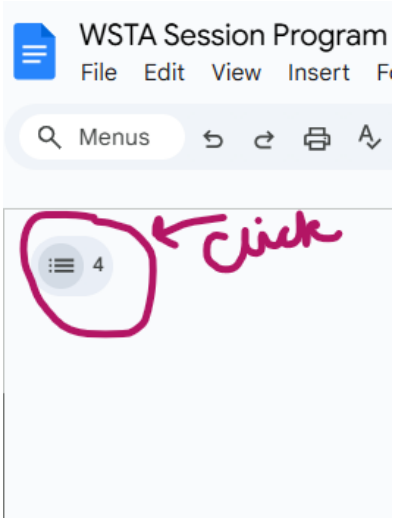
Schedule Overview

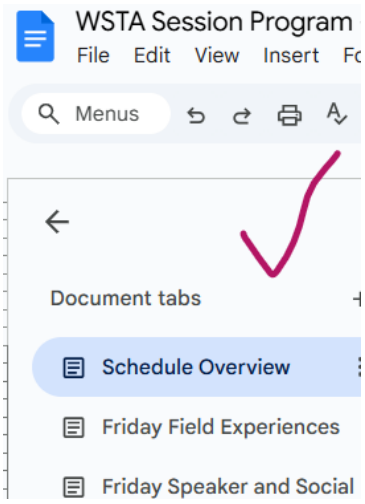
Welcome to the Washington Conference on Science Education Program!

Schedule Overview

Friday October 24, 2025		Saturday October 25, 2025	
1:00 pm	Field Experiences	7:15 am	Check-In Opens
5:00 pm	Speaker for Sci. Leadership Lab	8:00 am	Welcome + Keynote
6:00 pm	Social at 7 Seas Brewing	9:15 am	Sessions 1 - 3
7:30 pm	Social Ends	12:30 pm	Lunch, Awards, Plenary
		2:00 pm	Sessions 4 - 6
		5:25 pm	End

To navigate this document, use the tabs at the left to access the full descriptions of each section of the conference! If you can't find the tabs use the images below to help you.The left shows the tabs bar as closed. Click the little gray circle and it will expand to look like the picture on the right.





Conference Prep Guide

🧪 Washington Conference on Science Education 2025 Conference Prep Guide

Location: UW Tacoma
Dates:

- **Friday, October 24** – Field Experiences, Speaker & Social
    - 1:00 Field Experiences, 5:00 Speaker, 6:00 Social
- **Saturday, October 25** – Full Conference Day
    - 7:15 Check-In Begins, 8:10 Conference Opening, 5:25 Conference Ends

Theme: *You Matter. Science Matters. More Than Ever.*

✅ To-Do List Before You Go

☐ **Review the Conference Program**

- Find the full session and field experience descriptions
- Check out maps and parking information
- Read the bios of our featured speakers
- Review it here.

☐ **Select Your Field Experience and Session Choices**

This is a must do if:

- You plan to attend a field experience AND/OR
    - ☐ LeMay Car Museum
    - ☐ Museum of Glass
    - ☐ Washington State History Museum
    - ☐ Flett Creek Outdoor Learning Lab
- You want to attend Paul Andersen's workshop (he is also giving a keynote for everyone.)
- It will help you select your sessions and one lucky responder will win a free registration to next year's conference! (Note: you are not bound to these session selections if you change your mind.)
- Select your sessions and field experiences here.

☐ **Create a Parking Plan**

- If you will be driving to the conference, we hope you will carpool!

- In the conference program you can find parking maps and information from UW Tacoma. There are many lots on campus and public street parking available.

🥗Meals

- We will have free and locally roasted coffee and tea on Saturday morning along with a selection of pastries.
- All attendees will receive a boxed lunch of either a salad or sandwich from Ingallina's, we got a wide selection! For those who noted food allergies or specifics about their food we will have a special table for you to pick up your lunch from.

🎉Activities:

We will have a few fun side activities running during the conference that you can engage in!

- Nerdy T-Shirt Contest: Wear your best nerdy (and punny) science gear to win prizes at lunch.
- Exchange Table: Have an extra lab coat, awesome science book, maybe some cool science stickers you aren't using? Please bring items that you would like to make sure get into the hands of other science teachers!

🎒 What to Bring

- ☐ Device for session notes
- ☐ Water bottle & snacks
- ☐ Comfortable walking shoes (especially for field trips)
- ☐ Layers for unpredictable fall weather
- ☐ Business cards or contact info for networking
- ☐ Curiosity and energy!

You do NOT need to bring any confirmation of your registration to check-in at the conference.

If you have any questions, don't hesitate to contact us.
WSTACommunicationsTeam@gmail.com

Friday Field Experiences

Friday Field Experiences

All field experiences start at 1:00 pm, you are free to leave when you wish! Please make sure to register for these on the Doodle Poll so we know who is planning to come.

Flett Creek Learning Lab Field Experience

Join us for an immersive walk through the Flett Creek Learning Lab, a rich restoration site nestled between Clover Park schools and stewarded by Clover Park Technical College. Hosted by Hannah Newell and joined by restoration expert Derek Faust, this experience invites educators to explore plant diversity, native species knowledge, and community partnerships in outdoor science learning. Expect tall grasses, uneven terrain, and big ideas for using nearby natural spaces as living classrooms. Come ready to connect, reflect, and get inspired—just don't forget your sturdy shoes!

Meet at: 4500 Front St SW Clover Park Technical College Bldg 19 Lakewood, WA 98499

- The address will take you from Steilacoom Blvd to turn south at a traffic lighted crosswalk & Hageness Dr, into the Clover Park Technical College parking lot, then you will go straight through the traffic circle, then the road will curve to the left into the parking lot at Bldg 19. The bus also stops near the crosswalk at Hageness and Steilacoom Blvd
- look for sandwich boards to guide you to our meeting area, from there we will walk together across Steilacoom Blvd to Flett Creek

Day of Contact: Hannah Newell (480)766-2937

LeMay Car Museum Field Experience

Explore the science behind speed, design, and innovation at LeMay – America's Car Museum. This field experience invites educators to discover how physics, engineering, and environmental science intersect with automotive history. From aerodynamics to alternative fuels, you'll leave with ideas for connecting STEM concepts to real-world technologies and student interests.

Meet at: The Museum Lobby, 2702 E D St, Tacoma, WA 98421 (You can take the train from UW Tacoma!)

Day of Contact: Carmen Kardokus 916-521-0343

Washington State History Museum Field Experience

Explore the intersections of science, history, and place at the Washington State History Museum. This experience invites educators to discover how local stories, Indigenous knowledge, and historical artifacts can enrich science instruction. Engage with exhibits that highlight Washington's natural history, innovation, and resilience—and leave with ideas for integrating social context into your science classroom.

Meet at: The Museum Lobby, 1911 Pacific Ave, Tacoma, WA 98402

Day of Contact: Marcia Garrett 206-200-4701

Glass Museum Field Experience

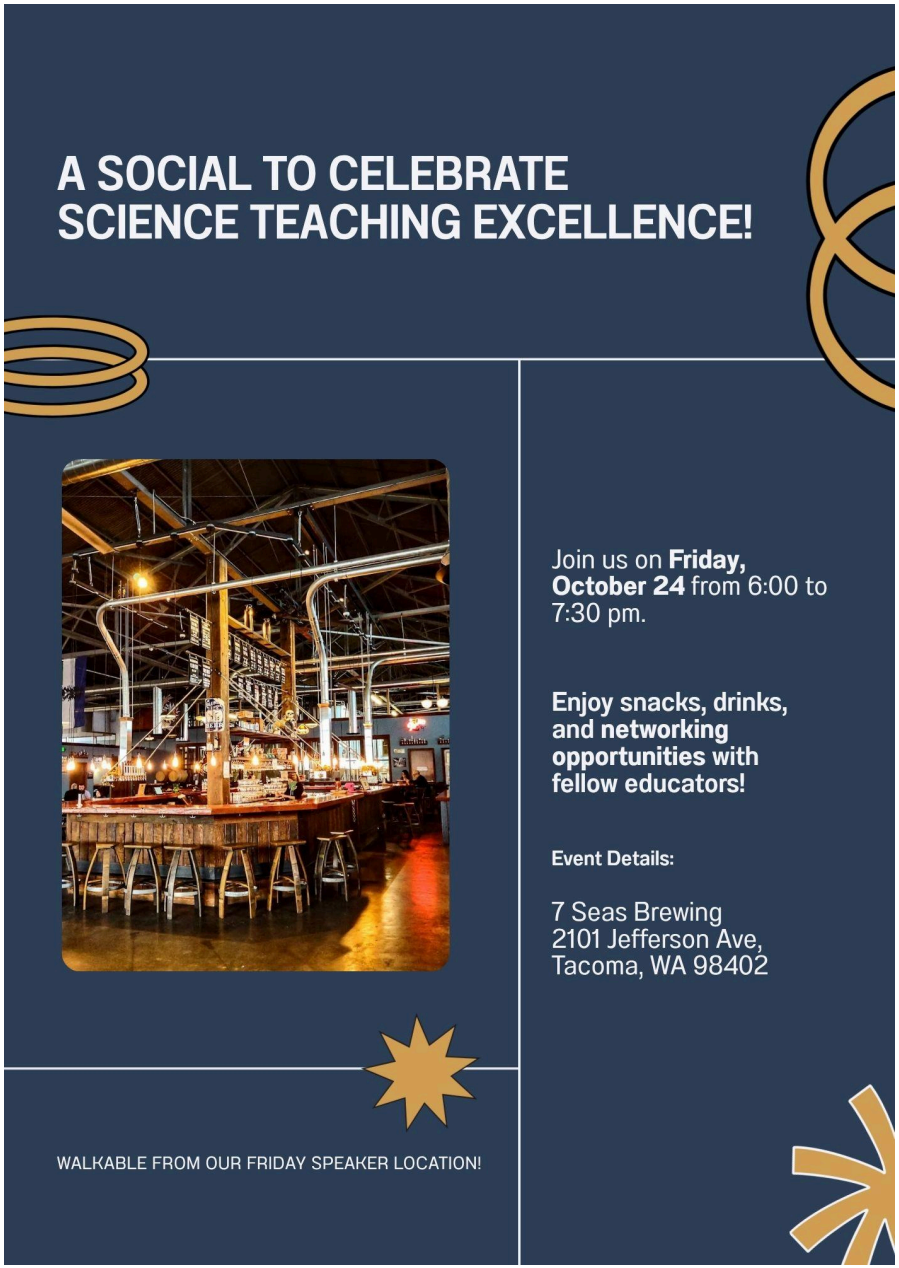
Step into the intersection of art and science at the Museum of Glass in Tacoma. This experience invites educators to explore the chemistry, physics, and engineering behind glassmaking while watching live demonstrations in the Hot Shop. Discover how heat, structure, and transformation come together in this dynamic space—and leave inspired to bring STEAM connections into your classroom.

Meet at: The Museum Lobby, 1801 Dock St, Tacoma, WA 98402

Day of Contact: Don Pruett - (253)389-3058

Friday Speaker and Social

Friday Evening: Speaker at 5:00 and Social at 6:00



Saturday Session Descriptions

Saturday Session One-Page Overview

Link to Sortable Session Overview Here!

Full Session Descriptions by Time Below!

	Featured			Elementary	Inclusion	Life Science	Physcial Science	Earth + Climate	Pedago
	Joy 215	BB 106	BB 104	BHS 107	GWP 101	CP 108	Joy 114	CP 105	BHS 103
Session 1	UW Fowler/Bell Equity & Justice K-12 STEM	Shelton Anatomy in Clay 6-12 STEM	Foss + Leonard Literacy Integration K-5	D Hanuscin Salish Sea 3-5 STEM	IslandWood + Street Inclusion K-12 STEM	Fred Hutch Elephants & Cancer 9-12 STEM	B Hill Patterns Physics 9-12 STEM	ISB + Steffens Microplastics 6-12 STEM	ADI + V Discu 6 STI
Session 2	A. Sanchez Science Relevance K-12	Carolina Explore OpenSciEd K-12	Foss + Leonard Optics + Sci Circle K-12	ADI + V Sampson Literacy + Sci. K-5 STEM	C Ryba Trad. Eco. Knowledge 6-12 STEM	Fred Hutch Mussels & DNA 9-12 STEM	S Adams PhET 6-12 STEM	DNR + Sobetski Land Mapping 6-12 STEM	M Su POGI 6-
Session 3	P. Andersen 3D Mini Lessons K-12		J McNamara NGSS Resources K-12	WDFW + Eckenrod Pollinators K-5 STEM	N Agnihotri NGSS Inclusion K-12 STEM	R Townsend Medical Bias 9-12 STEM	H Jaramillo PBL Clean Energy 9-12 STEM	D. Pruett Moving Water 9-12 STEM	S Gers Beyond K- STI
Session 4	P. Freeland Consciousness K-12	Carolina Elem. Sensemaking K-5	Biozone + Taylor Work Texts 9-12 STEM	K Astle Elem. OpenSciEd K-5 STEM	IslandWood + Street Localizing Amp. K-8 STEM	MiniOne + E Fong Cow Genetics 6-12 STEM	IMOD + Long Quantum Ag 9-12 STEM	ESD 171 + Haug Climate Data Sci. 6-12 STEM	T Nicpar WWII 3 STI
Session 5	UW Fowler/Bell Indigenous Climate K-12 STEM	Carolina Explore OpenSciEd K-12	Larson Museums & STEM 6-8 STEM	NSEA + Zabel Salmon in Place K-5 STEM	A Wilk PBL 6-12 STEM	W Baur Biochem & Lunch 6-12 STEM	IMOD + LOng Solar Panels 9-12 STEM	Burke + Watrin Fossils K-12 STEM	T Nicpar Desig K-
Session 6				K Tingle STEM Integration K-5 STEM	J Simondet Social Justice K-12	IMOD + Eldridge Quant. Photosynth. 6-12 STEM		E Williams Art + Space Science 6-12 STEM	J Vasili Lvl of Un K- STI

Session 1: 9:15 - 10:05 am

Joy 215 - Featured Speaker
Supporting Equity and Justice Through Science and Engineering Instruction: The Road Traveled and the One Ahead
Presenters: Dr. Kelsie Fowler & Dr. Phil Bell, UW College of Education
All students have the right to develop a deep understanding of how the world works in ways that support their personal goals and the interests of their community. Come explore how instruction can more equitably support science learning that is consequential to your students and their communities.
Topics: Culturally Sustaining STEM, Pedagogy
Grade Level: K–12
Style: Hands-On Workshop
✅ **STEM Clock Hours**

BB 106
Engaging Your Anatomy Students Through a Hands-On Approach
Presenter: Taelar Shelton, Anatomy in Clay
In this session, you will learn ways to increase student engagement and academic achievement in your health science and anatomy programs without relying upon the availability (or cost) of preserved specimens! This active, kinesthetic approach to anatomy reinforces learning, rewires memory pathways that only tactile experiences can employ, and empowers students with a strong sense of accomplishment. The activity of building the human in a hands-on environment, not simply viewing it, is a powerful and engaging method of learning anatomy.
Topics: Life Science, Pedagogy
Grade Level: 9–12
Style: Hands-On Workshop
✅ **STEM Clock Hours**

BB 104
Science and Literacy Integration: The Science ClassWilliam Philip Halleets the Science of Reading
Presenter: Jaime Leonard, FOSS published by School Specialty
Discover how rich, inquiry-based learning enhances science knowledge and the skills needed to increase language comprehension. This session integrates Scarborough's Reading Rope principles with three-dimensional science teaching, using a FOSS program lesson for context. Perfect for today's busy elementary educators who teach it all.
Topics: Elementary, Integration

Grade Level: K–5
Style: Hands-On Workshop

BHS 107

Explore the Salish Sea: Engineering Since Time Immemorial

Presenters: Debi Hanuscin, Josie Melton, Sarah Voss, Western Washington University Taraleen Wildly, Carley Solberg, Bellingham Public Schools , Richard Greer, Mukilteo School District, Michelle Hubbert, Mr Baker School District

The FREE Explore the Salish Sea curriculum, developed by the SeaDoc Society and available through PEI, weaves together Western and Indigenous science and engineering. In this session, teachers from the Culturally Responsive Elementary Teaching (CREST) project at WWU will share how they engaged students in an NGSS-aligned unit called Ocean Tech. Teacher attendees will have an opportunity to learn about how engineering has been practiced since time immemorial, as well as how modern remote-operated vehicles (ROVs) can be designed and used by students to investigate their local marine ecosystems. Emphasis will be on how different teachers adapt the materials for use with their students, focusing on instruction that is culturally responsive and equitable. This project is funded by the National Science Foundation.

Topics: Elementary, Engineering, Culturally Sustaining STEM
Grade Level: 4–8 (upper elementary and middle)
Style: Hands-On Workshop
✅ **STEM Clock Hours**

GWP 101

Increasing Inclusion, Engagement, and Relevance in Your Science Classroom

Presenter: Brad Street, IslandWood

Explore teacher-developed adaptations that incorporate student experiences, families and local communities to support making science meaningful and relevant for students who don't usually see themselves in the science classroom. Review student work examples at your grade band and then adapt a localized activity for use with YOUR students.

Topics: Culturally Sustaining STEM, Pedagogy
Grade Level: K–8
Style: Hands-On Workshop
✅ **STEM Clock Hours**

CP 108

Why Do Elephants Rarely Get Cancer? Exploring Genomic Evolutionary Adaptations and the Role of a Tumor Suppressor Gene

Presenter: Laurie Matthews, Seattle Prep; Dr. Kristen Bergsman, Fred Hutchinson Cancer Center; Dr. Jeanne Chowning, Fred Hutchinson Cancer Center

Biology teachers: Come explore a free curriculum unit from Fred Hutchinson Cancer Center. We will investigate the low incidence of cancer in elephants using evolutionary clues from five animals, gel electrophoresis results, genomic database exploration, p53 protein model building, and applications to human cancer. Bring your laptop if possible.

Topics: Life Science, Pedagogy

Grade Level: 9–12

Style: Hands-On Workshop

✅ **STEM Clock Hours**

Joy 114

Joyful Sensemaking: Centering Fun to Power Student Engagement in Patterns Physics: Energy and Engineering Unit

Presenter: Bradford Hill, NSTA District XVII Leader at Mountainside High School, Beaverton, Oregon

This memorable, NGSS-aligned unit has students code bungee jump app, iterate models and design solutions, and jump a decorated water bottle. Scaffolded talk routines support equitable discourse, sensemaking, and troubleshooting engineering solutions. A classCP 108avorite, it meets three PEs and builds toward a fourth. Free and open source: Patterns Physics—https://hsscience4all.org/physics.

Topics: Physical Science, Engineering

Grade Level: 9–12

Style: Lecture

✅ **STEM Clock Hours**

CP 105

Microplastics in the Arctic: Mega Problem?

Presenters: Barbara Steffens and Claudia Ludwig, Institute for Systems Biology

Explore a new 2-week set of lessons that guides high school students on an adventure, tracing microplastics from local systems into the Arctic. Students experiment and use global models to investigate the potential impacts of microplastics in the Arctic while building optimism as they take action for change.

Topics: Earth Science, Outdoors/Environment

Grade Level: 9–12

Style: Hands-On Workshop
✅ **STEM Clock Hours**

BHS 103
Structuring Student Discussions to Increase Participation and Deepen Collaborative Sensemaking
Presenter: Dr. Victor Sampson, University of Texas - Austin
Join this interactive workshop to learn how to foster student-centered, inquiry-driven learning through meaningful conversations. Engage in hands-on activities to explore strategies for designing lessons that encourage collaborative, inclusive discussions. Walk away with practical tools to enhance student sensemaking and ensure every voice is heard in your classroom.
Topics: Pedagogy, Culturally Sustaining STEM
Grade Level: 9–12
Style: Hands-On Workshop
✅ **STEM Clock Hours**

Joy 104
Salmon Heroes to Orca Actions
Presenter: Hanna Jones, Environmental Science Center
Join the Environmental Science Center to hear about our curriculum focusing on the local phenomenon of salmon and Southern Resident orcas. Participate in a selection of hands-on activities designed to highlight the ecosystem connections of salmon, orcas and local watersheds, while utilizing the schoolyard and community as an outdoor classroom.
Topics: Outdoors/Environment, Life Science
Grade Level: 6-8
Style: Hands-On Workshop
✅ **STEM Clock Hours**

Joy 105
It Takes A Community: Partnerships for Authentic Science Experiences for ALL
Presenter: Jen Crump, Tacoma Public Schools
Learn how community partnerships can provide authentic science learning experiences for all students that empower them to see science as a way to make their city a better place.
Topics: Outdoors/Environment, Culturally Sustaining STEM
Grade Level: K–12
Style: Lecture

Joy 106

AI Literacy and Ethics in Educational Assessment (Double Session w/ Session 2)

Presenter: Dr. TingTing Li & Dr. Peng He, Washington State University College of Education

The workshop begins by introducing participants to the technical and conceptual underpinnings of generative AI, particularly how large language models such as GPT-4 are trained and how they generate human-like responses from structured prompts. Participants will explore task generation, examine ethical considerations such as bias and cultural relevance, and collaborate on responsible use principles. Through case studies and group work, teachers will gain practical strategies and a framework for evaluating AI-generated materials to support equitable, meaningful learning. Participants will leave with a shared framework for evaluating the quality, usefulness, and risks of AI-generated materials, grounded in their values as educators.

Topics: AI and Tech, Pedagogy, Assessment

Grade Level: K–12

Style: Hands-On Workshop

✅ **STEM Clock Hours**

William Philip Hall

Intro to Professional Learning for Pre-Service Teachers

Presenter: Johanna Brown, Office of Superintendent of Public Instruction

Kickoff the conference with a special session for pre-service teachers. Join a roundtable discussion with experienced science teachers and leaders that can welcome you to the world of professional learning and how to grow your supportive science teaching network from now through your entire career!

Topics: Pre-Service Teaching

Grade Level: K–12

Style: Round Table Discussion

Session 2: 10:30 - 11:20 am

Joy 215 - FEATURED SPEAKER

Science that Matters: Generational Relevance, Consequence, and Thriving Futures

Presenter: Dr. Anastasia Sanchez, Puget Sound Educational Service District

At this moment in history, science matters more than ever—not only for discovery, but for justice, belonging, and the thriving of generations. Yet science education too often lags behind both emerging research and the lived realities of youth. Research shows that when science learning connects to identity, belonging, and real-world contexts, students—particularly those historically underrepresented in STEM—develop stronger science identity and efficacy. Today's youth are navigating converging crises—climate change, health inequities, systemic injustice—while simultaneously engaging with technology, activism, and community to imagine new futures. They are calling on us to make science education consequential and generationally relevant. This session invites educators to reimagine science as a force for equity, transformation, and possibility. Together, we will explore pedagogies that connect science learning to urgent issues of health, climate, identity, and resilience, while positioning students as vital change agents. A highlight will be the sharing of a STEM Education Manifesto presented by the PSESD Youth Wisdom Council, powerfully naming why science must center their realities and aspirations.

Topics: Culturally Sustaining STEM, Pedagogy

Grade Level: K–12

Style: Panel

BB 106

Exploring High Quality OpenSciEd Instructional Materials for K–12 from Carolina

Presenter: Jeff Frates, Carolina

Come experience a hands-on lesson from OpenSciEd from each grade span, kindergarten through high school. Discover how the new Carolina Certified Version enhanced these high-quality instructional materials, making them more accessible, user-friendly, and safer for classroom use. These enhancements include easier to use materials for less prep, additional assessment to support student sensemaking, support for over 200 languages, and more. Leave with resources so you can try OpenSciEd in your classBHS 103mmediately.

Topics: Pedagogy, Integration

Grade Level: K–12

Style: Hands-On Workshop

BB 104

Sensemaking a New Phenomenon Featuring the Scientist Circle

Presenter: Jaime Leonard, School Specialty

Explore optical events (phenomenon) featuring reflections in parallel mirrors, then use a scale model system to work through an initial sensemaking activity featuring the Scientists Circle. Engage in true inquiry, initial understanding discussions, and sensemaking as students, while taking time to question and share take-aways and best practices as teachers.

Topics: Pedagogy, Physical Science

Grade Level: K–12

Style: Hands-On Workshop

✅ **STEM Clock Hours**

BHS 107

How to Develop Literacy Skills in the Service of Student Sense-Making in Science

Presenter: Dr. Victor Sampson, University of Texas - Austin

This interactive workshop helps teachers integrate literacy into science instruction, fostering inquiry, critical thinking, and problem-solving. Participants will engage in hands-on activities, explore a real-world science case, and learn strategies for creating meaningful, student-centered lessons that promote reading, writing, and speaking to deepen students' understanding of scientific concepts.

Topics: Elementary, Integration

Grade Level: K–5

Style: Hands-On Workshop

✅ **STEM Clock Hours**

GWP 101

Storytelling, Science, and Reciprocity: Integrating Indigenous Knowledge in STEM Classrooms – JMSTI and NGSS Aligned

Presenter: Christie Ryba, Tulalip Heritage High School

Learn about the intersection of Native Knowledge, science, and the teachings of plants. Using the book, *Braiding Sweetgrass* by Robin Wall Kimmerer to guide a HS Environmental Science class that includes reflective journaling, research, and labs. Some participants will receive a copy of the book.

Topics: Culturally Sustaining STEM, Pedagogy

Grade Level: 6-12

Style: Hands-On Workshop

✅ **STEM Clock Hours**

CP 108

Invasive Mussels Project – Identifying Invasive vs. Local Mussels through DNA Analysis

Presenter: Dr. Kristen Bergsman, Fred Hutchinson Cancer Center; Dr. Vanessa Knutson, Fred Hutchinson Cancer Center; Laurie Matthews, Seattle Prep; Dr. Jeanne Chowning, Fred Hutchinson Cancer Center

Biology and EnvSci teachers: Come explore a free curriculum unit from Fred Hutchinson Cancer Center. We will investigate the encroachment of invasive Mediterranean mussels into the Salish Sea habitats of our native Pacific Blue mussel. This unit includes invasive species background, stakeholder scenarios, indigenous perspectives, and molecular biology lab techniques (DNA extraction, PCR, and gel electrophoresis).

Topics: Life Science, Outdoors/Environment, Pedagogy

Grade Level: 9-12

Style: Hands-On Workshop

✅ **STEM Clock Hours**

Joy 114

PhET for All: Fostering Deeper Learning and Accessibility in Science and Math

Presenter: Shannon Adams, PhET

"PhET for All" empowers teachers to foster deeper, more accessible STEM learning. Discover how PhET simulations leverage evidence-based strategies, including culturally sustaining practices, to make complex concepts engaging and equitable for every student, ensuring scientific understanding is within reach for all.

Topics: Physical Science, AI or Tech

Grade Level: 6-12

Style: Hands-On Workshop

✅ **STEM Clock Hours**

CP 105

Who Owns Land in Your Community? Introducing a Land Management Mapping Tool for K–12 Education

Presenter: Clare Sobetski, Washington Department of Natural Resources

Who owns the land in your community and what are their goals? This session will introduce a new land management mapping tool designed to support K–12 teachers and students. Teachers will explore applications for this tool, which include identifying community partners, selecting locations for outdoor learning, and investigating fire history and watersheds.

Topics: Outdoors/Environment, AI or Tech

Grade Level: 6-12
Style: Lecture + Hands-On Mix
✅ **STEM Clock Hours**

BHS 103
Using POGIL to Introduce Claims/Evidence/Reasoning
Presenter: Mare Sullivan
Immerse yourself in cooperative team learning structures as we work together to complete a POGIL activity that introduces the steps of Claims-Evidence-Reasoning.
Topics: Pedagogy
Grade Level: 6-12
Style: Hands-On Workshop

Joy 104
3D Science Education for a Sustainable World
Presenter: Joan Griswold, University of Washington Genome Sciences
Empower students to address ecological issues with experiential activities focused on three-dimensional learning. Engage in simulations, modeling and interpreting data on natural resource use, population ecology, food and agriculture, and more. Receive lessons aligned to NGSS.
Topics: Outdoors/Environment, Pedagogy
Grade Level: 6-8
Style: Hands-On Workshop

Joy 105
Green Schoolyards – Getting outside for hands-on science!
Presenter: Jane Tesner Kleiner, Nature+Play Designs & Lower Columbia Nature Network
"Green Schoolyards – Getting outside for hands-on learning" will be a hands-on interactive workshop that leads participants through an exercise of planning and design a campus update to accommodate a variety of hands-on, year-long learning opportunities for science (and beyond). Bring nature and outdoor learning to every campus!
Topics: Outdoors/Environment
Grade Level: K–12
Style: Hands-On Workshop
✅ **STEM Clock Hours**

Joy 106

AI Literacy and Ethics in Educational Assessment (Double Session w/ Session 1)

Presenter: Dr. TingTing Li & Dr. Peng He, Washington State University College of Education

The workshop begins by introducing participants to the technical and conceptual underpinnings of generative AI, particularly how large language models such as GPT-4 are trained and how they generate human-like responses from structured prompts. Participants will explore task generation, examine ethical considerations such as bias and cultural relevance, and collaborate on responsible use principles. Through case studies and group work, teachers will gain practical strategies and a framework for evaluating AI-generated materials to support equitable, meaningful learning. Participants will leave with a shared framework for evaluating the quality, usefulness, and risks of AI-generated materials, grounded in their values as educators.

Topics: AI and Tech, Pedagogy

Grade Level: K–12

Style: Hands-On Workshop

✅ **STEM Clock Hours**

William Philip Hall

Partners in Possibility: Informal Educators Supporting 3D Science Learning

Presenter: Dr. Ellen Ebert, Retired Office of Superintendent of Public Instruction

Join Brad Street (IslandWood), Katy Daane (Columbia Springs), Kate Sorensen (Bellevue Botanical Garden), and Emily Gogerty (Washington State Historical Society) for a dynamic session led by Dr. Ellen Ebert exploring how place-based education and community partnerships can deepen student engagement in science. These leaders will share strategies for leveraging local resources to create meaningful, NGSS-aligned learning experiences that connect classrooms to the natural and cultural landscapes of Washington State.

Topics: Outdoors/Environment, Pedagogy

Grade Level: K–12

Style: Panel

Session 3: 11:40 am - 12:30 pm

Joy 215 - Featured Speaker (Note that you must pre-sign up for this session via the Doodle link sent on 10/8)
Using Mini-Lessons to Teach All Three Dimensions
Presenter: Paul Andersen, Bozeman Science
Discover how mini-lessons can teach the NGSS DCIs, SEPs, and CCCs effectively. Paul Andersen shares strategies for using focused mini-lessons, supported by resources from The Wonder of Science, to help students think critically and engage in meaningful scientific practices.
Topics: Pedagogy
Grade Level: K–12
Style: Hands-On Workshop

BB 104
From Standards to Students: Making NGSS Relevant with Real-World Resources
Presenter: Dr. John McNamara, Washington State Academy of Sciences
Engaging students means you are engaged first! In a fast-paced session, we will follow a storyline from maternal/fetal growth, the discovery of homeostasis, Rachel Carson, happy cows, 'no rBST', to cows aren't ruining the planet. Participants will use free resources available from The National Academy of Sciences, Engineering and Medicine, NSF, USDA, NIH, FDA that provide a wide variety of engagements/ phenomena they can use to teach any NGSS LS, PS, ESS topic
Topics: Pedagogy, Integration
Grade Level: K-12
Style: Round Table Discussion
✅ **STEM Clock Hours**

BHS 107
WDFW Wild Washington: Using your schoolyard to study biodiversity and pollinators with your elementary students
Presenter: Autumn Eckenrod, Washington Department of Fish and Wildlife, Lindsay Walker, Washington Department of Fish and Wildlife
Introducing the new WDFW Wild Washington curriculum: Biodiversity and Pollinators for 2nd grade. This session will introduce the new curriculum and highlight some of the hands-on activities that students will use to evaluate their schoolyard for biodiversity and pollinator

habitat, learn about how pollination occurs, and determine small steps they can make to increase the habitat connectivity where they live, learn, and play!
Topics: Elementary, Outdoors/Environment
Grade Level: K–5
Style: Hands-On Workshop
✅ **STEM Clock Hours**

GWP 101
Empowering Every Voice: NGSS-Aligned Strategies for Inclusive, Student-Driven Science
Presenter: Neeraj Agnihotri, Kent School District
Discover how to center student and family voices in NGSS-aligned science instruction. This hands-on session offers adaptable tools and routines to create inclusive classrooms where all students feel seen, valued, and empowered to engage deeply with science because they matter, and their ideas matter more than ever.
Topics: Culturally Sustaining STEM, Pedagogy
Grade Level: K–12
Style: Hands-On Workshop
✅ **STEM Clock Hours**

CP 108
Teaching Medicine's Past and Present Biases and Inequities to Enact Change for the Future
Presenter: Rebecca Townsend, TESLA STEM High School
By addressing medicine's past and present biases and inequities we can begin to eliminate them for future medical professionals. Using inclusive language during discussions about biased devices, having students brainstorm changes they can make within their sphere of influence, and examples of underrepresented health scientists will be our focus.
Topics: Life Science, Culturally Sustaining STEM
Grade Level: 9-12
Style: Lecture
✅ **STEM Clock Hours**

Joy 114
REVIT: PBL OER for Clean Energy Career Pathways
Presenter: Hanna Jaramillo, REVIT
Learn the 'why' and 'how' behind the pioneering high school clean energy career pathway. From the project-based learning and career exploration in course 1 to internships in course 4, this multi-credit pathway (CTE/lab science/college) is intentionally designed to engage all students in sustainability and STEM futures. All resources will be freely available online.
Topics: Physical Science, Engineering, Pedagogy

Grade Level: 9-12
Style: Lecture
✅ **STEM Clock Hours**

CP 105
Moving Water Can Do Work!
Presenter: Don Pruett Jr, Washington Science Teachers Association
Inquiry-based, hands-on STEM and critical thinking activities that help secondary students develop a comprehensive understanding of energy, electricity, hydropower, and emerging ocean technologies. Applicable to a CTE classJoy 215s well and can be easily modified according to student's skill levels.
Topics: Earth Science, Engineering
Grade Level: 9-12
Style: Hands-On Workshop
✅ **STEM Clock Hours**

BHS 103
Beyond the Labcoat: Reclaiming Science as a Creative Endeavor
Presenter: Samantha Gerschwiler, Western Washington University
Science is inherently creative, yet many students who view themselves as "creative" may not view themselves as belonging in science. Join us to explore strategies that show students the creative side of science! In this session, you'll use your own creativity to revise an activity or lesson with peers.
Topics: Pedagogy, Culturally Sustaining STEM
Grade Level: K–12
Style: Hands-On Workshop

Joy 104
Climate Joy, Emotions, and Identity: Youth-Led Approaches to Climate Action
Presenter: Hannah Newell, Pierce County Planning and Public Works
Discover how Pierce County's Youth Engaged in Sustainable Solutions (YESS) supports youth in navigating climate emotions, expressing identity, and building joy through community action. This hands-on session will explore YESS events and guide educators in integrating climate literacy, creativity, and emotional engagement into climate instruction.
Topics: Climate, Culturally Sustaining STEM

Grade Level: K-12
Style: Hands-On Workshop

Joy 105
Groundwork: Farm and School Cooperation
Presenter: Paige Mueller and Arwen Norman, Coupeville Farm to School & Coupeville School District
Students in Coupeville connect their hands-on experiences in garden class to the carrots and tomatoes from the school farm they devour at lunchtime in the cafeteria. Learn about the 10-year partnership between the school district and local non-profit Coupeville Farm to School that has laid the groundwork for future scientists and land stewards. We'll explore how we've created hands-on opportunities for students to grow, cook, and eat food while making classBB 104onnections. Learn about how to grow seasonal crops within the school calendar and walk away with lessons that can be adapted across grade levels.
Topics: Outdoors/Environment
Grade Level: K–12
Style: Lecture and Hands-on Workshop

Joy 106
AI in the Science Classroom
Presenter: Tammie Schrader
This workshop introduces science educators to cutting-edge AI tools that enhance teaching and learning. Participants will explore applications for data analysis, personalized instruction, and interactive simulations. Hands-on sessions will empower educators to integrate AI effectively, fostering student engagement, critical thinking, and innovation in the science classroom.
Topics: AI and Tech, Pedagogy
Grade Level: K–12
Style: Hands-On Workshop
✅ **STEM Clock Hours**

Special Lunch Poster Session!

Hear from students at Western Washington University, Washington State University, and Pacific Lutheran University while you get your lunch. They have each engaged in novel research in science education.

INSIGHTS FROM IMPLEMENTING THE ENGINEERING DESIGN PROCESS IN AN OCEAN TECH UNIT WITH ELEMENTARY STUDENTS

Corin Yates, Grace Blanning, and Kat shoemaker, Western Washington University

Learn more about how the Ocean Tech unit from *Explore the Salish Sea* curriculum helps engage students in engineering to learn about and protect their local marine environments. We'll share insights from our participation as preservice teachers in an NSF-funded professional development program that included opportunities for us to support students in designing and building remote operated vehicles (ROVs).

Elementary School Principal's Perspectives on Grade Level Reassignment: a case study

Aidan Conner, Western Washington University

Changing grade levels means new science content, new standards, and new curriculum materials—all of which can impact elementary science teaching and learning. With support from the WWU Arlan and Diane Norman Summer Research Fellowship, I investigated principal's perspectives and decision-making about grade level (re)assignment of teachers. In my poster, I'll share potential benefits and challenges for science teaching at the elementary level.

Worms that eat plastic: a cross-disciplinary experiment between math and science (Titus Powers & Drew Kraft)

BYOD: Ethical phone use in STEM through a climate lens (Braeden Hemphill & Marisol Rivera)

Unearthing Futures: Why Earth Science Matters in High School (Lexie Looney)

Session 4: 2:00 - 2:50 pm

Joy 215 - Featured Speaker

Consciousness and Conscientiousness: Reimagining Science Education for an Uncertain Future

Presenter: Patrick Freeland, Senior Tribal Climate Liaison, Affiliated Tribes of Northwest Indians

During times of climate crisis and political upheaval and students arrive with questions we cannot answer with textbooks alone, who are we in that classroom? This session explores the convergence between consciousness and conscientiousness, inviting reflection on our inner cognizance and ethical responsibility to students while offering practical strategies for teaching through uncertainty. Participants will gain evidence-based approaches that cultivate courage, relationality, and commitment to action while honoring students' emotional and intellectual depth and supporting the plurality of student backgrounds and multiple ways of knowing. Even as commitments to diversity, equity, and inclusion face political opposition, educators can advance fairness, representation, and belonging through deep ecological thinking and compassion.

Topics: Pedagogy, Culturally Sustaining STEM, Climate

Grade Level: K–12

Style: Engaging Lecture

BB 106

“Can you see me at the bus stop?”: Using Hands-On, Talk Moves, and Literacy Skills to Build Elementary Students' Sensemaking

Presenter: Dr. Carol O’Donnell, Smithsonian Science Education and Jeff Frates, Carolina

Join our interactive workshop where literacy meets exploration! Participants work collaboratively to define a specific bus stop problem to solve. They read about animals using body parts to cast shadows, reflect light, and self-illuminate to get solution ideas. Leave with classroom resources.

Topics: Elementary, Pedagogy

Grade Level: K–5

Style: Hands-On Workshop

BB 104

BIOZONE Textbooks: As Print & Digital WorkTexts, how are they unlike other High School Science Course Materials?

Presenter: Dan Taylor, BIOZONE

Using printed copies of our best-selling BIOLOGY for NGSS as take-home examples for each participant, we will conversationally discuss the 10 differences between BIOZONE's grades 9–12 courses and other, more traditional High School Science textbooks.

Topics: Life Science, Pedagogy

Grade Level: 9-12

Style: Hands-On Workshop

✅ **STEM Clock Hours**

BHS 107

Introduction to OpenSciEd Elementary for Science, ELA, and Mathematics Integration

Presenter: Kimberley Astle, Woodland School District

Are you curious about OpenSciEd Elementary? Are you in need of high-quality NGSS-badged elementary science curriculum that is freely available? Are you thinking about content integration and want to know how OpenSciEd Elementary might help? If any of these questions describe you, join Kimberley Astle for this introduction and exploration workshop. Kimberley led the Washington State OpenSciEd Elementary Field Test, served on the National State Steering Committee, and is a WA State-Certified OpenSciEd Fifth Grade Facilitator.

Topics: Elementary, Integration

Grade Level: K–5

Style: Hands-On Workshop

✅ **STEM Clock Hours**

GWP 101

Localizing Guides for Amplify Science Units

Presenter: Brad Street, IslandWood

Explore adaptations for Kindergarten, 1st, 3rd, 4th, 5th, and 6th grade Amplify Science units designed to support the understandings being built in the unit, increase student engagement and help students see how the science is relevant in their community by incorporating student experiences, family understandings, school communities and local phenomena.

Topics: Pedagogy, Culturally Sustaining STEM

Grade Level: K-6

Style: Lecture

✅ **STEM Clock Hours**

CP 108

Show me the Moo-ney! Determine the Genetics of a CA$H-Cow – Teaching Genetics by Connecting to Real-World Dairy Phenomenon

Presenter: Erika Fong, MiniOne Systems

Come learn how farmers can use molecular biology to find the best animals for their herd. You will run gels to determine which animals would be the best for a farmer who is interested in using his/her milk for cheese production!

Topics: Life Science, Pedagogy

Grade Level:9-12

Style: Hands-On Workshop

✅ **STEM Clock Hours**

Joy 114

Quantum scientists & agricultural applications

Presenter: Dr. Caroline Long, University of Washington IMOD

Hear from scientists doing cutting-edge research in optoelectronics (tech that converts light to energy and vice versa) and try inexpensive activities for students to explore light and energy in order to explain a real-world phenomenon that uses quantum science to support greener agriculture!

Topics: Physical Science, Life Science

Grade Level: 6-12

Style: Hands-On Workshop

✅ **STEM Clock Hours**

CP 105

Engaging in Climate Data through Visualization

Presenter: Cari Haug, North Central Educational Service District

Join us to create visualizations of climate data and learn how you can incorporate them into your classroom. We will learn to ask investigative questions, seek patterns, make meaning, and communicate our ideas.

Topics: Climate, Integration

Grade Level: 6-12

Style: Hands-On Workshop

✅ **STEM Clock Hours**

BHS 103

Real World Science: Using WWII to Inspire STEM Learning and Critical Thinking in Grades 3–5

Presenter: Dr. Tina Nicpan-Brown, Alternative Education Teacher and Consultant for the National WWII Museum

World War II provides the powerful context for Real World Science, a STEM-focused, NGSS-aligned program for grades 3–5. Explore how society turns to science during times of crisis, and connect history, science, and literacy to engage diverse learners and build real-world problem-solving and critical thinking skills. Curriculum provided and opportunity to interact with artifacts from WWII.

Topics: Elementary, Integration

Grade Level: K–5

Style: Hands-On Workshop

✅ **STEM Clock Hours**

Joy 104

Code 4 Climate: CS with Purpose—Protecting Communities One Algorithm at a Time

Presenter: Cheryl McClure, Bellevue International School

Get ready to engage students with computational thinking and building STEM skills by utilizing the Coding for Climate Action curriculum developed by Amazon Future Engineer. Students learn the basics of computer science and apply their new skills to code a Micro:bit invention for a natural hazard early warning system.

Topics: Climate, AI or Tech

Grade Level: K–8

Style: Hands-On Workshop

✅ **STEM Clock Hours**

Joy 105

Want to Get Your Students Outdoors? Try Collaborative Partnerships

Presenter: Kirk Beckendorf, Cascadia Conservation District

Many local organizations can support teachers with outdoor field experiences. In this session, a former classroom teacher and current environmental educator with Cascadia Conservation District (CCD), will discuss specific examples of how field experiences have been enhanced by building collaborative partnerships between schools and community partners.

Topics: Outdoors/Environment

Grade Level: 9-12

Style: Lecture

✅ **STEM Clock Hours**

Joy 106

App-Smashing AI Tools for Inquiry-Based Science and STEM

Presenter: Alfonso (Al) Gonzalez, Chimacum Elementary School

Explore a powerful set of AI tools students can use as a low stakes AI and EdTech experience that is highly engaging. This session walks through a fun app-smash activity integrating Adobe Firefly, School AI, Canva, and Book Creator.

Topics: AI and Tech, Pedagogy

Grade Level: K–12

Style: Hands-On Workshop

✅ **STEM Clock Hours**

William Philip Hall

Cultivating Science Leaders: Leading from the Classroom

Presenter: Don Pruett Jr, Washington Science Teachers

With budget cuts eliminating many Science TOSAs, Specialists, and Supervisors, the need to cultivate Science Teacher Leaders has never been greater. What does it take to lead from the classroom? This interactive session provides concrete steps to empower teachers as science leaders, ensuring high-quality instruction and advocacy for the next generation.

Topics: Leadership

Grade Level: K–12

Style: Lecture

Session 5: 3:15 - 4:05 pm

Joy 215

Using Immersive Educational Films & the Water Teachers Initiative to build intrigue and inquiry into rivers, wetlands, and watersheds.

Presenter: Kathy Chambliss, Freshwaters Illustrated

Come learn about a rich catalog of films, imagery, and resources to bring students into the world freshwater ecosystems, science, conservation, and careers, and see how the Water Teachers Initiative is making this material accessible and impactful for K–12 educators.

Topics: Outdoors/Environment, Life Science

Grade Level: K–12

Style: Film Screening

✅ **STEM Clock Hours**

BB 106

Exploring High Quality OpenSciEd Instructional Materials for K–12 from Carolina

Presenter: Jeff Frates, Carolina

Come experience a hands-on lesson from OpenSciEd from each grade span, kindergarten through high school. Discover how the new Carolina Certified Version enhanced these high-quality instructional materials, making them more accessible, user-friendly, and safer for classroom use. These enhancements include easier to use materials for less prep, additional assessment to support student sensemaking, support for over 200 languages, and more. Leave with resources so you can try OpenSciEd in your classBHS 103mmediately.

Topics: Pedagogy, Integration

Grade Level: K–12

Style: Hands-On Workshop

BB 104

Deepen Student Thinking: Cross-Curricular Learning with Museum Science Investigations

Presenter: Madlyn Larson, Natural History Museum of Utah

Engage in real-world, museum-based investigations guided by scientists. Explore hands-on strategies to deepen critical thinking, integrate Washington standards across disciplines, and empower students to collaborate, question, and solve problems through free, phenomenon-based digital learning tools.

Topics: Pedagogy, Integration

Grade Level: 6-8

Style: Hands-On Workshop

✅ **STEM Clock Hours**

BHS 107

Fostering Place-Based Playful Learning for Salmon Education

Presenters: Nathan Zabel, Nooksack Salmon Enhancement Association and Debi Hanuscin, Western Washington University

Do you teach about salmon with your students? In this workshop, you can put yourself in the "fins" of a salmon and model the lifecycle through an engaging activity, drawing connections to the Next Generation Science Standards, John McCoy Since Time Immemorial, and more!

Topics: Outdoors/Environment, Elementary

Grade Level: K-5

Style: Hands-On Workshop

✅ **STEM Clock Hours**

GWP 101

Engaging Students in Talking about Indigenous Sovereignty and Climate Systems

Presenter: Dr. Kelsie Fowler and Dr. Phillip Bell, University of Washington College of Education

This session will support educators in understanding that climate experts across the globe are calling for the broad recognition of Indigenous sovereignty and climate expertise as fundamental to mitigating climate change and building a just future. Given this, workshop participants will engage in talk activities designed to support non-Indigenous youth in learning and processing these topics and discuss ways to bring these activities and pedagogies into their own classrooms.

Topics: Climate, Culturally Sustaining STEM

Grade Level: K–12

Style: Hands-On Workshop

✅ **STEM Clock Hours**

CP 108

How can we use biochemistry to improve our school lunch?

Presenter: William Baur, Washougal High School

Learn about how to teach biochemistry, nutrition, human anatomy, homeostasis, and engineering all through redesigning our school's breakfast and lunch menu. Award winning HS biology teachers William Baur and Donna Schatz will lead participants through an overview and key activities of the introductory HS biology unit they designed around their school's food services program.

Topics: Life Science, Integration

Grade Level: 6-12

Style: Hands-On Workshop

✅ **STEM Clock Hours**

Joy 114

Solar Panels and Energy transformations

Presenter: Dr. Caroline Long, University of Washington IMOD

Hear from scientists doing cutting-edge research in solar panel materials science; discover the phenomenon of stained glass solar panels; and try out activities for your classroom that explore how different types of energy can be optimized and controlled to achieve a goal, using student- and budget-friendly circuits and solar panels.

Topics: Physical Science, Engineering

Grade Level: 6-12

Style: Hands-On Workshop

✅ **STEM Clock Hours**

CP 105

Fossils tell the story of Washington State

Presenter: Dr. Elizabeth Nesbitt, Retired Curator of Paleontology at the Burke Museum, Mark Watrin, Washington Science Teachers Association

Washington state has amazing fossil sites and yet they are often a best kept secret. WSTA has teamed with the Burke Museum and UW paleontologists to help teachers and their students get hands on with fossils and the stories they tell about Earth's history.

Topics: Earth Science

Grade Level: K–12

Style: Hands-On Workshop

✅ **STEM Clock Hours**

BHS 103

Empowering Educators: Designing Meaningful Professional Development

Presenter: Dr. Tina Nicpan-Brown, NorthCentral University and Washington Education Association

Discover a practical, research-based framework for designing effective, context-specific professional development for educators. Grounded in real-world insights and adult learning theory, this session equips leaders and teachers with tools to identify gaps, improve professional development systems, and drive meaningful change.

Topics: Leadership

Grade Level: K–12

Style: Hands-On Workshop

✅ **STEM Clock Hours**

Joy 104

Living Through Climate Change: Youth Perspectives on Supporting Climate Action and Wellbeing in the Classroom

Presenter: Cambry Baker, EarthGen & WA state high school students

Join youth climate activists in a powerful panel on lived experience, emotional resilience, and student-led action. Gain insights, data, and strategies to support students' climate emotions and engagement. Whether teacher, counselor, or district leader, this session offers inspiration, insight, and resources to support youth—emotionally, academically, and as emerging climate leaders.

Topics: Climate, Outdoors/Environment

Grade Level: K–12

Style: Panel

✅ **STEM Clock Hours**

Joy 105

Place-Based Student Research: Authentic Environmental STEM in a Rural Title 1 School District

Presenter: Timothy Smith, Pioneer School District

The nested, multi-causal complexity of the natural world ensures that an infinite supply of unanswered scientific questions and engineering goals will always await curious scientific minds. This session explores ways to accomplish deep, authentic dives into STEM content through student-driven research in ecology and natural resource management.

Topics: Outdoors/Environment, Pedagogy

Grade Level: K–12

Style: Lecture

✅ **STEM Clock Hours**

Joy 106

Designing 3D Assessments with Generative AI Support (Double Session w/ Session 6)

Presenter: Dr. TingTing Li & Peng He, Washington State University College of Education

The second part of the session transitions from conceptual grounding to practical application. Working in small grade-level teams (grades 3–5 or 6–8), teachers will engage in a scaffolded, collaborative design process informed by the NGSA Design Framework. The co-design process begins with selecting an NGSS performance expectation (PE) and unpacking it into smaller-grained learning performances (LPs) that describe what students should be able to do. Each team then develops one or more evidence statements to guide their assessment task design—these statements define the observable indicators of student proficiency aligned to the LPs. The session includes peer feedback, practical tools, and a collaborative design experience to help you build meaningful, equitable assessments.The facilitation team will highlight emerging themes, reinforce key takeaways, and provide digital access to a toolkit that includes prompting templates, ethics reflection tools, design guides, and continued access to the GPT-powered sandbox platform.

Topics: AI and Tech, Pedagogy

Grade Level: K–12

Style: Hands-On Workshop

✅ **STEM Clock Hours**

William Philip Hall

The P3BL Framework: Engaging students and advancing equity by integrating phenomenon-, problem-, and place-based learning into real-world STEM projects.

Presenter: Ayla Wilk, Summit Public Schools Atlas

In this session, you will learn how to integrate place-based phenomena and locally-relevant problems via project-based learning. You will leave with a design framework and tangible tools for planning NGSS-aligned units that leverage student creativity and community expertise to promote STEM learning as a tool for social and ecological justice.

Topics: Pedagogy, Culturally Sustaining STEM

Grade Level: 6-12

Style: Hands-On Workshop

✅ **STEM Clock Hours**

Session 6: 4:25 - 5:15

BHS 107

Engaging Young Scientists through STEM

Presenters: Katie Tingle & Jana Brock, North Thurston Public Schools

Join us to unlock the potential of young scientists and enhance your teaching toolkit with innovative strategies that align with STEM, Next Generation Science Standards (NGSS), and early learning principles. Together, we can cultivate a generation of inquisitive thinkers eager to explore the world around them!

Topics: Elementary, Integration, Engineering

Grade Level: K–5

Style: Hands-On Workshop

✅ **STEM Clock Hours**

GWP 101

Social Justice Through Sense Making

Presenter: Josh Simondet, Puyallup School District

Science education has a reputation for being “sterile” and separate from social and cultural issues. But science is a deeply cultural undertaking. Intentionally teaching science with a social focus lens can disrupt how students perceive the subject and determine whether they adopt a sense of belonging.

Topics: Culturally Sustaining STEM, Pedagogy

Grade Level: 6-12

Style: Lecture + Hands-On Mix

✅ **STEM Clock Hours**

CP 108

Quantum Science and Photosynthesis

Presenter: Mia Eldridge, UW IMOD & Issaquah School District

Learn about quantum dots, the scientists who research them, and ways to incorporate these quantum dots into a life science research project in which students explore whether and how a film embedded with quantum dots can make plants grow even better than natural sunlight.

Topics: Life Science, Physical Science

Grade Level: 6-12

Style: Lecture + Hands-On Mix

✅ **STEM Clock Hours**

CP 105

Using Art to Tackle Earth & Space Science Concepts

Presenter: Elizabeth Williams, Woodland School District

In this interactive session, participants will explore how to integrate art into their Earth/Space Science lessons. Educators will walk away with NGSS aligned lessons to adapt and implement into their own classrooms. Topics covered: Newton's Laws of Motion, Forces and Interactions, Earth's Place in the Universe.

Topics: Earth Science, Integration

Grade Level: 6-12

Style: Hands-On Workshop

✅ **STEM Clock Hours**

BHS 103

Use Levels of Understanding to Improve Teaching and Assessment for Equity

Presenter: Julia Vasiliauskas & Geza Palotas, Lake Washington School District

Learn how cognitive levels of learning can improve your assessment of student learning and bring more equity and meaningful application of science concepts to your classroom. Bring curriculum, lessons, and assessments you'd like to improve and come to collaborate with colleagues using resources, equitable grading practices, and assessment models from your facilitators. Examples provided from middle school science, but all levels (and coaches/mentors) welcome!

Topics: Pedagogy, Assessment, Integration, Equity

Grade Level: K–12

Style: Hands-On Workshop

✅ **STEM Clock Hours**

Joy 104

From Local to Global: Teaching Climate Change Using Stories from Your Community

Presenter: Dr. Rama Devagupta, NBCT, Southridge High School, Kennewick School District

Interested in teaching climate change but feeling unsure how to tackle the controversies related to this topic? Come to this session to figure out how to identify local phenomena or problems to make your teaching relevant. Create a starting unit with local anchoring phenomena to engage your students and confidently walk away with standardized classroom ready materials from BSCS Science Learning "Climate Education Pathways" research project.

Topics: Climate, Culturally Sustaining STEM

Grade Level: K-12

Style: Lecture

✅ **STEM Clock Hours**

Joy 105

Using MATE ROV underwater robotics to engage diverse students in skills that will take them places. You can start with little to no background in Robotics or Engineering.

Presenter: Alice Ryan, Quileute Tribal School

MATE ROV underwater robotics can change your students' lives—no engineering or Robotics experience required! OK, in truth you will be learning and using a LOT of engineering skills and electrical skills like soldering but I dove in without any background or skills and I pulled it off, you can too. In this hands-on session, you'll explore how students can build and operate remotely operated vehicles (ROVs) while learning real-world science and engineering skills. The MATE ROV competition challenges students to solve marine-related problems through design, coding, and teamwork. It's a powerful way to engage learners in STEM, especially those who may not see themselves as engineers yet. You'll leave with ideas and resources to bring this transformative experience to your classroom.

Topics: Pedagogy, Engineering

Grade Level: 6-12

Style: Hands-On Workshop

✅ **STEM Clock Hours**

Joy 106

Designing 3D Assessments with Generative AI Support (Double Session w/ Session 5)

Presenter: Dr. TingTing Li & Peng He, Washington State University College of Education

The second part of the session transitions from conceptual grounding to practical application. Working in small grade-level teams (grades 3–5 or 6–8), teachers will engage in a scaffolded, collaborative design process informed by the NGSA Design Framework. The co-design process begins with selecting an NGSS performance expectation (PE) and unpacking it into smaller-grained learning performances (LPs) that describe what students should be able to do. Each team then develops one or more evidence statements to guide their assessment task design—these statements define the observable indicators of student proficiency aligned to the LPs. The session includes peer feedback, practical tools, and a collaborative design experience to help you build meaningful, equitable assessments.The facilitation team will highlight emerging themes, reinforce key takeaways, and provide digital access to a toolkit that includes prompting templates, ethics reflection tools, design guides, and continued access to the GPT-powered sandbox platform.

Topics: AI and Tech, Pedagogy, Assessment

Grade Level: K–12

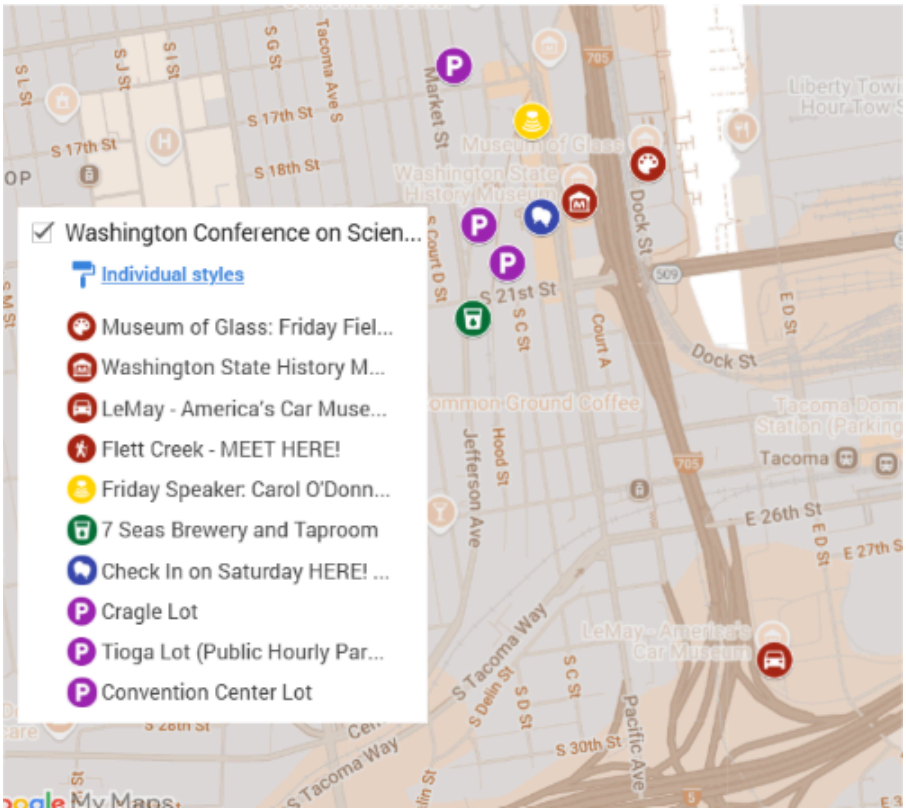
Style: Hands-On Workshop

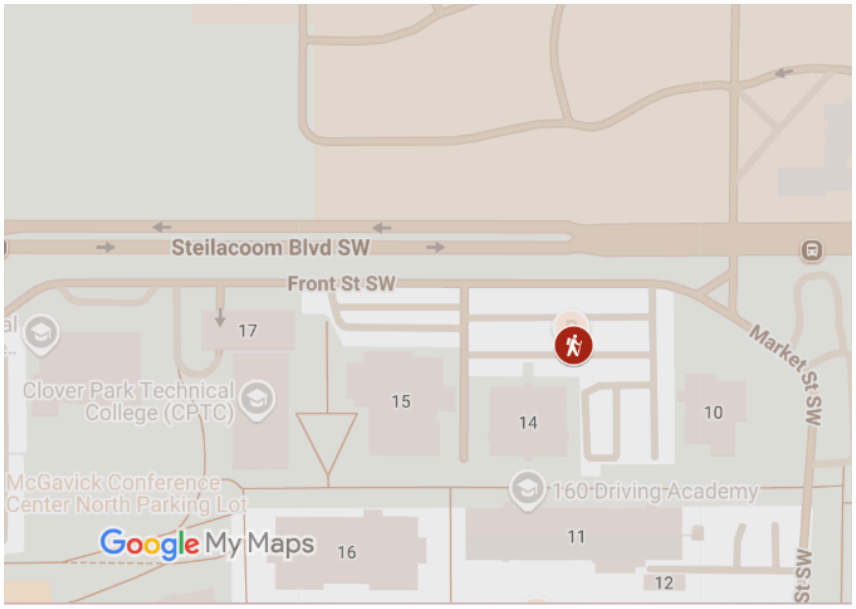
✅ **STEM Clock Hours**

Maps and Parking Info

Maps and Parking

Please use **this link** to find an interactive Google Map, screenshots are below to help you quickly find information.





Saturday Map:

Check in is in the Cherry Parkes Lobby with the ⭐

Keynote, Lunch and Exhibitors are at the 👏

Sessions are happening where the ❤️ are at.

UNIVERSITY of WASHINGTON | TACOMA

PARKING FOR CAMPUS VISITORS

HOURLY PARKING LOCATIONS

Featured Speaker Bios

Featured Speaker Bios

Paul Andersen

Paul Andersen is an educational consultant, YouTube creator, and science education leader based in Bozeman, Montana. With over 20 years of classGWP 101xperience, Paul was named the 2011 Montana Teacher of the Year and was a finalist for National Teacher of the Year. He is best known for his Bozeman Science YouTube channel, where his hundreds of science tutorials have reached millions of learners worldwide.

Paul specializes in three-dimensional learning, inquiry-based instruction, and NGSS implementation, and has provided professional development to thousands of educators across the globe. He is also the curator of The Wonder of Science, a comprehensive resource hub supporting science teachers with videos, assessments, and instructional tools aligned to the NGSS.

In collaboration with his wife Laura, Paul co-created Switch-Its, a systems thinking tool designed to support learning and organizational design through hands-on manipulatives. Outside of his professional work, Paul enjoys traveling, birdwatching, and exploring the natural world.

You can learn more at Bozeman Science or The Wonder of Science.

Featured Speaker Bios

Dr. Philip Bell

Philip Bell is a professor of the Learning Sciences & Human Development and holds the Shauna C. Larson Endowed Chair in Learning Sciences. He is executive director of the UW Institute for Science & Math Education focused on equity-focused innovation in K-12 STEM education, and he is co-director of the Learning in Informal and Formal Environments (LIFE) Science of Learning Center. Bell pursues a cognitive and cultural program of research across diverse environments focused on how people learn in ways that are personally consequential to them. He has studied everyday expertise and cognition in science and health, the design and use of novel learning technologies in science classrooms, youth argumentation, culturally expansive science instruction, and scaled implementation of educational improvement. Bell served as a member of the Board on Science Education with the National Academy of Sciences for eight years, co-chaired the National Research Council consensus report effort on Learning Science in Informal Environments and served on the committee of the NRC Framework for K-12 Science Education that was used to guide development of Next Generation Science Standards. He has a background in human cognition and development, science education, computer science, and electrica l engineering.

Featured Speaker Bios

Dr. Kelsie Fowler

Kelsie Fowler has a PhD in Curriculum and Instruction from the University of Washington, where she currently works as a research scientist helping run two state-wide climate justice education networks---ClimeTime and the Climate Teacher Education Collaborative. In addition to this work, she also teaches the secondary science methods series in the UW Seattle Teacher Ed Program and Language and Literacy for STEM teachers. Kelsie also taught the elementary science methods course series for four years. In this work she takes a critical stance to support educators in teaching science from Anti-racist, Anti-colonial, and youth-informed lenses with critical and community knowledges centered alongside NGSS. Before pursuing her PhD, Kelsie was a classroom science teacher for over 10 years. During this time, she taught every grade from 1st-12th in some capacity but identifies most closely as a middle and high school science teacher. In 2020 Kelsie also helped start, and now leads, a youth and community marine pollution lab in Bahía de los Ángeles that tackles issues like climate change and plastic pollution through an intergenerational, hands-on approach. Through her experiences working closely with youth in and out of formal learning environments, Kelsie has come to know the power of youth voices and leadership in realizing social and environmental solutions. Her personal work aims to center environmental and multispecies justice, ecological hope, and youth brilliance to author change this world needs.

Featured Speaker Bios

Patrick Freeland

Patrick Austin Freeland (Wind Clan of the Muscogee Nation of Oklahoma) serves as the Senior Tribal Climate Liaison for the Affiliated Tribes of Northwest Indians (ATNI) and the Northwest Climate Adaptation Science Center (NW CASC), where he connects Tribal Nations with climate practitioners to build adaptive capacity and safeguard ecosystems vital to Indigenous communities. His work integrates over two decades of experience in climate science, education, and Indigenous advancement through culturally-responsive, place-based, and interdisciplinary approaches spanning ecological sciences, arts, and engineering. In postsecondary education, he has advanced noncognitive development approaches that redesign curriculum to ameliorate historical and educational trauma, replacing conventional outcome-based assessments through modular learning structures aligned with cultural values and promote genuine learning. His decade of teaching at Tribal Colleges and Universities and service on the Northwest Indian College and American Indian Higher Education Consortium Institutional Review Board demonstrates sustained commitment to research ethics, data sovereignty, and ensuring Indigenous Knowledge Systems inform research methods and climate adaptation. Through principles of *Honor*, *Pride*, and *Respect*, he creates spaces for ethical

knowledge exchange where both students and communities advance toward self-determination.

Dr. Carol O’Donnell

Dr. Carol O’Donnell is the Douglas M. Lapp and Anne B. Keiser Director of the Smithsonian Science Education Center, where she leads global efforts to transform K–12 science education through research, curriculum development, and educator support. A former classroom teacher and curriculum developer, Carol has held leadership roles at the U.S. Department of Education, overseeing billions in federal investments focused on school improvement and student learning.

She represents the Smithsonian on national and international STEM education councils, including the Global Council of the InterAcademy Partnership and the UN Broadband Commission’s Working Group on School Connectivity. Carol also teaches part-time in the physics department at George Washington University and is a passionate advocate for equity, sustainability, and innovation in science education.

Featured Speaker Bios

Dra. Anastasia Sanchez

Dr. Anastasia Sanchez is a passionate and innovative educator, scientist, and advocate for justice-centered K-12 science education. With a deep commitment to reshaping how science is taught and learned, Dr. Sanchez works at the intersection of education, equity, and research to ensure that all students, particularly those from underrepresented communities, have access to transformative science education. Through her groundbreaking initiatives, she promotes inclusive and culturally relevant curricula that challenge traditional frameworks and encourage critical thinking, creativity, and curiosity. Dr. Sanchez's work includes developing educational programs that integrate social justice principles into science learning, fostering collaboration between scientists and educators to create more engaging and accessible classGWP 101nvironments, and advocating for systemic changes in how science is represented and taught in schools. She also leads workshops, conferences, and initiatives aimed at empowering educators to adopt more inclusive and innovative teaching methods, ensuring that future generations of scientists reflect the diversity of

the world around them. Her contributions to science education are rooted in her belief that science can be a tool for social change, and that all students, regardless of background, should have the opportunity to engage with science in ways that are meaningful and empowering. Dr. Sanchez continues to push boundaries, using radical care and her expertise to inspire both educators and students to approach science with a critical, justice-oriented perspective within her position at the Puget Sound Educational Service District supporting STEM pathways for all.