 2:45 - 3:45pm (continued)

Uncooking the Egg

Maple

Mark Arnholt, *3D Molecular Designs, Milwaukee, WI, mark.arnholt@3dmoleculardesigns.com*

What happens when you cook an egg? Is it possible to un-cook it? Uncooking the Egg features hands-on modeling to investigate protein folding and denaturation. This immersive workshop is designed for educators to explore the fundamental principles of protein structure and function. Participants will engage in hands-on activities using physical models to simulate the complex processes of protein folding and denaturation. The workshop aims to deepen teachers' understanding of these biological concepts through interactive and visual learning techniques. By manipulating models that represent proteins and observing their responses to various environmental conditions, educators will gain insights into the intricate rules governing protein behavior. This experiential approach will equip teachers with innovative strategies to enhance their science curriculum, making abstract biochemical processes accessible and engaging for students. Join us to unravel the mysteries of proteins and bring the dynamic world of molecular biology to life in your classroom.

How to Start a FIRST Robotics Team (FLL-E, FLL-C, FTC)

Pecan

Alicen Adkins, *Hardy County Schools, WV, alicen.adkins@k12.wv.us*

Bonnie Crites, *Hardy County Schools, WV, bonnie.crites@k12.wv.us*

Robots Robots Robots! Interested in starting a robotics team but don't know where to start? Come check out our hands-on session where you will be introduced to FIRST Robotics Programs, available for 1st-12th grades! We will walk you through FLL-Explore (elementary), FLL-Challenge (upper elementary/middle) and FIRST Tech Challenge (middle/high school). We will share all the tips and tricks needed to setup a team, host practices, secure funding, perform outreach, develop a logistical plan, and more! Additionally, robots and a sample game will be setup for each level of competition. You will get the opportunity to code the robots and get familiar with the robot game for your programmatic level. Teams can be created with or without school/district affiliation, so anyone is welcome! Come check it out and see if it's a good fit for you!

Bringing Electron Microscopy to any Classroom, Local or Remote

Sutton

Steve Kuehn, *Concord University, Athens, West Virginia, skuehn@concord.edu*

Electron microscopes can provide an excellent and accessible window into the world of the very small, appropriate for kids and adults alike. Tiny crystals, bits of a feather, or even just an average grain of sand could be the entry point to this micro-world. It's not just about what something tiny looks like close-up either. All sorts of "what is it made of" questions can also be explored as most elements of the periodic table can be identified and quantified using X-rays. All of this can be done remotely from almost any classroom or Zoom connection, and your kids can even take control. Potential topics include biology, chemistry, physics, earth sciences, forensics, and yes art too. Take a micro trip with the recently enhanced micro-analytical lab at Concord U., and share ideas about what your kids could do with this.

Friday, October 25th, 2:45 - 3:45pm (continued)

"I've Got This Kid...": How We Made Our Village

Tygart

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

Joe Gibson, *George Washington HS, Charleston, WV*, scijoe63@gmail.com

We've all had that "one student", or that "one situation" that we can't seem to figure out. We've all heard "it takes a village" and that education works best when teachers work together. But how does that look in a high school science department where we all teach different content? Come join us for this interactive session and see how a high school Earth Science newbie and a high school Biology veteran built a cross curricular and interpersonal strategic program to increase student success when transitioning between science disciplines. Ideal for 9th/10th grade teachers, but beneficial for all.

Processes That Shape the Earth for Kids

Summersville

Donna Cyr, *Taylor County, Farmington, West Virginia*, donna.cyr@k12.wv.us

We will explore agents of weathering and erosion of the earth from rain, wind, ice and vegetation. We will use hands-on activities to investigate these agents in ways that are engaging and easy for our elementary students.

Up and Move, Review

Potomac

Eric Kincaid, *Monongalia County Schools, Morgantown, WV*, ekincaid@k12.wv.us

In this session, the importance of movement in the science classroom will be described. Participants will be shown, and take part in, several strategies to get students up and moving while still engaged with the content. This fun, interactive session is useful for all grade levels and is applicable to any content area.

The Buzz about Beekeeping

Greenbrier

Karen Davis, *Eastwood Elementary School, Morgantown, WV*, karen.l.davis@k12.wv.us

Learn about the new era of beekeeping. Teach students an appreciation for the honey bee and encourage them to be stewards of our pollinators. Bee amazed by the wonders of these insects and how you can become a beekeeper yourself.

Friday, October 25th, 4:00-5:00pm

Neuron Signal Central, STEAM TAC

Maple

Erica Skorlinski, *STEAM TAC, Morgantown, WV*, erica.skorlinski@k12.wv.us

Cliff Sullivan, *STEAM TAC, Morgantown, WV*, clifford.sullivan@mail.wvu.edu

"Signal Central" is an engaging and interactive "real-world" STEAM lesson. It combines hands-on learning with computer science to teach participants about how neurons send and receive signals. In this activity, participants will use micro:bits to mimic neurons and other communication devices to allow students to send and receive coded signals.

This lesson fosters critical thinking, problem-solving, and teamwork as participants work collaboratively (just as students would) to complete tasks to decode signals.

Friday, October 25th, 4:00-5:00pm (continued)

Sounds Good to Me

Pecan

Mark Lynch, *Lewis County Schools , Buckhannon , WV, jmark.lynch@gmail.com*

Participants will explore sound waves through hands-on tracing of waveforms generated with tuning forks. They will observe demonstrations of string vibration visually displayed with a stroboscope on acoustic musical instruments. They will be instructed on the making of a device capable of projecting a laser generated reflected wave pattern. At the conclusion of the workshop there will be a short acoustic music presentation with invited guests.

Introducing...The Nature of Science and the Scientific Method

Sutton

Michele Adams, *Berkeley County Schools, Martinsburg , WV, scienceteacher68@gmail.com*

This hands-on session is intended to introduce students to the understanding that scientific knowledge is subject to change based on new evidence, and that the scientific method involves establishing facts through testing and experimentation. It will provide up to 6 fun and engaging activities that have withstood the test of time that can be applied in classrooms, particularly grades 3-8.

Lift Learning: Exploring Levers with WVU Storybook STEM

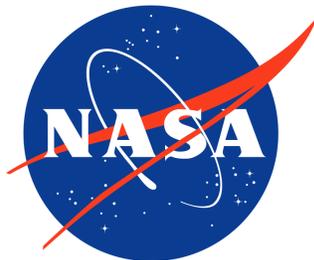
Tygart

Emma Gardner, *WVU Extension, Weston, WV, emgardner@mail.wvu.edu*

Suzanne McDonald, *WVU Extension, smcdonal@mail.wvu.edu*

Dr. Jen Robertson-Honecker, *WVU Extension, jen.robertson@mail.wvu.edu*

Join WVU Extension STEM Specialists for an engaging session where educators will gain access to standards-aligned Storybook STEM lessons for elementary and middle school classrooms. Attendees will also participate in a hands-on example levers lesson, which includes a class set of "Lifting with Levers" lessons, materials and storybooks to use and share in their schools. Since 2021, WVU STEMCARE has partnered with Energy Express, a literacy initiative at WVU, to integrate STEM lessons with storybooks in the Storybook STEM program. WVU Storybook STEM, developed in collaboration with the WVU 4-H STEM Working Group, enhances Energy Express—a 30-year award-winning summer reading and nutrition program serving around 3,000 children annually in West Virginia's rural and low-income communities. By pairing hands-on STEM lessons with weekly book selections, WVU Storybook STEM helps combat the "summer slide" and fosters an engaging learning environment where students maintain or improve their reading levels.



Friday, October 25th, 4:00-5:00pm (continued)

EGeoS: Exploring Geosciences Solutions

Summersville

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

Amy Hessel, *West Virginia University, Morgantown, WV, amy.hessel@mail.wvu.edu*

Ethan Backus, *Braxton County High School*, **Marjorie Boyd**, *Brooke High School*, **Adam Hamrick**, *United High School*, **Alyssa Hanna**, *Tucker County High School*, and **Peggy Moore**, *Pike View High School*

Exploring Geosciences Solutions (EGeoS), a NSF-funded project at WVU is building a collection of learning modules for high school STEM courses that investigate potential solutions to energy and climate challenges in the Appalachian region. EGeoS modules are aligned to a range of West Virginia science standards in Biology, Chemistry, Physics, Physical Science, and Earth and Space Science and blend of self-guided and self-paced learning with hands-on classroom activities and working with real world data. In this session we will be sharing 2 modules: 2) “Controlling Earth’s Temperature” in which various gasses are tested for their infrared absorbing capacity, and 3) “White Gold (Lithium) in Appalachia”, in which a variety of solutions are evaluated as a potential source of lithium needed for battery technology. WVU Faculty in geosciences are joined by WV Science Teachers who co-developed modules. We seek input from High School educators willing to implement modules.

Classroom Engagement Strategies

Potomac

Eric Kincaid, *Monongalia County Schools, Morgantown, WV, ekincaid@k12.wv.us*

In this session, attendees will participate in several strategies that will increase student engagement in the grades 5-12 science classroom. Many of these techniques can be done with little to no advanced preparation but can have a huge impact on student learning. Opportunities will also be given for participants to share their own methods of getting, and keeping, students active and engaged in their lessons.

Launch Your Students’ Imagination with the American Rocketry Challenge!

Greenbrier

Todd Ensign, *NASA IV&V Education Resource Center, Fairmont, WV, tensign@fairmontstate.edu*

The American Rocketry Challenge (ARC) is the world’s largest rocket contest with nearly 5,000 students nationwide competing each year. The contest gives middle and high school students the opportunity to design, build, and launch model rockets and hands-on experience solving engineering problems. Join us and learn how to bring your class to the NASA Education Resource Center for a free student workshop on model rocketry, how to register and start an ARC team, and how to use 3D printing, laser cutting, and software modeling to design and test rockets. Beware, this IS Rocket Science!

Saturday, October 26th, 8:30am–8:55am

Introduction to VEX Robotics Programs

Pecan

John Holbrook, *NASA IV&V Education Resource Center, Fairmont, WV,*
john.holbrook@fairmontstate.edu

Todd Ensign, *Program Manager, NASA IV&V Education Resource Center*

Kaitlyn Nyce, *AmeriCorps Member, NASA IV&V Education Resource Center*

Through its WV Robotics Alliance project, the NASA IV&V 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 the VEX family of robotics competition programs, which are among the most popular robotics programs in West Virginia and worldwide.

Bioplastics in the Secondary Classroom

Sutton

Megan Bennett, *Paw Paw High School, Paw Paw, WV, megan.bradfield@k12.wv.us*

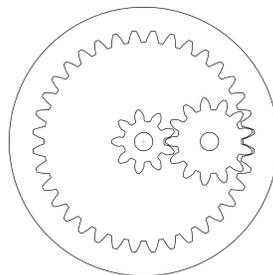
In a world full of plastic, use this bioplastics lesson/lab to illustrate to students the definitions of bioplastics, where plastics come from and current research into bioplastic alternatives. Students use basic recipes to make examples of bioplastics and then make their own recipes to simulate a real-world product that could be replaced with a bioplastic. This lab can also be used to touch on standards related to natural vs synthetic materials. Past student examples of bioplastics will be presented.

Resources for Teaching Climate Science & Climate Communications in WV Classrooms

Tygart

Sandra Fallon, *West Virginia Climate Change Professional Development Project, Morgantown, WV, sfallon608@gmail.com*

Join this informational session to browse resources and activities available for teaching climate science and climate communications in your middle or high school classrooms. The resources are shared via the West Virginia Climate Change Professional Development (WVCCPD) Project website and include Climate Change Lesson Plans that incorporate WV educational standards and were developed by and for West Virginia teachers. The session will also share several teachers' experiences and perspectives about using the resources with their students. WVCCPD Team Leader Sandra Fallon, a media and education specialist and climate change activist who managed WVCCPD's Public Service Announcement (PSA) contest that broadcasts WV students' winning Climate Change PSAs throughout the state, will facilitate the session.



Saturday, October 26th, 8:30am–8:55am (continued)

Join the Natural Science Showdown Competition!

Summersville

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

Matt Scanlon, *Professor of Chemistry, Fairmont State University, Fairmont, WV*

This informational session will provide details about the 2025 Natural Science Showdown competition on the main campus of Fairmont State University on March 7. We encourage schools to create as many as two teams (4 high school students per team) to participate in the biology, chemistry, forensics, and geoscience/physics challenges. The team members on the winning team will be offered \$1,000 scholarships. Please stop by to see how you and your students can get involved!

Saturday, October 26th, 8:30am–9:30am

Elementary Share-A-Thon

Stonewall Ballroom 1

Josh Revels, *NASA IV&V ERC/ Fairmont State University, jrevels@fairmontstate.edu*

Joyce Bryant, *Holden Central Elementary*, **Kathy Jacquez**, *CATS Cadre*, **Ray Garton**, *Prehistoric Planet*, **Thelma Grogg**, *Frankfort Middle School*, **Faith Hammerbeck**, *Buckhannon Academy Elementary*, **Carolyn Honsaker**, *Blackshere Elementary*, **Rachel Kellar**, *East Dale Elementary*, **Ashley McMillen**, *West Preston School*, **Madalyn Pepple**, *Birch River Elementary*, **Heather Puglisi**, *Warwood School*, **Jennifer Randolph**, *Simpson Elementary*, **Amelia Reaser**, *Fairmont State University*, **Holly Ridpath**, *Ronceverte Elementary*, **Allison Spangler-Hauryski**, *Valley View Elementary*, **Debra Wilson**, *East Dale Elementary*, **Nicole Wolfe**, *Ronceverte Elementary*

Scholars from both the 2024 Elementary Ambassador and 2024 Elementary Earth & Space Science Literacy Programs will lead you through an exploration of a suite of elementary grade level specific lessons. Each of their lessons have been designed to include a children's book to help teach science. Posters will include many disciplines of science!

Rock and Fossil ID with WVGES

Maple

John Tudek, *West Virginia Geological and Economic Survey, Morgantown, WV, jtudek@wvgs.wvnet.edu*

Elizabeth Rhenberg, *West Virginia Geological and Economic Survey, Morgantown, WV, erhenberg@wvgs.wvnet.edu*

Have a rock, mineral or fossil and you don't know what it is? The geologists from the West Virginia Geological Survey will be available to answer any questions about them (or geology in general).

Saturday, October 26th, 8:30am–9:30am (continued)

Sparking Deeper Learning to Solve Real World Problems

Potomac

Jason Gibbs, *June Harless Center, Huntington, WV, gibbs15@marshall.edu*

Explore how applying a transdisciplinary design thinking framework makes learning more active and engaging by creating a culture of problem finding and solving. Discover strategies to promote deeper learning where students think critically, creatively, and empathetically; ultimately preparing them to tackle real-world challenges with innovative solutions. Emphasizing not just knowledge acquisition, but its meaningful application, this approach fosters intellectual and personal growth by promoting mastery of core content, effective collaboration, and self-directed learning. Empower your students to realize they can make an immediate impact in their community and ultimately leave their world a little better than they found it.

Fundamentals of Forensic Photography Part I

Greenbrier

Roger Jefferys, *West Virginia University, Morgantown, WV, rjeffery@mail.wvu.edu*

This workshop will be the first of a three part series covering the fundamentals of forensic photography. Part I of the series will focus on understanding how a digital single lens reflex camera (DSLR) functions including a discussion of its many settings such as f/stop, shutter speed, and ISO.

Saturday, October 26th, 9:05am–9:30am

Take flight with the Aerial Drone Competition

Pecan

John Holbrook, *NASA IV&V Education Resource Center, Fairmont, WV, john.holbrook@fairmontstate.edu*

Todd Ensign, *Program Manager, NASA IV&V Education Resource Center*

Kaitlyn Nyce, *AmeriCorps Member, NASA IV&V Education Resource Center*

Through its WV Robotics Alliance project, the NASA IV&V 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 the REC Foundation Aerial Drone Competition, one of the state's fastest-growing programs accessible to students and educators of all experience levels at a low cost.



Saturday, October 26th, 9:05am–9:30am (continued)

Embracing a Non-Traditional Teaching Background

Sutton

Ethan Backus, *Braxton County High School, Sutton, WV, ethan.backus@k12.wv.us*

Clifton Long, *Braxton County High School, Sutton, WV, clifton.long@k12.wv.us*

In classrooms today, it is becoming more and more common to find educators that have a non-traditional teaching background (i.e., teaching as a second career, alternative certification). While these educators can potentially face steep learning curves in education theory, curriculum design, and teaching methods, they have knowledge and experiences that many traditionally trained educators do not. These teachers are often exposed to different courses during college, have real life experience in the fields they are teaching, and have a unique perspective on what employers are looking for. This session looks at exploring how to embrace a non-traditional teaching background to enhance the learning experience for students and to give students a different perspective on what they are learning. The session looks to use examples from the presenters' own non-education related professional experiences to encourage other non-traditional teachers to embrace their unique positions.

Resources for Teaching Climate Science & Climate Communications in WV Classrooms

Tygart

Sandra Fallon, *West Virginia Climate Change Professional Development Project, Morgantown, WV, sfallon608@gmail.com*

Join this informational session to browse resources and activities available for teaching climate science and climate communications in your middle or high school classrooms. The resources are shared via the West Virginia Climate Change Professional Development (WVCCPD) Project website and include Climate Change Lesson Plans that incorporate WV educational standards and were developed by and for West Virginia teachers. The session will also share several teachers' experiences and perspectives about using the resources with their students. WVCCPD Team Leader Sandra Fallon, a media and education specialist and climate change activist who managed WVCCPD's Public Service Announcement (PSA) contest that broadcasts WV students' winning Climate Change PSAs throughout the state, will facilitate the session.

Forensics Share-a-Thon

Summersville

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

Tina Cool, *Preston High School, tcool@k12.wv.us*

Come share your forensics ideas with others. Come prepared with handouts and demos if at all possible!



Saturday, October 26th, 9:45am–10:45am

Teaching Elementary School Physics with a metal Slinky® Toy **Stonewall Ballroom 1**
Robert E. Strong, *SMART-Center, Inc., Wheeling, West Virginia, robert@smartcenter.org*

The Intended Audience for this presentation is for the Elementary School educator (grades K-5) teaching principles of Physics.

Join Robert for a fast-paced, idea-filled, interactive, hands-on conversation for bringing multiple Physics principles to your Elementary school students in a simple and fun-filled way. Robert will lead teachers through multiple field-tested, hands-on models for the demonstration, experimentation, and understanding of the principles of Physics in the Elementary School classroom using a metal Slinky® Toy.

Observation Earth **Stonewall Ballroom 2**
Jackie Shia, *Challenger Learning Center, Wheeling, WV, jshia@wheeling.edu*

Observation Earth - Earth-monitoring sensors on the International Space Station are outdated and need to be replaced with new, state-of-the-art hardware. Today you will work together to capture a cargo craft using a robotic arm, monitor astronauts during a spacewalk as they install the new sensors, and analyze data from Earth-monitoring satellites. The new sensors will collect data on Earth processes and events taking place on our planet.

Join me to be immersed in our new distance learning sim Observation Earth and see how your students could enjoy a program that can be brought right into your classroom. This program can also accommodate students that may not be in the classroom. We can have students in multiple locations join in the program.

Using Gizmos with Intention 24/7 **Maple**
Dustin Lackey, *ExploreLearning, Mechanicsville, VA, dustin.lackey@explorellearning.com*

Everyday events make us wonder. Some events are easily explained, while others cannot. When these events are examined and tested through online simulations, they give students an opportunity to think. Why do some objects float and others sink? What is the difference between a solar eclipse and a lunar eclipse and how often does that happen? Would you rather have 1/3 or 2/8's of a candy bar? Learn how to use online simulations and help students dig deeper and get inspired by these and other science events.

Are you Moody **Pecan**
Michelle Grooms, *Texas Instruments, Powell, OH, mgrooms@ti.com*

We will bring science and coding together as participants learn to do some basic coding (no experience necessary) while developing a mood ring! The science of color mixing is explored while determining the right body temperature thresholds. Is fuchsia flirty? Should green be groovy? It's up to you!

Saturday, October 26th, 9:45am–10:45am (continued)

Science is Lit!

Sutton

Keisha Thompson, *West Virginia Department of Education, Charleston, WV*,
krunion@k12.wv.us

This session will examine the 5E model of instruction and how literacy and science go hand in hand in the elementary classroom. Participants will see a partial model lesson and discuss the resources used during the model lesson.

Show Me the Evidence!

Tygart

Jill Lemon, *Braxton County High School, Sutton, WV*, *jlemon@k12.wv.us*
Shawn Crow, *Braxton County High School, Sutton, WV*, *scrow@k12.wv.us*

Teaching students to make sound, informed decisions and reach conclusions from evidence can be easier than you think. This hands-on session will model how to get students to consistently collect data, create graphs, and analyze graphical information to draw evidence-based conclusions. Join us as we do a science experiment and show how lab reports can be used to increase test scores by bridging concepts between the classroom and summative assessments. Our concept can be applied to any grade level and across content areas

Studying Motion Using Graphs

Summersville

April Townsend, *Fairmont State University, Fairmont, WV*, *april.townsend@fairmontstate.edu*

Graphical representations of motion can help students visualize and better understand the relationships between the physical kinematic quantities of position, velocity, and acceleration. This session will demonstrate a physics lab wherein students analyze the kinematic graphs produced by a moving cart and discover the relationships between position-time graphs, velocity-time graphs, and acceleration-time graphs. The lab allows students to learn physics principles through a hands-on process as well as practice important skills including reading graphs, calculating slopes of lines, and error analysis. Participants should bring their laptops if possible.

From Tears to Cheers: Integrating Technology & STEM in a Kindergarten Classroom

Potomac

Holly Cain, *Wetzel County Schools, New Martinsville, WV*, *hcain@k12.wv.us*

The importance of a diverse STEM Education grows more apparent every year, but implementing technology and STEM at the kindergarten level presents unique challenges. For example, how can students enter a username and password when they do not even recognize letters and numbers? After a year of experiencing student tears whenever doing anything associated with technology, one kindergarten teacher paired up with the School Technology Integration Specialist to collaborate on ways they could incorporate technology and STEM without the tears. Emphasis was placed on addressing technology standards and to combine that with lessons that would be engaging and fun! Particular care was taken to help students become independent users of technology and improve their critical thinking. This session will outline the year-long journey of lessons and adaptations that took the technology in one kindergarten classroom from a year of tears to a year of cheers!

Saturday, October 26th, 9:45am–10:45am (continued)

Fundamentals of Forensic Photography Part II

Greenbrier

Roger Jefferys, *West Virginia University, Morgantown, WV, rjeffery@mail.wvu.edu*

This workshop will be the second of a three part series covering the fundamentals of forensic photography. Part II of the series will focus on exposure concepts. Specific topics to be discussed include concepts such as exposure modes, metering modes, white balance, and filters.

Saturday, October 26th, 11:00am-12:00pm

Bonding with Friends!

Maple

Josh Revels, *NASA IV&V ERC/ Fairmont State University, Fairmont, WV, jrevels@fairmontstate.edu*

In September, the WV Elementary Science Webinar focused on 5th grade content standards involving both The Law of Conservation of Matter (S.5.3) and modeling molecules and reactions (S.5.2). These lessons include using the book series Bonding with Friends Books, which is designed for Elementary students and comes with coloring pages. Shared resources will include addition and subtraction worksheets for the mass of reactants and products. Session focuses on participating in one of the hands-on demonstrations with chemical reactions. Safety glasses will be provided and expected to be worn during the session.

Unlocking Comprehension: Reading Strategies for the Science Classroom

Pecan

Sophie Youngs, *Kami, Alderson, WV, sophie.youngs@kamiapp.com*

Secondary Science Teachers (grades 6-12)

Description: Science textbooks and articles can be challenging for students. This session will explore practical reading strategies teachers can implement to help students improve their reading comprehension in science. We'll discuss pre-reading activities, active reading techniques, and post-reading strategies that promote deeper understanding and retention. Teachers will leave with a toolkit of research-backed reading strategies they can use immediately in their classrooms to support all learners.

Going beyond Kinetic and Gravitational Energy

Sutton

Vincent OLeary, *Wheeling Central High School, Wheeling, WV, voleary@cchsknights.org*

Kinetic, Gravitational, Power, Heat. By the end of a standard physics unit about energy students are likely sick of these words. But do they know anything new about most of the "energy" they use in daily life? Where does our energy to turn the lights on, cook our food, and drive to school come from in WV? And what are the societal costs of using that energy? During this hands-on session, we'll act out a series of activities designed to grow students' understanding of energy through storytelling and help bridge the gap between energy in the physics classroom and energy in society. Learn how to use visual methods for representing energy storage and transfer and how to lead students in discussions about climate change, energy production and WV. Leave this session with classroom ready worksheets and example student projects that will supercharge the end of your next energy unit.

Saturday, October 26th, 11:00am-12:00pm (continued)

The Art of Whole Group Instruction

Summersville

Eric Kincaid, *Monongalia County Schools, Morgantown, WV*, ekincaid@k12.wv.us

What distinguishes a boring, mundane lecture from a captivating, teacher directed, whole group, learning experience? Do we even need whole group instruction now with all of the flipped classroom options and "YouTube tutors"? In this session we will discuss ways to take your whole group instruction to the next level, increasing engagement in your classroom through awareness and enhancement of non-verbal communication strategies.

Outdoor Learning Network

Potomac

Becca Myers, *Experience Learning, Circleville, WV*, rmyers@experience-learning.org

Experience Learning has been taking youth outdoors to learn for over 50 years, and the goal is to make it easy for teachers to do it too! We envision educators incorporating their schoolyard and greater community as an extension of the classroom, so we've developed an Outdoor Learning Guide to inspire and lead you through our multidisciplinary lessons, accommodating a variety of learning styles and making content meaningful, hands-on, and easy for classroom teachers to implement. Our curriculum is developed by West Virginia teachers and based on the WVDE student success standards, making the lessons relevant to the state's required learning standards, while students apply their knowledge to solve real-world problems.

Join us as we explore our engaging outdoor learning lessons, demonstrate what a project-based learning model looks like, and find out more about how you can become a part of our community of educators!

Fundamentals of Forensic Photography Part III

Greenbrier

Roger Jefferys, *West Virginia University, Morgantown, WV*, rjeffery@mail.wvu.edu

This workshop will be the third of a three part series covering the fundamentals of forensic photography. Part III of the series will focus on advanced techniques for capturing forensic photographs such as alternative light sources. Crime scene photography methods will also be covered.



Plan to join us for Future Conferences

October 23rd-25th, 2025 _____ **Canaan Valley Resort**

Davis, WV

October 29th-31st, 2026 _____ **Flatwoods Conference Center**

Flatwoods, WV



Exhibitors

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Delta Education/ School Specialty

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Texas Instruments

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Challenger Learning Center Wheeling University	http://www.e-missions.net/
The Clay Center	https://www.theclaycenter.org/
June Harless Center at Marshall University	https://www.marshall.edu/juneharless
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NASA IV&V ERC/Fairmont State University	https://nasaivverc.org
WV Robotics Alliance	https://wvrobot.org
Presidential Awards for Excellence in Math & Science Teaching (PAEMST)	https://paemst.nsf.gov
West Virginia Space Grant Consortium	https://www.wvspacegrant.org
West Virginia University- C. Eugene Department of Chemistry	https://www.chemistry.wvu.edu/
WVU Department of Geology and Geography	https://www.geo.wvu.edu/
W.V. Dept. of Environmental Protection -Project WET & Youth Environmental Program	https://dep.wv.gov
WV Envirothon	https://www.wvca.us/envirothon/
WV SPOT - Green Bank Observatory	https://wvspot.org
WVU TECH Department of Civil Engineering	https://wvbridgedesignandbuildcontest.com

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 CATS Cadre Experts and WV Climate Change PD & scholarships for 28 teachers to attend the conference.
- WV SPACE GRANT CONSORTIUM for providing travel funds for WV 2 student projects participating in the International Science & Engineering Fair
- WVSTA for sponsoring the conference bags.
- WVSTA for providing the name badge holders
- FAIRMONT STATE UNIVERSITY, for sponsoring the programs.
- WVSTA for sponsoring Breaks.
- VENDORS for sponsoring the Vendor Reception
- PAEMST for sponsoring the Dessert Reception.
- FAIRMONT STATE UNIVERSITY for printing registration materials.
- Keirsten Reich for preparing the registration materials.
- ALL THE GENEROUS VENDORS that 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 2024 Art Contest Winner



Haven Gerwig
Midland Trail High School
Teacher: Rachel Eades

*CERTIFICATE OF
ATTENDANCE*

Presented to

**for Participation in the
West Virginia Science Teachers Association Conference
October 24-26, 2024
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