

**VIRGINIA ASSOCIATION OF SCIENCE TEACHERS
2023 PROFESSIONAL DEVELOPMENT INSTITUTE
CONCURRENT SESSION PRESENTATIONS
Friday Afternoon Presentations**

Friday noon - 1:00 PM, Regency Overlook (Upper Level), Grade: ALL GRADES, Content: Pre-service/early career

33. Pre-service and Early Career Teacher Ticketed Lunch Meeting

Robbie Higdon, VAST Colleges and Universities Chair

Inviting pre-service and early career teachers for a lunch and learn session highlighting the wealth of resources available from VAST and our partners. Meet current science supervisors and other science leaders who will support you. Meet some of our vendors and learn how they can assist you with obtaining classroom resources. Questions about licensure and hiring procedures will be addressed. We have door prizes and one lucky attendee will be awarded a free registration to the 2024 VAST PDI!

Session 3: Friday 1:10 PM - 2:00 PM, Crystal Ballroom A (Ballroom Level), Grade: MS, Content: Assessment/Performance Tasks

34. Performance Tasks for Middle School Science

Kimberly Rice, Five Ponds Press

In this session, middle school science teachers will learn how to engage students with creative and innovative performance tasks. Several examples will be shown that include "real world" challenges for the middle school science classroom (Sixth Grade, Life Science, Physical Science). Participants will learn how to use and create a performance task that combines standards based content with 21st century skills. Commercial Exhibitor

Session 3: Friday 1:10 PM - 2:00 PM, Crystal Ballroom B (Ballroom Level), Grade: MS-HS, Content: Chemistry

35. "Probing" Chemistry Topics with Texas Instruments

Wendy Peel, Texas Instruments, Inc.

Join us as we pair TI graphing calculators with various Vernier probes to explore Chemistry concepts Commercial Exhibitor

Session 3: Friday 1:10 PM - 2:00 PM, Crystal Ballroom C (Ballroom Level), Grade: ELEM, Content: General, STEM

36. Building Vocabulary and Sense-making with Makerspace Tasks

Pam Caffery, hand2mind

Makerspace can become an integral part of instruction where students learn vocabulary and make sense of phenomena. In this session, we will dive into makerspace as a means to engage students differently as they develop their science language and build better understanding of science concepts. You'll walk away with great ideas and strategies to build vocabulary with phonics while experiencing makerspace tasks. Commercial Exhibitor

Session 3: Friday 1:10 PM - 2:00 PM, Crystal Ballroom D (Ballroom Level), Grade: MS-HS, Content: Biology/Life Science

37. Accessible Gel Electrophoresis for Middle & High School Bio

Marc Bliss, miniPCR bio

Link physical science concepts like circuits and charged particles to the essential biotech method gel electrophoresis. Build a reusable gel electrophoresis system with the Bandit STEM Electrophoresis Kit, and use it to separate colorful dyes. Also add the A to STEAM with creative micropipetting art! Commercial Exhibitor

Session 3: Friday 1:10 PM - 2:00 PM, Crystal Ballroom E (Ballroom Level), Grade: HS, Content: Environmental Science, Physics/Physical Science, Engineering

38. Exploring Marine Hydrokinetics

Kimberly Swan, National Energy Education Development Project

Moving water in the ocean creates a large amount of kinetic energy. Marine Hydrokinetics (MHK), also known as Marine Renewable Energy (MRE), involves the use of technology to harness this energy from the oceans in order to generate electricity to power our lives. Join this session for hands-on and critical thinking activities that help secondary students to explore the science, technology, and engineering involved with harnessing energy from the movement of water in the world's oceans. Not-for-Profit Exhibitor

Session 3: Friday 1:10 PM - 2:00 PM, Buck Mtn. (Ballroom Level), Grade: ELEM, Content: General

39. Getting Started with Anchor Phenomena in FOSS Elementary

Leslie Lausten, School Specialty - FOSS

Students need to experience and make sense of relevant science phenomena - a challenging task for teachers. Participate in a lesson that engages you with local and relevant phenomena. Plan to incorporate phenomena into your everyday instruction. Commercial Exhibitor

Session 3: Friday 1:10 PM - 2:00 PM, Mill Mtn. (Ballroom Level), Grade: HS-COL, Content: Biology/Life Science, Environmental Science, STEM

40. STEM Majors in Sustainability, Environment, & Conservation

John Gray Williams, Virginia Tech - College of Natural Resources and Environment

Natural resources rarely come to mind when students hear the term STEM. But when you stop and think, virtually all consumer products, from the most basic to the most innovative, use materials that can ultimately be tied back to a natural resource. Come learn about the "other" STEM majors at Virginia Tech and how you can connect students interested in biology, chemistry, physics, technology, and engineering to career options in the environment, sustainability, and conservation. Not-for-Profit Exhibitor

Session 3: Friday 1:10 PM - 2:00 PM, Bent Mtn. (Ballroom Level), Grade: MS-HS, Content: General

41. How to Slay Every Science Lesson

Kristen Boudreau, Prospect Heights Middle School

Slay is used as a slang term meaning to impress strongly; overwhelm; especially with humor. The actual dictionary definition of the term is to greatly impress. This session is designed to help you learn and utilize different techniques to energize your classroom and motivate your students. Examples will include gamification ideas, activities, use of phenomena, technology, simulations, etc.

Session 3: Friday 1:10 PM - 2:00 PM, Tinker Mtn. (Ballroom Level)

42. Presentation Cancelled

Session 3: Friday 1:10 PM - 2:00 PM, Brush Mtn. Ballroom Level), Grade: ALL GRADES, Content: General, STEM

43. Bottom Up: Introduction of STEM and Navigating Gender Bias

Lizzy Marples, James Madison University

STEM is essential in our schools, classrooms, and across the globe. However, there has been significant underrepresentation within minority groups, such as people who identify as women. Beyond increasing the number of people who identify as women in these areas, the inclusion of STEM-related experiences at the elementary level allows students to explore ideas such as teamwork, critical thinking, problem-solving, and more which help shape them into well-rounded students.

Session 3: Friday 1:10 PM - 2:00 PM, Washington Lecture Hall (Conference Level), Grade: ALL GRADES, Content: General

44. Plan for Learning with the 2018 Science Curriculum Framework

Gregory MacDougall, Virginia Department of Education

Anne Petersen, Virginia Department of Education

Myra Thayer, Virginia Department of Education

The VDOE Science Team has several modules that are designed to help teachers be successful with their students. This session will explore ways teachers can plan for student learning of science using the 2018 Virginia Science Curriculum Framework.

Session 3: Friday 1:10 PM - 2:00 PM, Wilson (Conference Level), Grade: MS-HS, Content: Earth/Space Science, Math in Science, STEM

45. Zero- Gravity- Taking Your Classroom to the Next Level

Cindy Watson, Bedford County Public Schools/Forest Middle School

A unique opportunity for you, your classes, and your school:

contribute to microgravity research and NASA spaceflight technology

develop out-of-this-world demonstration videos for your classes.

fly like an astronaut, spending more than 11 minutes floating in free-fall.

Learn about the Embedded Teacher Program to develop and fly small experiments and demonstrations on a parabolic flight. You could be selected to fly aboard a Zero-gravity flight.

Session 3: Friday 1:10 PM - 2:00 PM, Monroe (Conference Level), Grade: MS-HS, Content: Earth/Space Science, Biology/Life Science, Environmental Science

46. VCU: The Role of Bivalves in Sustaining Watershed Ecosystems

Al Byers, VCU School of Education: Center for Innovation in STEM Education

Sue Kirk, VCU School of Education

Elizabeth Edmondson, VCU School of Education

We will share 5 modules that engage students in the importance of bivalves in their ecosystems: 1) Oyster Field Studies, 2) Mussel Field Studies, 3) Oyster Role Plays, 4) Mussel Role Plays, and 5) People in Ecosystems Watershed Integration (PEWI) Simulation. The field studies lay the foundation for MWEE learning. The Role Play places students in stakeholder roles as they research authentic scenarios. Students explore agricultural land uses sustaining mussels in the PEWI Simulation.

Session 3: Friday 1:10 PM - 2:00 PM, Harrison-Tyler (Conference Level), Grade: ALL GRADES, Content: General

47. Student-Centered Science using SEPs

Eric Rhoades, Retired

Discover how to help your students make sense of science and transfer their learning to real-world situations in this engaging session. Focused on Tier 1 instructional strategies and scaffolds, you'll learn how to support students in creating and revising scientific models, explanations, and evidence-based arguments. Leave with practical strategies to enhance student learning and unlock the power of deep understanding in your science classroom.

Session 3: Friday 1:10 PM - 2:00 PM, Madison (Conference Level), Grade: HS, Content: General

48. Using Talk as Tool for Learning in High School Science

Angela Webb, James Madison University

Talk is a powerful tool for learning in our high school science classrooms. As teachers, we need ways to intentionally cultivate productive, equitable science discourse for all learners. In this session, JMU preservice teachers discuss the value of science discourse in the classroom, highlight different discussion types and purposes, and share ideas for engaging all learners in science talk.

Session 3: Friday 1:10 PM - 2:00 PM, Jefferson Board Room (Conference Level), Grade: ALL GRADES, Content: Everyone/All levels

49. The Deep End of the Teacher Leader Pool

Heather Overkamp, Portsmouth Public Schools

Do you already lead from the classroom and want to level up your game? Attend this session to find out how you can do more for your students, school, and community with partnerships and accessible resources.

Session 4: Friday 2:15 PM - 3:05 PM, Crystal Ballroom A (Ballroom Level), Grade: ALL GRADES, Content: General

50. Small Steps to Lead with Phenomena

Jason Marshall, McGraw Hill

Do you think leading with phenomena in your instruction is difficult? Think again. Small steps can be taken now to strengthen inquiry experience in your 5E lesson plan, or any lesson model you use. This session will share steps, discuss best practices, and participants will leave with some activities they can use in their classroom. This is a collaborative session. Be prepared to share your ideas and best practices! Commercial Exhibitor

Session 4: Friday 2:15 PM - 3:05 PM, Crystal Ballroom B (Ballroom Level), Grade: MS-HS, Content: Biology/Life Science, Chemistry, Physics/Physical Science

51. Simulations, Data Collection and Assessments Oh My!

Wendy Peel, Texas Instruments, Inc.

This session will explore FREE lessons and activities for Middle and High School Science classes. Visual simulations, data collection and assessment examples include Photosynthesis, Boyle's Law, Circuitry and so many more! Commercial Exhibitor

Session 4: Friday 2:15 PM - 3:05 PM, Crystal Ballroom C (Ballroom Level), Grade: ELEM-MS, Content: General, STEM

52. Engaging in Scientific Argumentation in STEM

Chelsea Chandler, STEMscopes by Accelerate Learning

In this session, we will model successful implementation of consensus building through discourse and argumentation. Learn to reduce teacher talk and increase purposeful student talk around intriguing science topics that matter. Commercial Exhibitor

Session 4: Friday 2:15 PM - 3:05 PM, Crystal Ballroom D (Ballroom Level), Grade: HS-COL, Content: Biology/Life Science

53. Search for Antibiotic Resistance Genes in Environmental DNA

Kristen Hennessy-McDonald, miniPCR bio

Join a national monitoring program tracking the spread of antibiotic resistance in the environment. Use PCR and gel electrophoresis to analyze soil samples for antibiotic resistance, then contribute your data to a national database. This lab has been developed in conjunction with the Prevalence of Antibiotic Resistance in the Environment (PARE) project at Tufts University. Commercial Exhibitor

Session 4: Friday 2:15 PM - 3:05 PM, Crystal Ballroom E (Ballroom Level), Grade: MS-HS, Content: Biology/Life Science

54. Bridge DATA - Bay Nettles: What are the Chances?

Celia Cackowski, Virginia Institute of Marine Science, Marine Advisory Program (VIMS MAP)

The bay nettle (*Chrysaora chesapeakei*) is the most common jelly in Chesapeake Bay during summer. While a great food source for turtles and fish, their sting can be painful to bathers. In this Bridge DATA activity, students calculate the chances of encountering nettles using salinity and water temperature, then check their predictions against the CBEFS forecasts. Not-for-Profit Exhibitor

Session 4: Friday 2:15 PM - 3:05 PM, Buck Mtn. (Ballroom Level), Grade: ELEM, Content: Science Literacy

55. STEM +1: Stirring Literacy into Your Science Lessons!

Jenna Mercury, ExploreLearning

Learn about how adding one more ingredient to your science or STEM lesson will actually boost your students' learning: literacy! In this session you'll see specific examples of how we can weave in K-5 science standards using short stories, poetry, and songs. When we can teach science through literacy or in our literacy blocks, we're able to provide more authentic learning experiences to our students through interdisciplinary fun! Commercial Exhibitor

Session 4: Friday 2:15 PM - 3:05 PM, Mill Mtn. (Ballroom Level), Grade: ALL GRADES, Content: General

56. Promoting Science Appreciation with #ScienceSaves

Christopher Moran, The Teacher Institute for Evolutionary Science

Therese Whitehurst, The Teacher Institute for Evolutionary Science

ScienceSaves promotes the fact that thanks to science, individual lives are healthier and easier. Our free lessons teach graphing, data analysis, engineering practices, and more. They include teacher notes, standards, response sheets, rubrics, and lesson plans. Our resources are at www.sciencesaves.org, with a \$15,000 scholarship opportunity for high school seniors.

Session 4: Friday 2:15 PM - 3:05 PM, Bent Mtn. (Ballroom Level), Grade: MS-HS-COL, Content: Environmental Science, Math in Science, General

57. Intro to Project Learning Tree's® Forests of the World

Lesley Newman, Project Learning Tree, Virginia Department of Forestry

Ellen Powell, Virginia Department of Forestry

This session demonstrates Project Learning Tree's "World Forest Tour," a set of cards used for exploring a range of topics about the world's forests. Participants will use the card set to look at several activities in the PLT Global Connections: Forests of the World resource. Each participant will receive a copy of the book, and one lucky participant will get a laminated set of color cards. Presentation is limited to twenty attendees. Not-for-Profit Exhibitor

Session 4: Friday 2:15 PM - 3:05 PM, Tinker Mtn. (Ballroom Level), Grade: ALL GRADES, Content: Biology/Life Science

58. Tackling Misinformation

Erin Rierson, Rustburg High School

Jamie Banton, Rustburg High School

Misunderstanding and misinformation is a problem. How do we communicate complex concepts in an age-appropriate way without becoming inaccurate when we cannot be experts in every nuance of every subject? How can we best equip our students to navigate the world of information around them? Evaluating accuracy of information cuts across curriculum. Countering misinformation with logical comprehension reading and writing strategies creates a bridge to student understanding.

Session 4: Friday 2:15 PM - 3:05 PM, Brush Mtn. Ballroom Level), Grade: ALL GRADES, Content: STEM

59. STEM Initiatives: A Collaborative Discussion

Katie Fielding, Prince William County Schools

Kirsten White, Prince William County Schools

How is your division implementing Science, Technology, Engineering, and Mathematics (STEM) education that entails authentic learning experiences for all students with an interdisciplinary and applied approach? In this collaborative discussion, we will exchange ideas and share resources for implementing division-wide STEM initiatives and programming.

Session 4: Friday 2:15 PM - 3:05 PM, Washington Lecture Hall (Conference Level), Grade: ALL GRADES, Content: General

60. What Do I Do About Vocabulary?

Myra Thayer, Virginia Department of Education
Anne Petersen, Virginia Department of Education
Gregory MacDougall, Virginia Department of Education

We all know that there is a lot of science specific vocabulary that students need to know. This session will explore the "when and how" of building science vocabulary. You will leave with some new activities that you can take immediately back to your classroom to help reinforce the science vocabulary. This is a repeat of the session last year.

Session 4: Friday 2:15 PM - 3:05 PM, Wilson (Conference Level), Grade: ALL GRADES, Content: Earth/Space Science, Environmental Science

61. Nothing is Random: Weathering, Erosion, Provinces, & The Bay

Chris Kaznosky, Central High School, Shenandoah County
Steve Leslie, James Madison University Geology Department

In science, SOLs examine seemingly random topics such as weathering, erosion, watersheds, geologic provinces, and the Chesapeake Bay. But today, we will use hands-on labs, technology, graphs, maps, and graphics to explore connections between external geologic processes in Virginia's Valley and Ridge province and how these helped create the Coastal Plain province as well as why these are affecting the Chesapeake Bay today. Attendees will receive lessons and other materials.

Session 4: Friday 2:15 PM - 3:05 PM, Monroe (Conference Level), Grade: HS-COL, Content: Chemistry

62. Insights from Human Remains: East Marshall Street Well Proj

Tori Solano, Virginia Commonwealth University
Tal Simmons, Virginia Commonwealth University
Elizabeth Edmondson, Virginia Commonwealth University

The East Marshall Street Well Project is the result of a multi-year community consultation concerning remains of ancestors discovered during construction at Virginia Commonwealth University's medical school in 1994. This project raised ethical issues related to the treatment of human remains. Six lessons were developed and piloted allowing students to examine ethical issues in science, concerning anthropological and DNA analysis to re-associate bones and identify genetic ancestry and phenotype.

Session 4: Friday 2:15 PM - 3:05 PM, Harrison-Tyler (Conference Level), Grade: ALL GRADES, Content: General

63. School Science Safety - Practical Guidelines

Andrew Jackson, Harrisonburg City Schools - retired

Recently retire, I have twenty years of experience as a Science coordinator and 30 years teaching physics and 5 years teaching engineering. This presentation is for the teacher or coordinator of science or engineering where accidents can happen. It is geared towards protecting you, your colleagues, and your students with practical easy to follow advice regarding safety and laws pertaining to safety.

Session 4: Friday 2:15 PM - 3:05 PM, Madison (Conference Level), Grade: ALL GRADES, Content: General

64. Get Involved with the Journal of Virginia Science Education!

Angela Webb, James Madison University
Joi Merritt, James Madison University

Did you know that publishing an article in the Journal of Virginia Science Education (JVSE) can be used toward teacher re-licensure points? Did you know that reviewing an article for JVSE is a professional service that can help build on your resume? This session will acquaint attendees with JVSE, VAST's peer-reviewed professional publication, answer questions about being published in JVSE, and provide an overview of the review process. If you're curious about JVSE and wish to be more involved, please join us!

Session 4: Friday 2:15 PM - 3:05 PM, Jefferson Board Room (Conference Level), Grade: ALL GRADES, Content: Everyone/All levels

65. Workshop for Teachers that Mentor Students in Research

Heather Overkamp, Portsmouth Public Schools

Come meet other teachers that mentor students in research to discuss resources (support and money) and tried and true methods for getting students through competitions. A podcast is in the works for this topic and your input and expertise would be greatly appreciated.

Session 5: Friday 3:20 PM - 4:10 PM, Crystal Ballroom A (Ballroom Level), Grade: MS, Content: Physics/Physical Science

66. Differentiating Student Choice

Rachel Alldaffer, Prince William County Public Schools

This workshop will present how a student choice activity can be modified for English language learners, special education, and extended students with demonstrated adaptations. Most materials demonstrated can be completed on the computer or printed. From my classroom to yours, these methods have proven successful!

Session 5: Friday 3:20 PM - 4:10 PM, Crystal Ballroom B (Ballroom Level), Grade: MS-HS-COL, Content: Earth/Space Science, Biology/Life Science, Physics/Physical Science

67. It's Phenomenal! Real-World Science to Support 3D-Learning

Steven Romano, Savvas Learning Company

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. Commercial Exhibitor

Session 5: Friday 3:20 PM - 4:10 PM, Crystal Ballroom C (Ballroom Level), Grade: ALL GRADES, Content: General, STEM

68. Integrating the Arts Into the Science Classroom

Chelsea Chandler, STEMscopes by Accelerate Learning

Arts integration is a holistic approach that enables students to access the entire curriculum while developing scientific skills needed for the twenty-first century, including creativity, critical thinking, collaboration, and communication. Learn how poetry, music, storytelling, drama, visual art, and creative movement can be meaningfully embedded within the science curriculum. Commercial Exhibitor

Session 5: Friday 3:20 PM - 4:10 PM, Crystal Ballroom D (Ballroom Level), Grade: MS-HS, Content: Biology/Life Science

69. Design an Experiment for the International Space Station!

Marc Bliss, miniPCR bio

Engage students in authentic research through Genes in Space: the free experimental design contest that launches experiments to the International Space Station. Learn about free educational resources, including lesson plans, explainer videos, and biotechnology equipment loans that you can use to bring the contest to your classroom. Participants will take part in a hands-on demo of a classroom lab activity inspired by Genes in Space research. Commercial Exhibitor

Session 5: Friday 3:20 PM - 4:10 PM, Crystal Ballroom E (Ballroom Level), Grade: MS, Content: Biology/Life Science, Environmental Science, STEM

70. Bye-Bye, Bycatch and Hello Terrapin Town!

Celia Cackowski, Virginia Institute of Marine Science, Marine Advisory Program (VIMS MAP)

Anna Caputo, Chesapeake Bay National Estuarine Research Reserve in Virginia (CBNERR-VA)

Graduate students at the Virginia Institute of Marine Science have translated their research into hands-on VA SEA activities for K-12 classrooms. This session shares two engaging activities with real-world connections. In the first activity, students design bycatch reduction devices to catch as many fish and as few turtles as possible. In the second activity, students explore the habitat requirements of the diamondback terrapin and how land management decisions influence their population. Not-for-Profit Exhibitor

Session 5: Friday 3:20 PM - 4:10 PM, Buck Mtn. (Ballroom Level), Grade: ELEM, Content: Science and the Arts (STEAM)

71. Hello Science, Meet Creative Arts! (STEAM K-5)

Jenna Mercury, ExploreLearning

In this session, K-5 educators will learn how to get creative with their “science palette” through the exploration of various multisensory, hands-on art activities that support the Virginia Standards of Learning for science. Enthusiasts will walk away with artistic activities that can be easily interwoven into their day or science block. So, hello Science, meet Creative Art! Commercial Exhibitor

Session 5: Friday 3:20 PM - 4:10 PM, Mill Mtn. (Ballroom Level), Grade: MS, Content: Biology/Life Science

72. Evolution for Middle School Educators

Christopher Moran, The Teacher Institute for Evolutionary Science

Therese Whitehurst, The Teacher Institute for Evolutionary Science

Teach evolution with confidence! An entire free unit of instruction, hands-on activities, and engaging online resources will be shared. Our website features dozens of free resources organized by content standard. Teachers will learn about our live webinar series and YouTube channel with many recorded webinars with evolutionary biologists. Finally, teachers will be invited to join our network of educators where they can be paid to present our free materials back at their schools or districts.

Session 5: Friday 3:20 PM - 4:10 PM, Bent Mtn. (Ballroom Level), Grade: ALL GRADES, Content: Biology/Life Science, Environmental Science, General

73. Marsh Cam Takeover

Courtney Hallacher, Virginia Department of Wildlife Resources

Take classroom viewing of livestreaming animal cams to the next level by taking over the controls of DWR’s Hog Island Marsh Cam. Our Marsh Cam Classroom Takeover gives your students remote access to move the camera located on Hog Island, Virginia to find out what’s going on in the marsh. Join DWR’s Wildlife Education Coordinator as she walks you through the process of taking over the Marsh Cam and previews the resources available to support your takeover and SOLs. Not-for-Profit Exhibitor

Session 5: Friday 3:20 PM - 4:10 PM, Tinker Mtn. (Ballroom Level), Grade: HS, Content: Earth/Space Science, Biology/Life Science

74. Integrating Low Cost Organic Gardening into High School Science Classes

Richard Howell, Tabb High School

Low-cost organic gardening has applications to atmospheric science, biology, environmental science and other subjects and can be adapted to different grade levels. Additionally, it takes kids outside into the fresh air and sunshine while encouraging teamwork, decision making, and planning based on seasonal weather patterns and forecasts. I will share with you my progress in integrating it into 11th-12 grade atmospheric science classes.

Session 5: Friday 3:20 PM - 4:10 PM, Brush Mtn. Ballroom Level), Grade: MS-HS, Content: General

75. Be an A11y Ally: Creating Accessible STEM Classrooms

Katie Fielding, Prince William County Schools

As educators, we increasingly create more digital content for our classrooms. This is good as it unlocks a world of assistive technologies for students. However, those don't all happen by magic. In this session, you will learn how to make your digital classroom accessible to all students by removing digital barriers. We will also review Universal Design for Learning practices which can support learning for all students in your classroom.

Session 5: Friday 3:20 PM - 4:10 PM, Washington Lecture Hall (Conference Level), Grade: ALL GRADES, Content: K-12 Educators

76. The Science Standards of Learning Development and Revision

Anne Petersen, Virginia Department of Education

Myra Thayer, Virginia Department of Education

Gregory MacDougall, Virginia Department of Education

Take the opportunity to provide feedback to inform the revisions of the 2018 Science Standards of Learning and curriculum frameworks and preview the draft Standards of Learning for second-level high school courses and environmental science.

Session 5: Friday 3:20 PM - 4:10 PM, Wilson (Conference Level), Grade: ELEM, Content: STEM

77. Informal K-5 STEM: Let's do More than Spark Interest

Kerry Cresawn, James Madison University STEM Center

Julianna DiRocco, James Madison University STEM Center

Luke Scrogam, James Madison University STEM Center

University and K-5 partnerships for informal STEM face barriers to frequent, long-term, and high-impact programs with consistent and trained facilitators. We will share an ongoing 4-year partnership between JMU and Boys and Girls Club that provides weekly STEM learning and is led by a community of 60 students representing 15 majors. Participants will also engage in discussion surrounding how these programs can support success in the formal classroom, an often minimized goal of informal STEM.

Session 5: Friday 3:20 PM - 4:10 PM, Monroe (Conference Level), Grade: HS, Content: Chemistry

78. A Quick Chemistry Grab Bag

James Key, Huguenot High School

The description of my presentation Chemistry Made Easy: Keep it Simple and Fun for Success. With this presentation, my objectives would be to provide easy-to-use and easy to prepare chemistry activities that will cover the Virginia Standards of Learning for Chemistry while allowing for student engagement and retention of the concepts in a straightforward manner. I will provide hands-on-resources based on my experiences as a Chemistry teacher to assist other chemistry teachers

Session 5: Friday 3:20 PM - 4:10 PM, Harrison-Tyler (Conference Level), Grade: ELEM-MS, Content: All K-8 teachers

79. CVCSI Team- Core Content Plans to Help You Integrate CS

Allison Kappler, Bedford County Public Schools

The Central Virginia Computer Science Integration Team, made of 5 school divisions, has been working (through the ACSE Grant and in collaboration with CodeVA) to create ready to go lesson plans integrating the K-8 CS SOLs into all four core subject areas. Team members will be sharing about their journey as well as the resources that have been created and are ready to go for you to use in your classroom!

Session 5: Friday 3:20 PM - 4:10 PM, Madison (Conference Level), Grade: ALL GRADES, Content: Math in Science, General, STEM

80. Science Teaching Revisited: The STEM Clinical Experience

Kianga Thomas, Norfolk State University

Shafeeq Ameen, Norfolk State University

This session is designed to enhance the STEM experience for in-service teachers in preparation for modeling the clinical experience for pre-service teachers. In addition, this session will highlight interpersonal strategies towards increasing hands-on skills in the STEM classroom amidst post COVID. Furthermore, participants will contribute in dialogue pertaining to supervising pre-service teachers during the student teaching experience.

Session 5: Friday 3:20 PM - 4:10 PM, Jefferson Board Room (Conference Level), Grade: HS-COL, Content: Biology/Life Science, Environmental Science, Physics/Physical Science

81. Do You Teach AP? Lets Learn How the CRR Can Help

Alice Scheele, Patrick Henry High School

AP students end their classroom journey with the AP exam, but you shouldn't stop learning in May. Join me to learn how you can utilize the Chief Reader Report to review the results and misconceptions that students had. All three subjects (Bio, Env Sci, and Physics) will be covered, but we will go in depth (and get a first hand account from a 2023 reader) with Biology.

Session 6: Friday 4:25 PM - 5:15 PM, Crystal Ballroom A (Ballroom Level), Grade: MS-HS-COL, Content: Earth/Space Science, Chemistry, Environmental Science

82. Inspiring Innovators

Rachel Stuart, Eastern View High School

Heather Glick, Eastern View High School

If we want to grow innovators, we need to inspire inquiry. We can't be afraid to ask questions that we may not already have the answer to. We will demonstrate how focus on labs to meet SOL objectives. We will use gamification to provide instruction and then walk through how to make an object Lab centered. We will use tools such as Google Earth, quizlet live, gimkit, probeware, wet labs, and more into lesson plans to inspire our future innovators.

Session 6: Friday 4:25 PM - 5:15 PM, Crystal Ballroom B (Ballroom Level), Grade: ALL GRADES, Content: General

83. Coffee Chat with the VAST Content Chairs

David Matchen, VAST Earth Science Content Chair

Tony Wayne, Albemarle High School

Jennifer Sharp, Floyd County High School

Jill Collins, Martinsville City Public Schools

The goal of the VAST Content Chairs is to ensure all science teachers know they are not alone. We want to strengthen the science education community and we plan to do this content by content. Please join the VAST Content Chairs and let's have a discussion on how we can assist you to achieve your goals as a science educator.

Session 6: Friday 4:25 PM - 5:15 PM, Crystal Ballroom C (Ballroom Level), Grade: ALL GRADES, Content: Environmental Science

84. Unraveling the Mysteries of MWEEs with JRA

Matthew Scott, James River Association

Charles Johnson, James River Association

Learn how JRA created a 3-year-long Meaningful Watershed Educational Experience (MWEE) for thousands of students in 3 different parts of Virginia. JRA will explain the ins-and-outs of creating and managing large grant-funded MWEE projects, do hands-on demonstrations of MWEE activities, and help participants plan MWEEs at their schools! Participants will get State of the James 2023 posters and other takeaways for their classrooms to teach MWEEs and locally-focused environmental science.

Not-for-Profit Exhibitor

Session 6: Friday 4:25 PM - 5:15 PM, Crystal Ballroom D (Ballroom Level), Grade: HS-COL, Content: Biology/Life Science

85. Exploring Mendelian Inheritance with Labradoodle Genetics

Kristin Hennessy-McDonald, miniPCR bio

Introduce students to an essential biotech technique while solving the mystery of who is the father to Molly the Labradoodle's puppies. By using gel electrophoresis and Punnett squares to track the inheritance of the furnishings trait, your students will decide if it was Zeus the Poodle or Otto the Labradoodle. Commercial Exhibitor

Session 6: Friday 4:25 PM - 5:15 PM, Crystal Ballroom E (Ballroom Level)

86. Presentation Cancelled

Session 6: Friday 4:25 PM - 5:15 PM, Buck Mtn. (Ballroom Level), Grade: ALL GRADES, Content: Earth/Space Science, Environmental Science, General

87. Using Bloom's Taxonomy and Webb's DoK to Increase Rigor

Tabatha Zarkauskas, Prince William County Public Schools

Participants will examine Bloom's Taxonomy levels and Webb's Depth of Knowledge levels to improve upon the ways to deliver information and how to write questions to increase rigor in the science classroom. Participants will use their labs and activities to change the way they ask questions to engage in student understanding of scientific concepts. This session can be used across all grade levels and science courses. Participants should bring labs, activities or worksheets that they would like to update.

Session 6: Friday 4:25 PM - 5:15 PM, Mill Mtn. (Ballroom Level), Grade: HS-COL, Content: Chemistry, Math in Science, STEM

88. Pipette Micro Rockets

Erich Sneller, Harrisonburg City Public Schools

Suzie Smith, Harrisonburg City Public Schools

Pipette Micro Rockets are a fantastic way for students to explore stoichiometric relationships (i.e. the study of reactants and products during chemical reactions). In this session, you will enjoy the challenge of capturing and combusting hydrogen and oxygen, sending your rocket soaring! You will take the seat of student, learning firsthand how this experience will excite students, preview stoichiometric relationships, and imprint lasting memories of a highly engaging science lesson.

Session 6: Friday 4:25 PM - 5:15 PM, Bent Mtn. (Ballroom Level), Grade: ALL GRADES, Content: General

89. Colleges and Universities Roundtable

Robbie Higdon, VAST Colleges and Universities Chair

Calling all persons who are engaged in pre-service teacher education to gather for a time of conversation and reflection about science education in Virginia. We will be exploring ways we can collaborate and support each other in this important work.

Session 6: Friday 4:25 PM - 5:15 PM, Tinker Mtn. (Ballroom Level), Grade: ALL GRADES, Content: Cross-Curricular Connections

90. Cross Circular Connections with Colonial Williamsburg

Rachel Honchul, Colonial Williamsburg Foundation

Brandon Lyles, Colonial Williamsburg Foundation

In the eighteenth century, Williamsburg was a center for scientific experimentation and discovery. With public interest in personal scientific inquiry at an all-time high, many taverns held science-based lectures and experiment demonstrations. Join the Colonial Williamsburg Foundation to learn how stories of personal discovery connected with inquiry-based educational strategies can inspire students to engage in meaningful cross-curricular learning. Not-for-Profit Exhibitor

Session 6: Friday 4:25 PM - 5:15 PM, Brush Mtn. Ballroom Level), Grade: MS-HS, Content: Biology/Life Science

91. Creative Projects Using Research and Data

Patrick Scharf, Louisa County Public Schools

Explore two creative projects for middle or high school students. In the first project, students will create an island that includes requirements like topography, climate, plants, animals, energy levels, food pyramid/web, runoff, and other factors depending on your students' level or ability. In the second project, you will be led through a Climate Change project requiring research and the use of NASA and NOAA data. You will have the opportunity to do any part of the projects. Examples, links and rubrics will be provided.

Session 6: Friday 4:25 PM - 5:15 PM, Washington Lecture Hall (Conference Level), Grade: ALL GRADES, Content: General

92. Applying for PAEMST: Highlighting Your Teaching

Gregory MacDougall, Virginia Department of Education

Anne Petersen, Virginia Department of Education

Myra Thayer, Virginia Department of Education

PAEMST, the Presidential Awards for Excellence in Mathematics and Science Teaching, is the nation's highest honor for teachers of mathematics and science. The application process can be daunting and is designed for teachers to critically reflect on and highlight their craft. This session is designed to provide insight into the application process and highlight critical elements that make for compelling applications.

Session 6: Friday 4:25 PM - 5:15 PM, Wilson (Conference Level), Grade: ALL GRADES, Content: Biology/Life Science, Environmental Science

93. Three Programs to Integrate Environmental Ed in Your Classroom

Krista Hodges, Dan River Basin Association

Regina Flora, Dan River Basin Association

Participants will learn about three hands-on environmental education programs that they can easily integrate into their classroom learning. Programs can be adjusted to reach different grade levels, as appropriate. Details in the session will also include a sample grant proposal, hands-on activities and new partnership ideas.

Session 6: Friday 4:25 PM - 5:15 PM, Monroe (Conference Level), Grade: HS, Content: Environmental Science

94. The Life of a Monarch Butterfly (PBL)

Carolene Lewis, Westmorland High School

Paris Hickman, Westmoreland High School

It will be a PBL with the Driving Question "Why we do not see baby Monarch Butterflies?"

Session 6: Friday 4:25 PM - 5:15 PM, Harrison-Tyler (Conference Level), Grade: ALL GRADES, Content: STEM

95. Regional STEM PD - Crosspollination Results & Tips

Cheryl Lindeman, STEM Consultant

Lani Patrick, Campbell County Public Schools

Allison Kappler, Bedford County Public Schools

Central Virginia educators serving as board members of the Future Focus Foundation planned four STEM PD opportunities during 2022-2023. Our "Drive-In STEM" Education Series connects K-12 educators with STEM-based organizations while providing fun, engaging professional learning opportunities. We will share how we modeled networking to build professional relationships, integrated science and engineering practices, provided mini-grants, and introduced teachers to novel data collection methods.

Session 6: Friday 4:25 PM - 5:15 PM, Madison (Conference Level)

96. No Presentation

Session 6: Friday 4:25 PM - 5:15 PM, Jefferson Board Room (Conference Level), Grade: HS-COL, Content: Biology/Life Science, Chemistry, General

97. Lets Get Interactive! Are Science Notebooks for You?

Alice Scheele, Patrick Henry High School

Bryan Buckalew, Patrick Henry High School

Jennifer Falin, Louisa High School

Get interactive and help engage students with a hands-on learning tool which combines note-taking skills, organization practices, and opportunities to harness creativity. We teach: AP/dual enrollment, chemistry and biology. Come see what we do and think about how you can start this amazing in your classroom.