WSST Conference 2024

C College E Elementary F Fieldtrip G General H High School M Middle School S Social W Workshop

APRIL 19 • FRIDAY

7:00am – 4:00pm		**Registration**	Registration Desk
8:00am – 8:50am	G	**FOSS Introduction to Thinklink** **Target Audience:** New, New-to-FOSS and experienced teachers with little online experience. This 50-minute session will focus on FOSS online resources available to support teachers and students, including: · Teacher Prep Videos · Student ebook · Teaching slides · Multimedia · Creating and managing assignments for students	North Hall A
8:00am – 8:50am	G	**From Vision to Victory: How to Write a Successful WSST Grant** *Speakers: Kathy Biernat, Brian Bartel* WSST Foundation grants can be an excellent funding source for that special project you've been wanting to try with your students. Led by Foundation Committee members and a successful grant winner, this session will provide an overview of all of our Foundation grants, provide tips and ideas for writing an outstanding grant proposal, and describe what to expect for the funding and reporting after you've been awarded a grant. As part of the session, all participants will be given time and support to submit an idea for a $200 Front and Center grant. Front and Center grant applications will be selected on Friday afternoon and announced by the Friday night Milton Pella banquet. A select number of applications that originate from this session will be selected for approval!	Meeting D
8:00am – 8:50am	G	**There's No Shame in Asking for Help!** *Speakers: Andrea Christianson, Amy L Mehltretter* Over the past few years; through PLCs, coaching cycles, and conversations with administrators, I have worked on deepening my understanding of the NGSS standards as well as trying new pedagogical approaches in my science classrooms. Through these conversations I have worked with the goal of increasing student identities as scientists. This has not always been an easy process (COVID/ Virtual Learning), but I feel I am getting to a place where more students in my classroom see themselves as citizen scientists and less as a student that has to "sit through" a science class. In this session, we will hear my story about how instructional moves and conversations have changed my instruction from teacher led to student centered. Time will be spent with an instructional coach leading attendees through a reflective process in hopes that they too will not be "too ashamed to ask for help".	Meeting C
8:00am – 8:50am	H	**Biology Roundtable Share session** *Speakers: Natalie Elverman, Shannon Previte* Join other Biology teachers from Wisconsin for an informal roundtable discussion and resource sharing session. Bring a computer, any resources you would like to share and gain access to our community google drive. Are you diving into biology storylines - need others to connect with or are you new to the concept - want to learn more? After introductions and drive access, we plan to break the group of educators into smaller groups to connect specifically with what you are interested in. We are excited to make connections in teaching biology and have resources to dig into after the conference!	Mezzanine

8:00am – 8:50am H **The Graphs We've Known and Loved** Meeting B

Speakers: Ryan Peterson

I'm going to say it. Not every kid needs to know and be able to use kinematic equations to be a successful, happy and healthy adult. However, they do need to know how to collect and evaluate data and they need to know how to create and evaluate claims - they also need a science credit to graduate. With that in mind I set out to create a physics course for the rest of the kids a few years ago. The class leads kids through weekly cycles in which the take data, make and evaluate graphs, write CER conclusions and then use their work to solve an actual real problem or challenge in a related lab practical assessment. Each week we collect a new graph or rediscover an old friend. I call it "The Graphs We've Known and Loved" . It has been fun and rewarding to develop. It is not perfect but I'm hoping that in the second part of our hour together we might brainstorm some solutions to problems and generate some new lab ideas to take home.

8:00am – 8:50am H **Inclusive Grading** Meeting E

Speakers: Tim Buttles

Grading is integral to teaching and learning; however, educators and students often face challenges with current grading practices. Educators may struggle with having enough time to provide feedback and create authentic assessments. For students, grades are linked to decreased motivation and a lack of enjoyment, often bolstered by a fear of failure. Additionally, current grading practices often reinforce inequalities based on individual and institutional biases. Making grading more inclusive may involve small changes or moving to alternative grading approaches such as ungrading, specifications grading, and pass/fail grading.

This session will provide an opportunity for secondary and postsecondary educators to think about incorporating inclusive grading into their classrooms. Participants will 1) define inclusive grading within the context of equity and inclusion; 2) explore grading practices from different perspectives (ex., students, educators, employers, etc.); and 3) discuss examples of inclusive grading practices.

8:00am – 8:50am H **Bringing Water Research into Your Classroom** Riverside Ball C

Speakers: Laura Lauderdale, Marissa Jablonski, Sarah Vitale, Nicole Hayes

Join members of the Freshwater Collaborative of Wisconsin for a session on hands-on water programs that provide middle school and high school students and teachers with opportunities to study Wisconsin’s aquatic ecosystems firsthand. Panelists will discuss programs at UW-Eau Claire, UW-Green Bay, UW-La Crosse and UW-Stout, including high school camps, an environmental science fair, hands-on groundwater science training for teachers, and water-monitoring programs that link freshwater-focused educators and middle and high school students with statewide water experts. Learn how to prepare your students for STEM programs in college and create a network that connects them and you to faculty and undergraduate scientists in the Universities of Wisconsin. Intended outcomes include ideas for bringing hands-on water science activities into your classroom and building skills in students at all levels, an enhanced ability to provide knowledge about water careers to your students, and an increased connection to researchers across the state who would like to engage students and teachers in their research activities.

8:00am – 8:50am H **Using New Tools for Old Challenges -- Science Teacher Education** Meeting A

Speakers: Curtis O'Dwyer, Jeff Maddock, Mark Olson

We share work-in-progress with new approaches engaging preservice secondary science teachers, cooperating teachers and university instructors to build a more powerful trajectory of professional learning.

This session will focus on efforts to develop PST core teaching practices necessary for them to enact equitable science instruction that addresses NGSS learning goals–in particular–the NGSS Science and Engineering Practices. Our approach builds in concert with support provided by cooperating teachers, university supervisors, and methods instructors. We share efforts to target the core teaching practices of Making Content Accessible & Eliciting and Interpreting Student Thinking using the video annotation GoReact tool and we share early efforts to use mixed-reality virtual simulations that blend analysis and enactment with feedback on these core teaching practices using the Mursion simulation platform

In addition to this presentation, we engage participants in discussion of work samples to demonstrate the approach and to launch a conversation about how to support 1) new teacher learning of core equity teaching practices, and 2) coaching moves that are helpful for building a coherent trajectory of learning to teach. We envision this work to contribute to the formation of a collaborative coaching model to better support science teacher learning-to-teach.

8:00am – 8:50am H **Workshop: Use molecular tools to find antibiotic resistance genes in environmental DNA**

Speakers: Kristin Hennessy-McDonald Meeting F

Join a national monitoring program tracking the spread of antibiotic resistance in the environment. Learn how students can collect soil samples based on their own hypotheses about antibiotic resistance hotspots, extract total environmental DNA from soil, use the molecular methods of PCR and gel electrophoresis to test their samples for evidence of tetracycline resistance, and finally then contribute their data to a national database of antibiotic resistance surveillance.

This lab has been developed in conjunction with the PARE (Prevalence of Antibiotic Resistance in the Environment) project. The PARE project engages students to test and report the prevalence of tetracycline-resistant bacteria from soil at diverse geographic sites, engaging students in one of the great environmental and health challenges of our time. Learn more about the PARE project: https://sites.tufts.edu/ctse/pare

Upon completion of this presentation, participants will:
-Learn how their students can join a national wide monitoring program to test for antibiotic resistance genes and participate in citizen science
-Learn about an advanced lab activity with unknown outcomes that can be used for independent research projects in the classroom
-Understand how the molecular methods of PCR and gel electrophoresis can be used to test for antibiotic resistance in the environment

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8:00am – 8:50am M **From Sparks to Solutions: Brainstorming the Engineering Way** North Hall C

Speakers: Kristen Rillieux

Learn how to empower students to turn great ideas into real solutions with BrainPOP's engineering design process. Students follow a step-by-step process with BrainPOP Science: brainstorm, research, design, build and, test. Discover how to support students in changing their curiosity into practical solutions that work in the real world. This way, students become better at solving problems and turning their ideas into solutions, so students can make a difference in the real world.

8:00am – 8:50am M **Accessible & Engaging Science for Middle Schoolers w/ PBS Wisconsin's Meet The Lab Collection** North Hall D

Speakers: Wes Marner, Michael Hartwell

We all know how intimidating science can be for young people. In order to make this content feel more exciting and inclusive, PBS partnered with Wisconsin-based laboratories to create Meet the Lab! This collection of educational resources for middle school science classrooms introduces learners to relevant real-world issues, cutting edge research, and the human element—the diverse people working together to research, innovate, and solve problems using science. Come learn about this incredible resource, including a brand-new lab focused on climate change, and all the ways it might be used in different learning spaces!

8:00am – 8:50am M **Farm to Classroom: Embedded Agriculture in Urban Schools** Riverside Ball B

Speakers: Mollie Haubenschild, Erica Yoss

This session will provide a guide to create an embedded agriculture program in your school or district. Session will include connections to environmental education, science, and FACS departments for cross curricular work. Attendees will deepen their understanding of environmental ed standards and how they can be woven into their course curriculum, build technical understanding of hydroponics, and create a plan for how they can bring a program like this into their own school. Hands on demonstration of the process will be included, and attendees will be able to start their own seeds to take back home.

8:00am – 9:50am E **How to teach a FOSS lesson Grades K-2** North Hall B

Target Audience: New and New-to-FOSS K-2 teachers, as well as experienced teachers who would like a refresher

This 2-hour session will focus on FOSS module instructional design, pedagogy, and instructional practices, including:

- Experience a model lesson through the lens of a learner
- Debrief active investigation, notebooking, and sensemaking
- Reflect on instruction
- Using your Investigations Guide

8:00am – 9:50am H **Workshop: A Revolution in Resource Partitioning: Using authentic field data and DNA metabarcoding to reveal previously hidden dimensions to niche partitioning.** Meeting G

Speakers: Kathy Van Hoeck, Amy Fassler

This workshop will highlight HHMI Biointeractive Niche Partitioning resources that illustrate how DNA metabarcoding of dung samples helps scientists determine the dietary composition of grazing herbivores. Students are able to construct a deeper understanding of niche partitioning by using the molecular tools now available to ecologists. This understanding helps students form robust strategies for conservation restoration. Participants will leave the workshop with a variety of resources to help students use statistical measures to analyze data and use this evidence to develop conservation management plans.

Workshop Goals:

Participants will identify mechanisms of niche partitioning to answer a fundamental question in ecology: how do species coexist?

Participants will use results from DNA metabarcoding research to identify patterns in resource use among herbivores on the African Savannah.

Participants will use statistical methods to analyze data that informs ecological restoration efforts.

NGSS Connections

Science and Engineering Practices

Developing and Using Models

Carrying Out Investigations

Analyzing and Interpreting Data

Constructing Explanations

Obtaining, Evaluating, and Communicating Information

Cross-cutting Concepts

Patterns

Cause and Effect

Structure and Function

Science is a Human Endeavour

9:00am – 9:50am E **New FOSS assessment and reporting system: FOSSmap Grades 3-8** North Hall A

Target Audience: Experienced teachers interested in using FOSSmap – FOSS's online, standards-based assessment and reporting system for Grades 3-8.

This 50-minute session will focus on FOSSmap for grades 3-8, including:

- 4 types of assessment reports: class by item, student by item, class report, and standards report
- Assigning assessments to students
- Coding assessments

9:00am – 9:50am E **Finding Equity in Catholic Schools** Meeting D

Speakers: Wendy Gilbertson, Erik Duhn

The Catholic education system predates the state of Wisconsin. Meanwhile, the age of the Catholic Church goes back 2000 years. This is not a system that seems to embrace Diversity, Equity, and Inclusion (DEI). This presentation will challenge misconceptions surrounding DEI in Catholic schools. Many educators and administrators write off Catholic schools. They are seen as closed-minded and intolerant. However, Catholic schools go out of their way to build a community surrounding a goal. This goal, while aimed at a common faith, is objectively worked toward within the school.

Within this presentation, we will attempt to reframe DEI to include Catholic schools. Many Catholic schools maintain a distaste for DEI and claim it falls without the Catholic Church. This presentation will not only paint DEI firmly within the walls of Catholic Schools, it will highlight systems that are transferable to public schools. The concept of DEI does not belong to any one ideology. It belongs to all places that seek to make a home for all people.

9:00am – 9:50am G **Science Memes: the Good, the Bad, the Ugly** Meeting A

Speakers: Dale Basler

This informative and engaging session will explore the good, bad, and ugly of internet science memes. We will analyze examples of effective science memes that simplify complex concepts, as well as problematic memes that spread misconceptions. Connections will be made to NGSS cross-cutting concepts of patterns and cause and effect relationships. The presentation will involve thoughtful discussion around leveraging memes for instruction versus furthering stereotypes.

Learning objectives include:
- Evaluate qualities of effective, accurate science memes
- Identify weaknesses in ineffective science memes
- Discuss responsible usage of memes in science communication
- Make recommendations for science educators on navigating student meme culture

The session will maintain high engagement through relevant, often humorous meme examples, opportunities for attendees to analyze provided memes in small groups, and discussions that connect memes to real teaching experiences. Attendees will leave with guidelines on promoting more responsible science communication through memes.

9:00am – 9:50am H **Formative FUN-damentals: Engage Students, Empower Teachers!** Meeting C

Speakers: Kirsten Wiesneski

Learn from a Formative Certified Educator (and Formative Champion) how this FREE platform can help you transform your classroom. [I'm not a paid representative from the company; I'm a high school science teacher who REALLY likes to be efficient which is why I REALLY love Formative.com!]
Formative.com isn't just for formative assessments. Session attendees will be able to experience this assessment platform both from the student and teacher perspective. Attendees will see numerous examples of how Formative.com can be used to: save time grading and analyzing data, facilitate classroom discussions, instantly see/respond to students' misconceptions/errors, encourage students to respond to feedback, increase student engagement and confidence, secretly assign differentiated activities based on student accommodations (my students never know they are getting a modified assessment), and more!
My students really enjoy using formative.com (although the name always throws them off) and the more I use it, the more familiar they become with the cool assessment tools and the more open they are to trying new activities I develop for them.

9:00am – 9:50am H **Makerspace Partners - Librarians and Science Teachers** Riverside Ball C

Speakers: Peg Billing, Karyl Rosenberg

Science teachers have always made use of modeling activities to enhance student understanding . However, maintaining the stock of supplies along with adequate work and storage space has frequently become problematic. Add to this the need for fresh ideas from teachers who do not always have time to be their most creative ,thus opportunities may be lost. This is where librarians as keepers of maker-spaces and a whole range of other resources may be of help.
The NGSS are readily connected through the librarian-maker-space connection.
Some examples include:
The use of story lines and project based learning across content areas
Middle and high school Engineering Design standards(MS-ETS1,1-4 and HS-ETS1,1-4

9:00am – 9:50am H **The Graphs We've Known and Loved** Meeting B

Speakers: Ryan Peterson

Please.

9:00am – 9:50am H **Equitable Discussions of Nature-Culture Relationships: OpenSciEd Biology** Meeting E

Speakers: Sara Krauskopf

OpenSciEd Biology Units incorporate frameworks such as 5 Dimensions of Reasoning About Complex Socio-Ecological Systems developed by Learning in Places to support multiple Ways of Knowing and interacting with phenomena. These frameworks bring conversations about power and historicity into the classroom and help students consider multiple points of view when making decisions involving science. The Nature-Culture Relations framework helps students and educators identify the positionality of interest holders to explain different perspectives. Learn how these frameworks are incorporated into biology units.

9:00am – 9:50am M **Schoolyard Trail of Trees** Riverside Ball B

Speakers: Sarah Wright

Empower your students to teach their community about their local ecosystem! Participants will learn about how students applied their knowledge and skills to create signage about schoolyard trees. Signs explained how to identify various trees to species, why deciduous leaves change color in fall, why southern Wisconsin is home to few conifers, and how we know that our area was an oak savanna in the recent past. Participants will leave with the knowledge and tools required to carry out a similar project in their own schoolyard, from an overview of the curriculum unit leading up to the project, to the nitty gritty details of how to help students design the signs and actually get them in the ground. (LS2.A Interdependent Relationships in Ecosystems; LS2.B Cycles of Matter and Energy Transfer; LS2.C Ecosystem Dynamics)

9:00am – 9:50am M **Earth Science share / round table discussion - WESTA** Mezzanine

Speakers: Ken Budill, Shannon Previte

Calling all EARTH SCIENCE teachers to a round table discussion session to collaborate, share resources and build future connections! We will explore different phenomena based storylines in Earth science, focusing on those that are free to teachers and learn how to join online communities for questions, modified documents and so much more! Bring your computer and any resources you would like to share, as well as gain access to many free resources and google drives for teaching hands on Earth science at any level!

9:00am – 9:50am M **How we teach climate change wrong** North Hall C

Speakers: Kevin Anderson, Kelly Steiner

Research points to ways that both the content and pedagogy of teaching climate change have deviated from what research supports for student learners in Wisconsin. We'll examine common pitfalls, identify key components and collaborate to identify resources and strategies to improve Climate Education in Wisconsin. These include identifying the big 5 ideas: It's real. It's us. Experts agree. It's bad. There's hope. We know that students prefer 20% understanding the problem and 80% working on solutions. We can get better at meeting these goals through collaboration. This topic is an equity issue for two reasons. First, those doing the teaching are disproportionately those with privilege which protects them from the worst effects of the climate crisis, and our students are disproportionately those most negatively impacted. Also, our WSST equity statement requires high quality teaching and learning for every student at every level. That means we must push ourselves though political mis-information and improve our climate education.

Learning targets: Participants will examine their current lessons for pitfalls. Participants will be able to create plans for improved instruction, ready to use when returning to their classrooms or contexts.

Connection to standards: The Wisconsin Science Standards clearly expect understanding of human impacts of climate change in the Earth Science Disciplinary Core Ideas.

9:00am – 9:50am M **Impact At Home: Helping Young People Explore the Local Effects of Global Warming w/ PBS's Climate Wisconsin: Stories From A State Of Change** North Hall D

Speakers: Leigh Kohlmann, Michael Hartwell

The Climate Wisconsin collection describes the personal, local impact of global warming, covering a broad range of topics from farming and sugarding, to forestry and fly fishing. Through in-depth site exploration with PBS Wisconsin Education and group discussion with an experienced science educator, participants will brainstorm ideas to integrate this important content into their own learning spaces.

9:00am – 9:50am	M	**Workshop: Design an Experiment for the International Space Station!** *Speakers: Kristin Hennessy-McDonald* Genes in Space is a free annual contest that launches student-designed research projects to space. We invite students in grades 7-12 to design DNA experiments that address challenges faced by space travelers. Each year, one winning project is selected to fly to the International Space Station (ISS), where it will be carried out by astronauts. Participants will develop the skills needed to bring the cutting edge of biology and space exploration into their classrooms. We will provide hands-on training in the use of the same molecular biology tools that are used to carry out Genes in Space experiments aboard the ISS, and introduce ways to implement these tools, such as PCR technology, with students. Specifically, participants in this session will: 1) learn about the ISS as a venue for cross-disciplinary scientific research 2) explore how their students can become involved in authentic space biology research, and 3) walk away with free classroom resources they can use to engage their students through space biology and biotechnology. Join us to learn how you can use the contest to engage your students in authentic research, and to learn how you can access free Genes in Space classroom resources, including biotechnology equipment loans.	Meeting F
9:00am – 10:00am	S	**Coffee and Cookie Bar, sponsored by ECA Science Kit**	Vendor Hall
9:00am – 11:00am	G	**Movie Screening: Decoding the Driftless** Buckle-up for a wild ride of science- adventure, above, on, and within the amazing Driftless Region of North America, with Emmy- winning filmmakers George Howe, Tim Jacobson, Rob Nelson, and director Jonas Stenstrom of Untamed Science. You'll soar high over rugged bluffs, skim the surface of primordial rivers, venture deep underground to mysterious secret worlds, marvel at ancient archeological treasures, and hang perilously over massive rock cliffs with endangered peregrine falcons, all while learning the fascinating story of how this landscape came to be.	Riverside Ball A
9:00am – 3:00pm	G	**Vendor Hall**	Vendor Hall
9:30am – 11:30am	F	**Closed FT9: Kwik Trip Distribution Center and Food Protection Lab** This FT is Closed Cost $5, prior registration required Welcome to Kwik Trip! 98% of all the products sold at your neighborhood Kwik Trip are shipped from the KT Distribution Center. We will walk through the 7-football field-long facility and watch as hundreds of coworkers pull the orders for 850-plus stores. You will also go inside our famous banana room where we ripen roughly 48 million pounds of bananas every year. From there, we will head to KT's state-of-the-art Food Protection Lab and get a behind-the-scenes look at all of the things our experts do to make sure our products and facilities are safe. Kwik Trip is one of the only C-stores in the nation with its own lab. Our team performs roughly 500 tests every day. The KT lab is also one of just 60 worldwide certified to perform PCR, a type of genetic testing. Requirements/Miscellaneous: • All guests are required to sign off on KT's ammonia policy. • Participants should wear comfortable clothing and comfortable walking shoes. • Pants and close-toed shoes are required. No skirts, shorts, or flip-flops. • Photography is not allowed inside our production facilities.	

9:30am – 11:30am F **FT7: Summit Elementary School Forest**

Cost $5, prior registration required

Summit Environmental School is a public school in the School District of La Crosse serving 285 students from 4K - 5th grade. Summit is located on French Island between the Black River and the backwaters of the Mississippi. The school is on a 10-acre campus with a frog pond, school forest, vegetable garden and natural playscape. The mission of Summit Environmental School is "to provide students with a solid educational foundation in the core academic areas with an environmental focus integrated throughout the curriculum."

Join us for a tour of the school forest and school grounds to learn about how Summit students explore their outdoor classroom. LEAF - Wisconsin's K12 Forestry Education and School Forest Program has been an important partner to Summit Environmental School. LEAF Staff will be present to answer questions about the Wisconsin School Forest and LEAF School Grounds programs. This field trip is recommended for elementary school educators, however, any registered conference participants may attend.

9:30am – 11:30am F **FT8: USGS Upper Midwest Environmental Sciences Center**

Cost $5, prior registration required

Take a tour of the newly renovated Upper Midwest Environmental Sciences Center. The tour starts with an overview of the available resources produced by the USGS (science education, publications, maps, datasets etc.), and a walking tour of the center to learn about the science taking place in the region.

10:00am – 10:50am E **Place-Based Learning for Very Young Scientists** Riverside Ball B

Speakers: Sarah Wright

I am lucky to teach exclusively science at a K-8 school; I realize that many elementary teachers are juggling all subjects! Participants will put themselves in the shoes of 1st and 2nd grade students, learning how to set up successful routines for outdoor learning and engaging in several investigations. You will leave with materials that I designed to supplement the FOSS Solids & Liquids and Plants & Animals units, but that could be used in conjunction with other resources. My main goal in writing these materials was to achieve the same science learning objectives, within the context of real-life examples in our own schoolyard. Let's get kids outside and loving their local ecosystems! (LS4.C Adaptation, LS4.D Biodiversity and Humans, ESS2.C The Roles of Water in Earth's Processes)

10:00am – 10:50am E **Empathy for Wildlife: Incorporating SEL in Science** Riverside Ball C

Speakers: Shanna M. Hillard, Amy Fangmann

This session will focus on the Zoological Society of Milwaukee’s Animal Ambassador program that aims to increase 2nd-4th grade student knowledge about animals while simultaneously helping students build empathy for wildlife. During our session, we will detail our approach to building empathy for wildlife and the activities that are used in our classes. Participants will then have an opportunity to partake in some of the activities that we utilize during our school visits and field trip. We will also discuss the challenges that can come up with implementing empathy for animals. Additionally, we will draw connections to the NGSS standards as well as Wisconsin’s DPI’s Social and Emotional Learning Competencies. Finally, we will discuss the broader questions of how and where SEL and empathy can be incorporated into science curriculums. These questions could include but are not limited to how we approach dissections with empathy, plant emotions, reframing invasive species narratives, and human population regarding the climate crisis.

10:00am – 10:50am G **Incorporating the PLC Process in the Classroom** Meeting C

Speakers: Megan Awe, Jonathan Kao

The acronym PLC stands for Professional Learning Community and is a process through which teachers are meant to collaborate and drive student learning through processing of data. If you are like most teachers all of those buzz words have gone in one ear and out the other. However we believe that the PLC method, when done correctly, can provide a positive experience for both students and teachers and drive achievement. Join us for a step-by-step walkthrough of how the PLC process answers four key questions about education: What do you want the students to be able to do? How will you know they know it? What will you do if they don't know it? What will you do if they do know it? Examples will be provided for how to turn standards into learning targets, how formative assessments are used to drive student centered interventions, and suggestions for how to structure a team in order to provide maximum benefit for all stakeholders.

10:00am – 10:50am G **Modifying Existing Science Units to Align to NGSS** North Hall C

Speakers: Sara Krauskopf, Dennis Rohr, Craig Kohn, Kevin Anderson

We will actively involve participants in defining what high-quality science instruction looks like and share some of our research-based suggestions for this process. We'll specifically dig into examples of how to bring all three dimensions of the NGSS into a unit, with a goal of student sensemaking of phenomena through the course of a "storyline" of learning. This session will use the core components of an educator module being developed for DPI's WISELearn database by a grant-funded group that's focused on localizing high-quality storyline units. We will also share the WISELearn Science Hub repository.

10:00am – 10:50am G **Unboxing your FOSS kit** North Hall A

Target Audience: New and New-to-FOSS teachers

This 50-minute session will focus on unboxing your FOSS kit and planning to teach FOSS, including:

- What's in the box
- Materials management
- Preparing materials for the investigation
- Planning for the investigation
- Guiding the investigation

10:00am – 10:50am G **Wild Wisconsin Weather** Meeting D

Speakers: Dalton Soergel, Nate Falkinham, Erik Duhn

Wisconsin weather is some of the wildest in the world. We receive all four seasons. With cold fronts, warm fronts, lake effect, and tornados, we can experience all four seasons in a single day! Come join us as we look at classroom resources from the National Weather Service, delve deep into microclimates, and explore how our students can begin writing forecasts by looking at the sky.

Not all weather is hurricanes and heat waves. We will look at microclimates around school ponds. We will explore hydrology and cycles of lakes. We will look at all the material that curricula from California and Florida ignore. Wisconsin topology also has an impact on local systems. We will look at the effects the Driftless Glen has on sapping weak frontal systems.

These presenters are members of the United State Air Force and a part of the Wisconsin Air National Guard. Their job is to forecast weather for airframes at airfields. This job is different than what you may see on the television. While your local weather may display a map, these presenters forecast for specific locations.

10:00am – 10:50am H **Biotech Breakthrough! Biotechnology Accessibility Through 3D Models and Design Challenges** Meeting B

Speakers: Mark Arnholt

In the rapidly evolving landscape of biotechnology, high school teachers play a pivotal role in inspiring the next generation of scientists. This workshop is designed to empower educators with an in-depth understanding of restriction enzymes and their potential use in genome editing while simultaneously making it accessible for ANY STUDENT. Through the workshop, teachers will see how restriction enzymes function in nature and how they can be used in genetic engineering, DNA manipulation, and molecular biology. Participants will gain hands-on experience modeling DNA digests to foster a practical understanding for use in a 9-12 classroom. Educators will also participate in a design challenge exploring how zinc finger nucleases could be used to increase enzyme specificity, unlocking new possibilities for gene targeting and modification. The workshop will emphasize integrating these advanced techniques into high school science curricula, ensuring educators leave with practical insights and materials to engage students in cutting-edge biotechnological concepts. The goal is to equip teachers with the knowledge and resources needed to inspire the next generation by fostering an appreciation for the precision and potential of genetic engineering tools.

10:00am – 10:50am M **Making Project-Based Learning Work** Meeting E

Speakers: Claire Bernatz

NGSS has a whole set of standards linked to engineering. In this presentation, people will learn how to connect PBL to NGSS standards, how to integrate projects into existing curriculum, and how students can make strong connections to the content beyond a test or quiz. We will practice taking a quiz, making a paper airplane, then go over free resources that they can use in the classroom.

10:00am – 10:50am M **How Wetlands Play a Role in Preserving Habitat** North Hall D

Speakers: Ron Grasshoff, Tom Bernthal, Karen Mesmer

Participants will learn about wetlands in Wisconsin and how they protect habitat, water quality, public safety and flood storage. Through the phenomenon of the 2018 flood in Middleton, participants will analyze and interpret map data to find patterns and construct an explanation for why it happened. They then will hear from wetland scientists explaining how watersheds operate, their importance, and what we can do to prevent loss of wetlands. We will discuss whether any changes in the existing laws would impact habitat loss and public safety. Resources will be shared so that teachers can find local data. This connects to the DCI “Moreover, anthropogenic changes (induced by human activity) in the environment—including habitat destruction, pollution, introduction of invasive species, overexploitation, and climate change—can disrupt an ecosystem and threaten the survival of some species.” (HS-LS2-7)

10:00am – 10:50am M **Scaffolding Science Practices in Grades 5-10** Meeting A

Speakers: Katie Klitzke, Rachael Lancor

Our department has been developing common language, tools, and rubrics to help students build NGSS Science Practices in grades 5-10. Our tools and rubrics focus on scientific inquiry skills such as developing research questions, writing a hypothesis, identifying variables, and designing experiments. After designing experiments, students collect and analyze data, evaluate their hypothesis, and evaluate the validity of their experiment. These skills are developed through scaffolded activities and exercises that become more sophisticated at each grade level. In this session, we will share classroom activities and assessment rubrics from grades 5-6, 7-8, and 9-10 so that participants can see how departmental collaboration has led to consistency across the curriculum.

10:00am – 10:50am M **Workshop: Beginner Biotech: Micropipetting Art and Gel Electrophoresis for Middle and High Schools** Meeting F

Speakers: Kristin Hennessy-McDonald

This workshop will show science teachers at the middle and high school levels a few easy ways how they can bring biotechnology to their classrooms and use them as part of a strong STEM curriculum.

First, we will show teachers how to micropipette and complete a few colorful and engaging micropipetting art activities. We will also go over other free micropipetting resources we have, as well as cover the different types of micropipettes for every budget.

Next, we will show the teachers the technique of gel electrophoresis using our super affordable Bandit™ STEM Electrophoresis Kit. We will also cover the accompanying high quality curriculum, allowing teachers to perform molecular biology labs on a budget that cover topics such as Mendelian genetics.

With our goal of making science accessible to everyone, everywhere, we hope to give workshop participants the knowledge and resources they need to bring biotech into their classrooms.

Upon completion of this presentation, participants will::
-Learn how to use a micropipette and explain why it is an important biotech technique
-Learn how to run gel electrophoresis and understand the science behind how this biotech technique works
-Have the knowledge and resources they need to bring biotech into their classrooms

10:00am – 11:50am E **How to teach a FOSS lesson Grades 3-5** North Hall B

Target Audience: New and New-to-FOSS 3-5 teachers, as well as experienced teachers who would like a refresher

This 2-hour session will focus on FOSS module instructional design, pedagogy, and instructional practices, including:

- Experience a model lesson through the lens of a learner
- Debrief active investigation, notebooking, and sensemaking
- Reflect on instruction
- Using your Investigations Guide

10:00am – 11:50am M **Workshop: Changing Planet: Using Biointeractive to Teach the Causes and Impacts of Climate Change** Meeting G

Speakers: Amy Fassler

Students are more engaged with the science of climate change than ever before. The HHMI Biointeractive Film The Science of Climate Change can be clipped into short segments and presented with a sequence of activities that allow students to understand how our climate system works, what is causing the current change, and the impacts these changes will have on global ecosystems. The workshop will provide participants strategies to teach some of the most difficult concepts to teach about climate change, including how we know what we know about Earth's changing climate and how we can solve these climate challenges. In this workshop participants will Investigate resources and construct a model to establish basic understanding of Earth's climate system.

Explain patterns and trends in data to understand how human activity is impacting CO2 concentrations, resulting in climate change.
Form complex explanations for how climate change is impacting ocean and terrestrial ecosystems.
NGSS Connections
Science and Engineering Practices
Developing and Using Models
Carrying Out Investigations
Analyzing and Interpreting Data
Constructing Explanations
Obtaining, Evaluating, and Communicating Information
Cross-cutting Concepts
Patterns
Cause and Effect
Structure and Function
Science is a Human Endeavour

10:30am – 12:00pm S **Snack tables, sponsored by Activate Learning, UW-Extension and WI Science Festival** Vendor Hall

11:00am – 11:50am C **Higher Education Roundtable** Mezzanine

Speakers: Joel Donna

This is part of the Higher Education committee work.

11:00am – 11:50am E **Science Pawsibilities: Unleashing Learning with Classroom Pets** Meeting C

Speakers: Kathy Biernat

Discover how classroom pets can transform science education! Learn to leverage these furry (and feathery and scaly) companions for engaging, hands-on lessons that spark curiosity.Delve into standards-based lesson plans and explore funding opportunities for your beloved classroom companion!In this engaging session, we'll showcase the countless benefits of having pets in the science classroom and how they can become invaluable teaching tools. Classroom pets are more than furry friends; they're catalysts for learning. We'll discuss how pets foster empathy, responsibility, and emotional development in students but also how they can help to teach the standards. We'll look into practical strategies and lesson plans, demonstrating how pets can be seamlessly integrated into science topics such as ecosystems, life cycles, and adaptation. While the rewards of classroom pets are immense, challenges can arise. We'll address common concerns, from allergies to classroom management, and provide solutions to ensure a smooth experience. You will hear about educators who have transformed their science classrooms with pets. Their inspiring stories will showcase the tangible impact of 'Science Pawsibilities.'

11:00am – 11:50am E **STEM Learning Beyond the School Day** Riverside Ball C

Speakers: Bernie Traversari, Tammy Moncel, Wendy Fuller, Dolly Ledin

Afterschool and summer programs have great potential to engage all kids in fun, motivating, authentic STEM experiences. OST educators need professional development, ideas and resources to engage youth. Learn what STEM looks like in an OST program, how it can engage students often left out in the classroom and how it can reinforce science and engineering skills. Hear about last year's grant projects at schools in Milwaukee and Lac Court Oreilles Ojibwe School and how you can apply this year!

11:00am – 11:50am G **Adding Local Phenomena to Existing Science Units (such as Storylines)** North Hall C

Speakers: Dennis Rohr, Aaron Burg, Kevin Anderson

We will actively involve participants in reflecting on the current local connections they make in their science classroom. We'll dig into a series of strategies for adapting existing storylines or other units to better connect to local contexts. Adaptations include the following: reflections and transfer tasks that focus on connecting local, related phenomena to the existing anchor phenomena; assessments with transfer tasks; substituting in local data for other data sets; and, substituting in or supplementing with locally relevant lessons. We'll discuss the challenges of changing the anchor phenomenon of an established unit while staying true to the learning goals of that unit. This session will use the core components of an educator module being developed for DPI's WISELearn database by a grant-funded group that's focused on localizing high-quality storyline units. We will also share the WISELearn Science Hub repository.

11:00am – 11:50am G **Empowering Young Explorers: Fostering Equitable Outdoor Learning Through a Statewide Resource Lending Program** Meeting D

Speakers: Heather Phelps, Laureanna Raymond-Duvernell

The Wisconsin Center for Environmental Education (WCEE) supports equity across environmental education by providing teachers and students with free access to tools that enhance their learning opportunities outdoors.

We've found through our work that kits reduce barriers to outdoor learning. Lesson plans are paired with specific teaching tools – ranging from solar panels to tape measures for trees – providing all educators with a stepping stone to teaching outdoors.

NGSS standards are met in the kits through the enhancement of natural world observations, exploration of tools to support inquiry, and design of models and experiments to solve real-world questions.

This interactive presentation will include discussion of the creation of these kits, how we are expanding our reach to traditionally marginalized populations across Wisconsin, and ample time for participants to explore the activities and tools contained in the kits.

Participants will leave with an increased understanding of how equitable access to hands-on tools can drive effective outdoor learning and how to replicate this model within your own program.

11:00am – 11:50am G **FOSS Introduction to Thinklink** North Hall A

Target Audience: New, New-to-FOSS and experienced teachers with little online experience.
This 50-minute session will focus on FOSS online resources available to support teachers and students, including:

- Teacher Prep Videos
- Student ebook
- Teaching slides
- Multimedia
- Creating and managing assignments for students

11:00am – 11:50am G **Students with IEPs in the Science Classroom** Meeting B

Speakers: Cindy Skinner

Like many general education teachers, you probably have students with IEPs mainstreamed into your classroom. Are you comfortable with having students with special needs in your class or do you feel a sense of discomfort or fear, or maybe even a feeling of being overwhelmed. What questions do you have and what questions should you be asking to best meet the needs of these students? In this session, I'll be providing you with an opportunity to find answers to those questions. As a 30-year veteran science teacher who is now an experienced special education teacher, I have some unique insights that will help you navigate the challenge of teaching special needs students, providing necessary accommodations and modifications, and your responsibilities as a member of the IEP team.

11:00am – 11:50am H **A Journey Through Two Years of Implementing the Illinois Storylines Phenomenon-Based Curriculum** North Hall D

Speakers: Tony DeGrand, Tom Davies

Our biology team is in the second year of using the Illinois Storylines for our General Biology classes. This storyline-based, phenomenon-driven, NGSS aligned, curriculum is a student-centered approach to teaching Biology. While we are not experts, we would like to share the story of our transition and the changes we have made from year one to year two. We will guide participants through an example of a lesson from a storyline. Additionally, we will share with you some of our successes and our struggles as well as tell you how you can learn more and try it yourself. By the way, the curriculum is free!

11:00am – 11:50am H **Co-Serving to Support Inclusion of Students with Disabilities in High School Science**

Speakers: Alison Taxis, Laura Ramthun Riverside Ball B

Attendees will be empowered with essential strategies to support students with a range of disabilities in high school science classrooms. We will cover our district philosophy of co-serving and explain how our process of collaboration has progressed over our 5 years in a co-serving team. Topics covered include addressing pros and cons of the system, explaining our process for determining alignment of standards for students of disabilities, and describing examples of learning styles of students served. Then, we will present sample accommodations and modifications while showing alignment to equivalent regular education work and how we organize our materials. Our district philosophy emphasizes inclusion as much as possible to provide all students opportunities to engage in the practices of science, and our structure has maximized opportunities for students with disabilities to participate alongside their same-age peers, especially in lab environments. Attendees are encouraged to bring IEP at a Glance documents for current students and questions or concerns about co-serving with special education teachers. We will end the presentation with work time to collaborate and discuss ideas for accommodating resources for students of attendees.

11:00am – 11:50am H **Concurrent enrollment as an alternative route to earn college credits** Meeting A

Speakers: Meredith Smith, Terrence Neumann, Jamie Schneider

Students taking AP and Concurrent enrollment courses expect an outcome of college credits. What is the difference? What are the requirements of each program choice? What are the pros and cons of each program choice? A college faculty member and high school AP and concurrent enrollment teachers will come together do discuss their experiences with these program options. Data on success rates between programs will be compared as will discussion of student attitudes and concerns for the different formats. Audience participation and discussion will be encouraged.

11:00am – 11:50am M **Make Learning (And Teaching!) Evolution Relevant and Fun** Meeting E

Speakers: Kathy Van Hoeck

A middle school science teacher will typically cover many areas of science within his/her annual curriculum, including earth science, physical science, and life science. It’s impossible to become an expert in all of these areas, at least not initially. The purpose of the Teacher Institute for Evolutionary Science (TIES) is to inform interested science teachers about the most up-to-date concepts of natural selection, common ancestry, and diversity for them to confidently cover the topics and fulfill their curriculum requirements. TIES provides innovative professional development opportunities, often in collaboration with scientists researching current evolutionary trends. TIES also has ready-to-use online resources, including presentation slides, labs, guided reading assignments, and an exam. We connect science teachers with experts in the field of evolutionary biology, both in person and online. Our project is run entirely by teachers because promoting teacher leadership is one of our goals. All lessons are aligned with NGSS. Teachers attending this workshop will gain confidence in teaching evolution standards, will be given access to a free website with numerous materials and perform sample labs and activities.

11:00am – 11:50am W **Workshop: New Teacher Network Workshop** Meeting F

Speakers: Megan Sprague, Jayne Ryczkowski

This workshop will provide time for new teachers to network and also work on anything to improve their teaching with the help of veteran teachers. Topics could include but are not limited to: NGSS implementation, assessment, classroom management, instructional design, communication with parents, leadership, etc. Bring any topic you'd like to work on and we will provide time and resources to help you!

12:30pm – 1:15pm **Friday Lunch Keynote** Riverside Ball A

1:00pm – 1:50pm		**Exploratorium** *Speakers: Ray Scolavino*	
1:30pm – 3:30pm	F	**Closed FT12: La Crosse Distilling Co.** Closed Cost $10, prior registration required Embark on a distillery tour at La Crosse Distilling Co. for a scientific exploration of the intricate processes behind spirit production. During the guided visit, delve into the action of fermentation and distillation, observing the precise application of scientific principles. The experience culminates in a tasting session, where the scientific precision of the distillation process manifests in the nuanced flavors of the final products.	
1:30pm – 3:30pm	F	**FT10: Grow La Crosse** Cost $5, prior registration required GROW La Crosse is a community non-profit on a mission to connect youth with healthy food and nature through hands-on garden based experiences. With partnerships at Western Technical College and area schools, GROW has 10 years of experience helping students relate more fully to nature and the food they eat. This trip will tour the operations at Western Technical College and give participants a feel for the experiences available to local students. *Kari Bersagel-Graley and Bonnie Martin of GROW La Crosse are the keynote speakers at Thursday's luncheon.	
1:30pm – 3:30pm	F	**FT11: Mississippi Valley Archeology Center** Cost $5. prior registration required The Mississippi Valley Archaeology Center (MVAC) at UW-La Crosse has been researching, preserving, and teaching about the archaeological resources of the Driftless Area for over 40 years. Join us for a tour of the MVAC lab to view exhibits focused on the archaeology of the region: projectile points from the four earliest Native cultures in Wisconsin, pottery, bone tools, and displays of finds from recent excavations, along with 3-D replicas of area rock art. The basement portion of the lab tour will cover such topics such as processing artifacts, curation, and viewing artifacts which are not usually available to the general public. Tours are provided by staff archaeologists available to answer questions you may have about why we dig in certain locations, the most common types of artifacts recovered, and how the available natural resources affected the lifestyles of the early people of Wisconsin. *Please note that the basement of the lab is not usually open to the public, and is therefore not handicapped accessible.	
2:00pm – 2:50pm		**Friday Lunch Keynote Follow up**	Riverside Ball B
2:00pm – 2:50pm	E	**Integrating Engineering Design Activities into the Elementary Science Curriculum** *Speakers: Adam Kramschuster, Lindsay Barnhart, Barb Bauer, Kevin Mason* The University of Wisconsin-Stout hosted a 3M STEM Camp for elementary teachers in the summer of 2023. This professional development opportunity was funded by a 3M STEM Education Equity Grant. The purpose of the 3M STEM Camp was to provide professional development and curriculum resources to help elementary teachers to integrate engineering design activities into the elementary science curriculum. The instructors of the 3M STEM Camp will be leading this session for elementary teachers who were unable to attend the summer camp. This session will introduce elementary teachers to the engineering design process and how to use engineering design activities to teach the science and engineering practices of the Next Generation Science Activities. The session will share examples of the engineering design activities used by teachers at the camp and in their own classrooms. Finally, the participants in this session will have an opportunity to share other science and engineering activities they have used to teach the science and engineering practices of the Next Generation Science Standards in their classrooms.	Riverside Ball C
2:00pm – 2:50pm	G	**After School Network Roundtable** *Speakers: Kristin Michalski, Dolly Ledin*	Mezzanine

2:00pm – 2:50pm G **FOSS Introduction to Thinklink** North Hall A

Target Audience: New, New-to-FOSS and experienced teachers with little online experience.
This 50-minute session will focus on FOSS online resources available to support teachers and students, including:

- Teacher Prep Videos
- Student ebook
- Teaching slides
- Multimedia
- Creating and managing assignments for students

2:00pm – 2:50pm G **Meet your District 2 Director** North Hall D

Speakers: Tom Davies

This is an informal session that will start with myself briefly introducing myself, my role as a director, and my journey here at WSST, followed by an opportunity to hear from other members in your district. In this session we plan to network and share ideas on ways we can stay connected throughout the year, plan socials, and other professional development opportunities based on the needs specifically for educators/enthusiasts in our district.

2:00pm – 2:50pm G **Storylines Round Table** North Hall C

Speakers: Amy Workman, Aaron Burg

We will meet as a large group and then make some group based decisions on whether to as a large group or break apart into subsets. Journeying into storyline instruction requires a specific set of facilitation skills that take time to develop. Developing these skills with a network of peers throughout the state championing your efforts can help in this process. Whether you are a veteran storyliner or just hearing about storylines at this conference, there will be a place for you in this session. This session is being coordinated with DPI HQIM Grant team.

2:00pm – 2:50pm H **Energy Education is for Everyone...and it Starts Now!** Meeting D

Speakers: Joseph Phillips, Samara Hamzé

The educational community siloes subject matter into separate categories such as math, English, social studies, sciences, and technical education. However, we have an opportunity to embark on a pedagogical journey that unifies every subject and student: energy education. In fact, our very future depends on it. As we witness the planet change before our eyes at a rate that is more rapid than we could have imagined, ecological and social stability rest in the hands and minds of current and future generations. As an educator, I have used energy education to teach students math, writing, technical education and civic engagement from elementary to high school. I've explored and hosted hands-on events like KidWind, attended educational events at CREATE Institute and MREA, and introduced our state's First Annual Energy Career Fair. I've utilized resources from KEEP – Wisconsin's K-12 Energy Education Program – that directly impact students of all socioeconomic backgrounds and have found it easy to align all instruction to NGSS. Bring your thoughts and voices to this presentation and explore how energy education can change your academic approach while saving our planet.

2:00pm – 2:50pm H **Journey from Sequence to Structure with Amino Acids Unveiled!** Meeting C

Speakers: Mark Arnholt

This workshop is designed to empower teachers to understand the properties of amino acids and the fundamental principles of protein folding. Participants will explore the unique properties of amino acids, their structures, and their role in the secondary, tertiary, and quaternary structures of proteins. Hands-on modeling will allow teachers to model amino acid interactions and emphasize the importance of sequence and structure in protein function. Through these modeling activities, teachers will explore the fascinating process of protein folding and its significance in cellular functions. Strategies, resources, and classroom activities will be provided to facilitate critical thinking in students while captivating their imaginations of a molecular world.

2:00pm – 2:50pm M **Integrating the Learning For Justice Standards** Meeting E

Speakers: Claire Bernatz

Learning for Justice is "Teaching about IDJA allows educators to engage with a range of anti-bias, multicultural and social justice issues. This continuum of engagement is unique among social justice teaching materials, which tend to focus on one of two areas: either reducing prejudice or advocating collective action." This provides an actionable step in someones equity work within the classroom. During this presentation, audience will receive resources to the Learning for Justice Standards, and time and professional help to integrate into their incoming lesson.

2:00pm – 2:50pm M **Maximizing Classroom Resources through the Civil Air Patrol Aerospace Education Membership Program** Meeting A

Speakers: Lt Col Todd Mandel

The Civil Air Patrol provides opportunities for science educators to become Aerospace Education members through a one-time enrollment process. This one-time enrollment unlocks a trove of benefits and resources for K-12 STEM educators, however many educators remain unaware of the opportunities and resources that are available at no cost to them and their classrooms. This presentation will outline the opportunities that come from an Aerospace Education membership which include access to free STEM kits, eligibility for Air Force Association grants, access to curriculum materials, support from local Civil Air Patrol squadrons, and opportunities for educators to fly in CAP aircraft at no charge each year. Additionally, the presentation will discuss best practices for maximizing the impact of membership across buildings and districts and how to strategically leverage the resources and impact of the program.

2:00pm – 2:50pm M **Introduction to Energy Storage: Batteries in Series and Parallel** Meeting F

Speakers: Scott Liddicoat, Miranda Esser

This hands-on laboratory activity is a basic, but critical introduction to batteries, battery connections and battery terminology. Its primary objectives are to reveal to students the volts and amp-hours relationships that occur when batteries are wired in series and parallel arrangements. Student understanding in this area is foundational for further studies in renewable energy and energy storage.

Batteries in Series and Parallel is designed to be user-friendly, flexible and inquiry based. Depending on your preferences, grade level and student aptitude, you may use it self-paced, teacher-paced or somewhere in between. Batteries in Series and Parallel includes everything you need to be successful in teaching your students: Student lesson, student response guide, instructor guide (with answer keys), self-guiding PowerPoint, equipment list, and connections to relevant NGSS standards.

The student materials for this lesson have been designed to be accessible to people with disabilities (Section 508 compliant).

2:00pm – 2:50pm M **Leveling Up Assessments (HS/MS)** Meeting B

Speakers: Raymond Nall, Michelle Kramer

As part of the International Baccalaureate, out students in the middle years program (MYP) are assessed on a standards-based criterion framework. Criterion A: Knowledge and Understanding, is often used to assess a student's mastery through a pen and paper test. Mr. Raymond Nall and Ms. Michelle Kramer will present on how they have assessed exams using markbands (i.e. rubrics required by the MYP). Additionally, they will share how they design tests with leveled sections, which allows teachers to reward mastery without needlessly docking mistakes that are not due to lack of knowledge or ability. Exams are graded using markbands, and advancement to higher markbands does not require 100% on each section. Mr. Nall and Ms. Kramer will walk you through how tests are built and assessed. Attendees will be invited to assess a test with us to understand how we norm our assessments to ensure students are being graded the consistently across a class with more than one teacher.

2:00pm – 3:50pm E **How to teach a FOSS lesson Grades 6-8** North Hall B

Target Audience: New and New-to-FOSS 6-8 teachers, as well as experienced teachers who would like a refresher

This 2-hour session will focus on FOSS module instructional design, pedagogy, and instructional practices, including:

- Experience a model lesson through the lens of a learner
- Debrief active investigation, notebooking, and sensemaking
- Reflect on instruction
- Using your Investigations Guide

2:00pm – 3:50pm W **Workshop: Standards-based grading in a points and percentage world!** Meeting G

Speakers: Jessica Culberson, Eric Pantano

The purpose of this workshop is to introduce a hybrid grading system that capitalizes on many of the benefits of Standards-Based Grading (SBG), while fitting into a school environment that is primarily focused on points, percentages, and letter grades. Teaching to standards is typically encouraged in science education, and the benefits of SBG in the context of student learning and success are very clear. Yet many schools still operate with traditional grading systems. Teachers who seek to capitalize on the strengths of SBG are often left without many options, as their grades must align with their school system.

The workshop format will consist of a description of the hybrid system developed over three years. The presentation will describe the rationale behind creating the system, the approach used to develop the system, the generation of the Learning Targets used for each unit, and the methods used to garner buy-in among the various stakeholders at our school. The evolution of the system will also be discussed.

In the application portion of the workshop, attendees will collaboratively begin to adapt the system to their own courses. Focus will be given to developing Learning Targets that can be tied to NGSS (or any) standards. This will be a collaborative effort, with teachers from different schools and backgrounds working together to develop focused, concise Learning Targets for their courses. Finally, workshop participants will begin to develop assessments that can be used with the system. Simple backward design will be explained and implemented, so that attendees can take these assessments back to their practices.

3:00pm – 3:50pm E **Strengthening Opportunities for Science Teacher Learning** Meeting C

Speakers: Julie Luft

In this session, I will address how to strengthen the learning of science teachers and educators. My first set of comments will be about NSTA and how the association supports science teacher leaning. My next set of comments will be about what the research says in terms of supporting science teacher learning. The studies will discuss offer concrete suggestions to ensure science teachers continue to build their knowledge and skills.

3:00pm – 3:50pm G **Building agency, values and community through consensus and student discourse** Meeting A

Speakers: Aaron Burg

Participants in this sessions will engage with the idea that there might be a frame that can be established and reused anytime class consensus building is important. For example, this protocol could be used early in the year to develop the working agreements for the classroom. A similar technique could be used to surface what the class considers valuable when creating models, selecting evidence, or formulating reasoning.

Using this lens in one's classroom causes the teacher to consider how to maximize student talk time -- get the kids talking more and the teacher talking less.

If we want students to have opportunities to engage in authentic sensemaking, they need to have structures in place that enable purposeful and meaningful discourse. When students are part of setting up the boundaries for what is productive in the learning space, the classroom community will be designed in such a way to promote risk taking while "trying on" new ideas.

Participants in this session will examine the idea that NGSS, 3-dimensional learning, requires teachers to use strong facilitation skills to support student sensemaking. Specifically, participants will contemplate what skills are needed to support SEP1, 2, 3, 6, 7, and 8.

--Working with the ChemLEAP Community out of UW Madison

3:00pm – 3:50pm G **Energy Conservation: Using your School Building as an Energy Education Tool** Meeting D

Speakers: Scott Anderson, Heather Feigum, Wendy Stelzer

During this session participants will examine how to use their own school building in a place-based format to learn about energy and energy conservation. High School Math and Engineering teacher Scott Anderson and his Energy Team students will share how they developed identity and agency as they led a building-wide energy audit of their school using utility-grade tools including light meters, watt meters, infrared thermometers, and cameras (which participants can trial during the session). Participants will learn about the installation of an electricity datalogger on their building and how students used the datalogger to hone the NGSS science and engineering practices of asking questions, analyzing and interpreting data and then ultimately developing an energy policy for their school.

Wendy Stelzer, KEEP Youth and Community Engagement Specialist, and Heather Feigum, Focus on Energy Program Manager, will build upon the experiences that Scott and his students share. They will describe the environmental (and economic) benefits of school building energy conservation and share free state-wide programs and resources that allow all schools to access energy audit tools, electricity dataloggers, energy lessons and activities, as well as vital contacts when planning school energy efficiency upgrades. Energy career pathways will also be explored. (199)

3:00pm – 3:50pm G **The Devil's Element: Phosphors and a World Out of Balance - Book Study** North Hall C

Speakers: Kevin Anderson

This will be the in-person session of the 2024 WSST Book Study, digging into the book by Dan Egan. We'll make it an informal book study-like discussion with practical ideas for classroom application. Participants will not need to have been in the book study or have read the book, though connections will admittedly be easier if they have. There's a small chance we'll get a guest presenter to facilitate with Kevin.

3:00pm – 3:50pm G **Unboxing your FOSS kit** North Hall A

Target Audience: New and New-to-FOSS teachers

This 50-minute session will focus on unboxing your FOSS kit and planning to teach FOSS, including:

- What's in the box
- Materials management
- Preparing materials for the investigation
- Planning for the investigation
- Guiding the investigation

3:00pm – 3:50pm G **WSST District 5 Round Table** Mezzanine

Speakers: Sara Krauskopf

This session, facilitated by WSST District 5 Director, Sara Krauskopf, is an opportunity for science educators living in the same region to network and share ideas. Participants will have a chance to meet new people, share local resources and events and bring up ideas for further collaboration between members.

3:00pm – 3:50pm M **"The OpenSciEd Instructional Model: Routines for Advancing Students Through a Storyline"**

Speakers: Tracy Marmolejo Meeting B

An OpenSciEd unit storyline is a logical sequence of lessons that are motivated by students' questions. It is a science storyline because the questions arise from students' interactions with phenomena. OpenSciEd storylines are designed to provide students with the goal of explaining a phenomenon and/or solving a problem. Each step is designed to enable students to make progress on their questions by using science and engineering practices to help figure out a piece of a science idea. Each piece they figure out adds to the developing explanation, model, or designed solution. Each step may also generate new questions that add to students' work in the storyline. As a step-wise process of questioning, investigating, and building understanding, a storyline provides a coherent path toward building a disciplinary core idea and cross-cutting concepts, anchored in students' own experiences and questions. dufing this seesion teachers will experience an Anchoring Phenomenon and explore the 5 routines that are embedded in the storyline.

3:00pm – 3:50pm M **Improving Science Literacy Through Portfolios** Meeting E

Speakers: Mary Ellen Kanthack

Attendees will be able to identify grade level expectations of the Claim Evidence and Reasoning model, apply and develop benchmarks, a rubric, and a portfolio.

Content: We will look at NGSS and the CER model to help develop Benchmark standards and develop a rubric using examples.
We will explore these questions: What is expected at what grade level? How can we discuss differentiating rubrics and leveled rubrics. How can we use these things to strengthen reading and writing skills as well as science investigation skills?
Strategies for keeping up with grading and parent inclusion will also be included!

We will explore Google Sites as an online portfolio resource and explore other possible options. Step by step instructions of how to teach the set up of the portfolio will also be included in the presentation.
Attendees will use one familiar or past lesson and design a page as a model to take back to the classroom.

3:00pm – 3:50pm M **Open Sci Ed Workgroup** North Hall D

Speakers: Maureen Mattoon, Darsha Olsen

Open Sci Ed is an OER, using Storylines to fully support NGSS. Participants in this session will drive what we work on today, with individual needs and skills taken into account. Some possibilities include making materials more accessible for students entitled to an IEP and those who are learning English, simplifying student instruction, modifying slides to be more legible, etc. Share what you have already made (if applicable), explore resources available in the facebook groups, and connect with others using Open Sci Ed!

4:00pm – 5:00pm **Town Hall Meeting** Riverside Ball B

Speakers: Kristin Michalski, Dennis Rohr

5:30pm – 6:30pm S **Pre-banquet Social** Riverside Ball A

Open to all members, whether you are attending the banquet or not. Join us for drinks and fellowship before the awards banquet starts. This is a great time to talk about conference highlights to friends both new and old.

6:30pm – 8:30pm S **The Milton Pella Banquet** Riverside Ball A

The Milton Pella Banquet is a more formal social where WSST awards and grants are presented to deserving participants. The banquet is a great way to wind down, enjoy a fine dinner and show your appreciation and support to the award recipients. Pre-registration is required for the dinner.

8:30pm – 11:30pm S **After Banquet Social** Freight House

Open to all, whether you attended the banquet or not. Join us at a local LaCrosse supper club, The Freight House, a short walk from the convention center, as we wrap up the last night of our conference. Come for live music and conversation. Starts 30 minutes after the banquet ends.