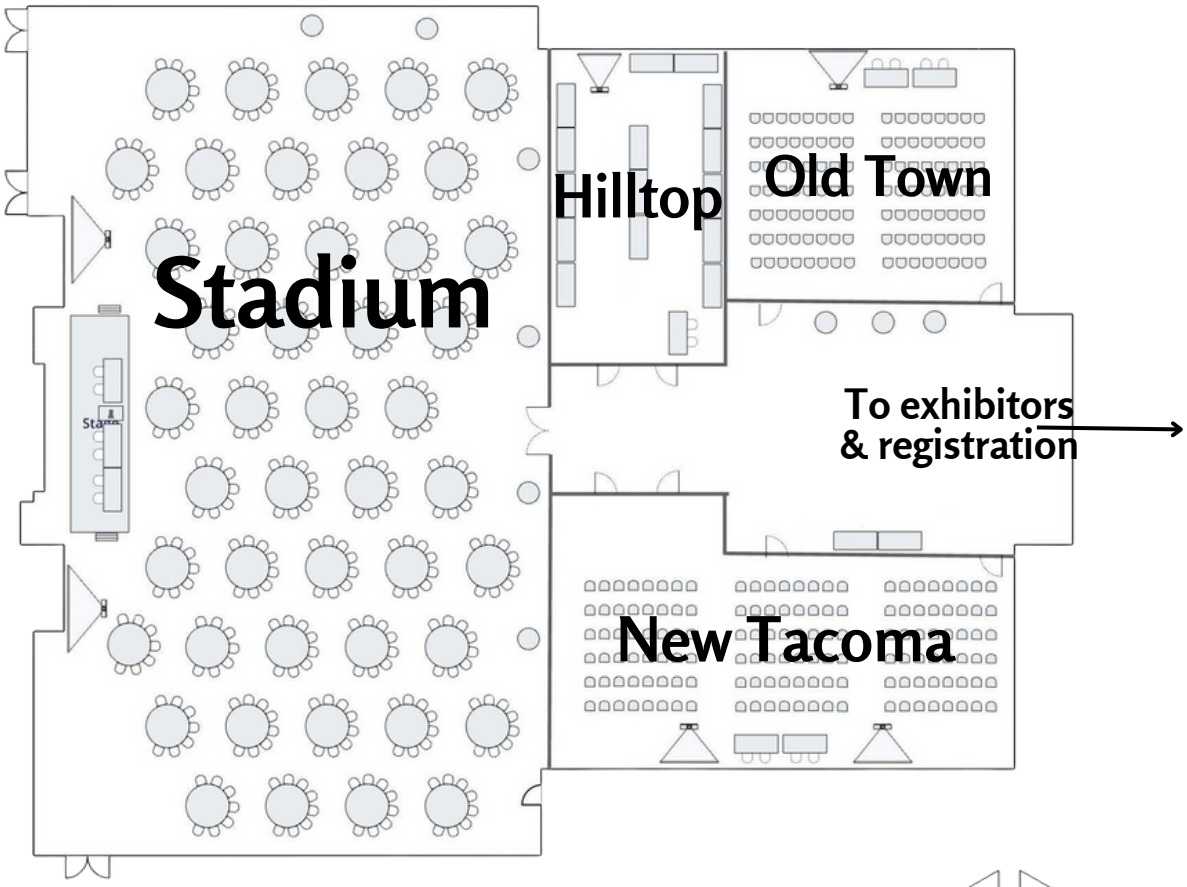
STRENGTHENING ENVIRONMENTAL HEALTH FOR A SUSTAINABLE FUTURE

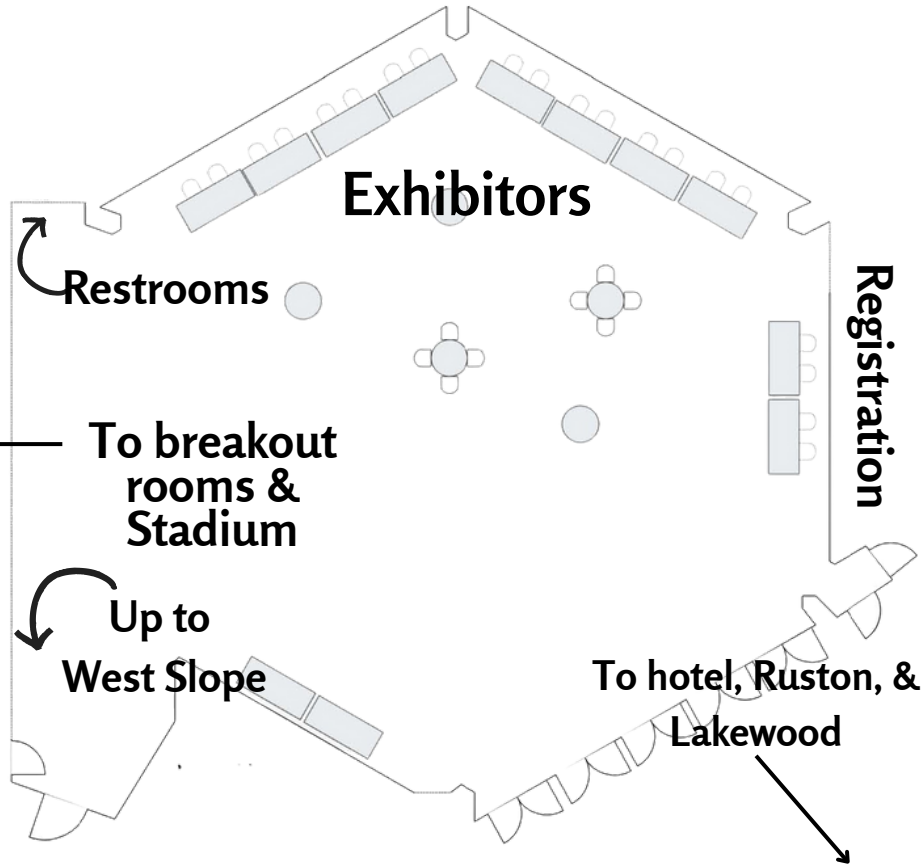
CONFERENCE PROGRAM, MAY 8-10, 2023

Hotel Murano
1320 Broadway Plaza, Tacoma, WA

WASHINGTON STATE ENVIRONMENTAL HEALTH ASSOCIATION
69TH ANNUAL EDUCATIONAL CONFERENCE

FIND YOUR WAY AROUND
Hotel Murano





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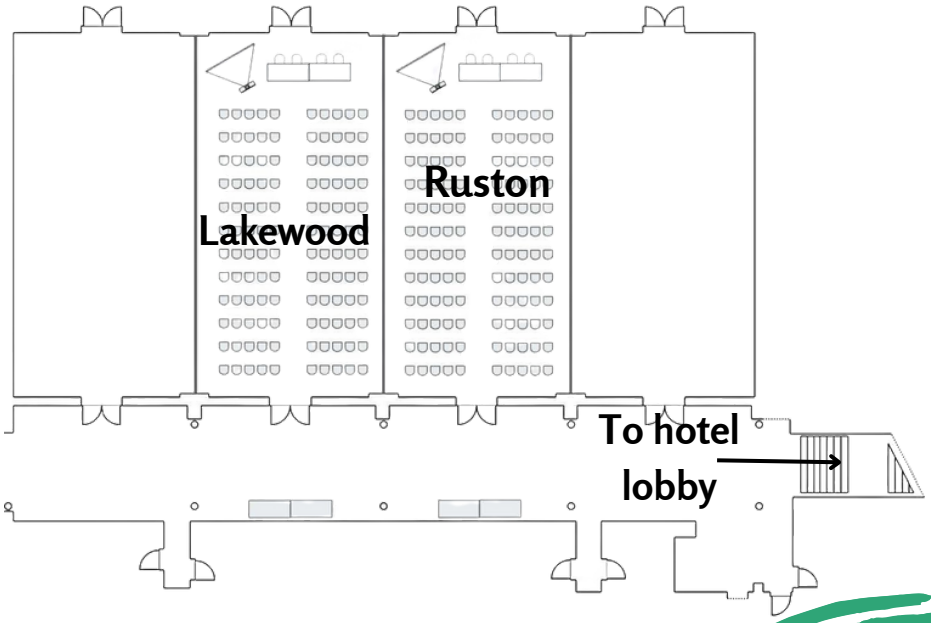

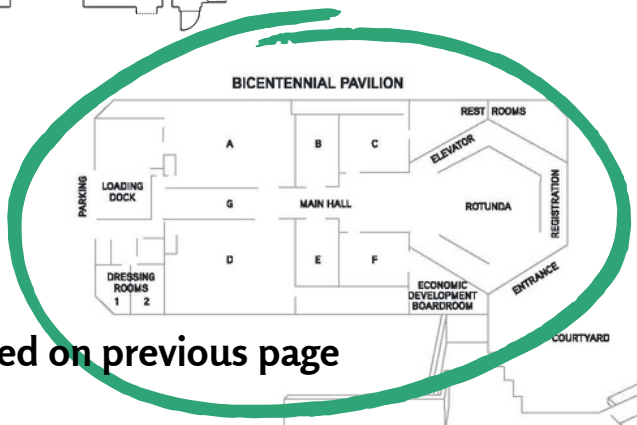

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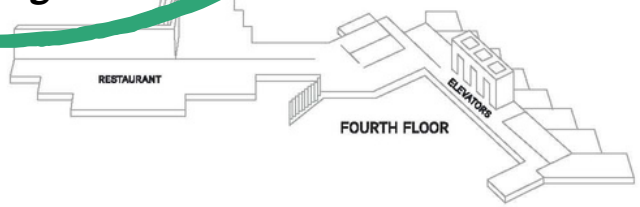

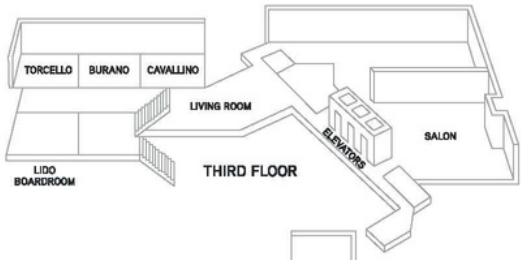

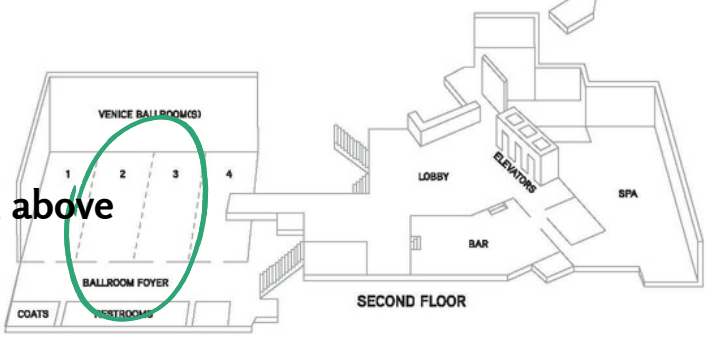

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MESSAGE FROM THE CONFERENCE CHAIRS

Tom Kunesh & Katie Lott

Welcome to Tacoma and Washington State Environmental Health Association's Annual Educational Conference (AEC). You are the cornerstone of "Strengthening Environmental Health for a Sustainable Future". Our theme this year centers sessions and experiences on the environment, funding, and innovation.

Learn

Choose from a wide range of session topics, field trips and opportunities to connect with colleagues.

• Start your experience with pool inspection training or walk through a breathtaking park while learning about playground inspection.

• Wrap up with a field trip to: A school in a zoo; a wastewater training site; the largest stormwater research facility in the country.

• See local partnerships and restoration projects in action - like cleaning up a century of smelter deposition. See a revitalized superfund site.

• Unwind at Point Defiance Park's walking paths, shops. Enjoy food, a public amphitheater, and sweeping views of Puget Sound and Vashon Island.

Get Involved

• Bid on items in the IHC silent auction/raffle to support Etta Project's work in Bolivia.

• Join the WSBRS Annual meeting and learn about the credentials we use to assure a highly trained EH workforce.

• Join the WSEHA Annual meeting, volunteer to help plan AEC 2024, moderate a session, consider serving on the WSEHA Board of Directors.

Connect and Enjoy

• Enjoy local restaurants and attractions highlighted in the 2023 AEC social activity map.

• Tacoma is home to the second highest number of museums per capita after Washington, D.C. The largest are Washington State History Museum, Museum of Glass, Tacoma Art Museum, and the Lemay Car Museum.

• Attend our Monday evening reception including appetizers and live music from singer/songwriter Kristen Marlo. Explore the poster sessions while you connect with new and old friends.

• On Tuesday, drop by Dystopian State Brewery for cornhole and camaraderie.

Thank you to the AEC committee volunteers that partnered to bring you a fantastic conference. If you'd like to be a part of the planning this year or next, we'd love to have you. Visit the 2023 website for details. We look forward to connecting with you.

Enjoy the conference!
Tom Kunesh and Katie Lott, Conference Co-Chairs

MESSAGE FROM THE WSEHA PRESIDENT

Nancy Bernard

Welcome to the 69th Annual Educational Conference of the Washington State Environmental Health Association. I am so glad you could join your colleagues as we work together *Strengthening Environmental Health for a Sustainable Future*. The AEC committee has worked hard to provide a variety of educational opportunities for our members, identifying emerging environmental health issues and showcasing important work in environmental public health. There are valuable field trips available and fun social activities to join.

I especially want to call your attention to our annual International Health Committee silent auction and presentation on the 2023 IHC Recipient – Etta Projects, a Tacoma based non-profit that works in Bolivia. It is an important opportunity to learn about and support a group collaborating with communities to create sustainable solutions to improve health, sanitation, and clean water.

I hope this AEC helps you to establish connections with fellow professionals across agencies and fields and encourage each other to obtain the highest standards of practice. I want to express thanks and appreciate to our hard-working chairs, Tom Kunesh and Katie Lott, our Executive Secretary Megan McNelly, and the many committee chairs and volunteers that make this event possible. Please take time to thank them and consider getting involved for next year's AEC as we gather in eastern Washington.

CONFERENCE AGENDA , MONDAY, MAY 8

Time	Before the sessions	Location
9:00 am	Registration opens	Rotunda
9:00 am - 12:00 pm	Pool Inspector Training	New Tacoma
10:00 am - 12:00 pm	FIELD TRIP: Wright Park Playgound	501 S I Street, Tacoma
12:00 - 1:45 pm	Lunch & welcome comments *Nancy Bernard, WSEHA President* *Tom Kunesh & Katie Lott, AEC Chairs* Keynote Speakers *Dr. Anthony L-T Chen, TPCHD Director of Health* *Dr. Shah, Secretary of Health, Department of Health* *Bob Ferguson, Washington State Attorney General* International Health Award Recipient *Pennye Nixon, Etta Projects*	Stadium

Time	Old Town	New Tacoma	Lakewood	Ruston
2:00 - 2:50 pm **Session 1**	Engaging teens in Environmental Public Health *Lize Williams, DOH*	Understanding increased risk aquatic venues (virtual presentation) *Dewey Case, CMAHC*	Effectiveness of HEPA air cleaners in congregated shelter settings *Shirlee Tan, PHSKC* *Dr. Edmund Seto, UW* *Thu Bui, PHSKC* *Shirley Huang, UW*	Panel discussion: PFAS in Yakima County Well Water *Shawn Magee, YHD* *Holly Myers, DOH* *Greg Caron, Ecology* *Claire Nitsche, DOH* *Brandi Hyatt, Selah resident*
2:50 - 3:10 pm	Break and networking			
3:30 - 5:00 pm	FIELD TRIP: School of the Arts			
3:10 - 4:00 pm **Session 2**	Leg 101: Public health & the legislative session *Jamie Bodden, WSALPHO* *Joe Laxson, DOH*	Water recreation facility rulemaking update *Dave DeLong, DOH* *Alyssa Payne, DOH*	Improving ventilation in long term care facilities *Kayla Hamme, DOH* *Pranav Srikanth, UW* *Becky Doe, DOH*	How a drinking water program in Pierce County could help provide a model for other counties *Josh Hird, TPCHD*
4:10 - 5:00 pm **Session 3**	Foundational Public Health Services Panel *Chelsea Henry, DOH* *Sue Sullivan, WCHD* *Jesse Cox, KCHD* *Marnie Boardman, DOH* *Judy Olsen, TPCHD*	Geographic and demographic context of share pantries and community refrigerators as hyper-local food assistance resources in the Puget Sound Region of Washington state. *Tania Vallejo, UW* *Emily Hovis, UW*	Challenges and updates in wildfire smoke research: Low cost-sensor data acquisition and health effects *Lilian Liu, UW* *Annie Doubleday, UW*	Managing EH agencies and their data in a post pandemic world *Cameron Garrison, HealthSpace*

AGENDA , TUESDAY (PART 1), MAY 9

Time	Before the sessions	Location
7:00 am	Registration opens	Rotunda
7:00 - 8:00 am	Breakfast	Stadium
7:00 - 8:00 am	Washington State Board of Registered Sanitarians Annual Meeting	West Slope
8:00 - 9:45 am	Welcome comments NEHA update *Bill Emminger, National Environmental Health Association* Orca Recovery *Tara Galuska, Washington Recreation & Conservation Office*	Stadium

Time	Old Town	New Tacoma	Lakewood	Ruston
10:00 - 10:50 am **Session 4**	Addressing Environmental Public Health issues associated with homelessness *Colin Maloney, DOH*	Rats & bugs- oh my! Addressing pest infestations in food service establishments *Leah Helms, PHSKC* *Liz Dykstra, DOH* *Helena Barton, PHSKC* *Kriston Pape, PHSKC*	Playground Safety – and Hot Wash the Morning Playground Workshop *Nancy Bernard, DOH* **new session added**	What to do about the wild whirlwind of wastewater management *Silvia-Antonia Rus, PHSKC* *Meagan Jackson, PHSKC*
11:00 - 11:50 am NEIGHBORHOOD RAT SAFARI: Following this presentation, join the presenters outside to explore nearby areas to learn more about rodents & urban environments.				
11:00 - 11:50 am **Session 5**	The Washington State Health Disparities Map *Jeff Bryant, DOH* *Michelle Fredrickson, DOH* *Shelby Flanagan, DOH*	*E. Coli* outbreak associated with the East African community in King County 2022 *Doug Dyer, PHSKC* *Ali Oman, PHSKC*	Air monitoring in schools & childcare facilities using low-cost sensors *Orly Stampfer, DOH* *Julie Fox, DOH* **moved to Wed, 9:45, Session 8**	Oak Harbor dye study *Mark Toy, DOH*
12:00 - 1:00 pm	Lunch WSEHA awards Comments *Lauren Jenks, DOH*			Stadium

Don't forget to visit the silent auction in the Hilltop room!
Auction/raffle closes Tuesday at 2:30 pm!

AGENDA , TUESDAY (PART 2), MAY 9

Time	After lunch activities	Location
1:00 - 2:30 pm	FILM SCREENING: *Turning of the Tide* *Sherri Tonn, Pacific Lutheran University (retired)* *Bill Pugh, City of Sumner (retired)*	Stadium
1:30 - 2:30 pm OR 2:30 - 3:30 pm (choose one, **registration required**)	FIELD TRIP: Center for Urban Waters *Space is limited to 14 attendees for each field trip time slot.* *Tuesday morning sign-up at Registration in the Rotunda.*	326 E D Street, Tacoma

Time	Old Town	New Tacoma	Lakewood	Ruston
2:40 - 3:30 pm **Session 6**	Indigenous One Health: Connecting traditional ecological knowledge & western science through "the four R's" *Michelle Pollowitz, UW*	Cleaning & sanitizing under the NSF standards *Derek DeLand, NSF*	Helping your community with DOH indoor air quality resources *Nancy Bernard, DOH* *Ali Boris, DOH*	*Vibrio* & other shellfish related illnesses: Reporting, response, & management *Elizabeth Lorence, DOH*
3:30 - 3:50 pm	Break and networking			
4:00 - 4:50 pm **Session 7**	Increasing community wildfire smoke readiness: A story of Washington public health agencies to distribute indoor air filtration devices to vulnerable individuals *Kaitlyn Kelly, DOH* *Kathy Ross, TPCHD* *Khanh M. Ho, PHSKC* *Shirlee Tan, PHSKC*	Sanitizers, disinfectants, & cleaners: What's new, effective, & street legal? *Susan Shelton, DOH* *Nancy Bernard, DOH*	Interactive dashboards to explore acute pesticide illnesses & lead in drinking water data *Daniel Farber, DOH* *James Arnaez, DOH*	NEP Shellfish Strategic Initiative highlights *Chess Claire, DOH* *Audrey Coyne, DOH* *Clara Hard, DOH* *Lea Shields, DOH*

SOCIAL EVENTS		
5:00 - 7:00 pm	Washington State History Museum	*Click here for details (wseha.org)*
6:00 - 9:00 pm	Game Night @ Dystopian State Brewery: Cornhole Tournament (sign-up), darts, board games, network, & relax.	

CONFERENCE AGENDA, WEDNESDAY, MAY 10

Time	Before the sessions	Location
7:00 am	Registration opens	Rotunda
7:00 - 8:00 am	Breakfast	Stadium
7:00 - 8:00 am	Washington State Environmental Health Association Board Meeting	West Slope
8:00 - 8:30 am	Opening remarks Change in WSEHA President	Stadium
8:30 - 9:30 am	PLENARY: Improving the resiliency of cleanup projects by incorporating health equity data and perspectives *Marian Abbett, Ecology* *Matt Fuller, Ecology* *Justin Zakoren, Ecology* *Chris Matter, TPCHD* *Leslie Jimenez, PHSKC*	Stadium

Time	Old Town	New Tacoma	Lakewood	Ruston
9:45 - 10:35 am **Session 8**	Evaluation of the cleaner air room intervention during wildfire smoke events in Kittitas County moved to Tues, 11:00 Session 5 *Julie Fox, DOH* *Kaitlyn Kelly, DOH* *Kayla Hamme, DOH*	Building Code requirements for food trucks in Washington State (Virtual presentation) *Matt Charles, L & I*	Resuscitating a LHJ School Program *Suzy Howard, CDHD*	Toxic algae outbreak on the Columbia River in Tri-Cities, WA *Jim Coleman, BFHD*
10:45 - 11:35 am **Session 9**	Transient Accommodations: What's in your hotel room? *Doug Hartfield, DOH*	FDA Program Standards & you: A collaborative approach to program improvement *Susan Shelton, DOH* *David Engelskirchen, FDA*	School Environmental Health & Safety Program expansion: Lessons from year 1 in science & laboratories *Erin Hockaday, BFHD* *Lauren Lien, BFHD*	Uses of environmental data for public health actions on freshwater harmful algal blooms in Washington *Gopal Mulukutla, DOH* *Marnie Boardman, DOH* *Nancy Feagin, DOH* *Stephen Deem, DOH*
11:45 am - 12:30 pm	Lunch Closing remarks			Stadium
1:00 - 2:30 pm	FIELD TRIP: Environmental Learning Center			5715 Animal Rd, Tacoma
1:00 - 2:30 pm	FIELD TRIP: Washington Onsite Sewage Association/Stormwater Center			206 W Pioneer, Puyallup

THE SOCIAL STUFF
What you need to know

Monday Evening Social @ Hotel Murano
5-7 pm

Please join us in the Stadium room of the Hotel Murano following sessions. The social will feature a poster learning session, light appetizers, beverages, and live music. This is a great way to unwind while networking with colleagues. Each attendee receives one drink ticket with their registration.

Tuesday game night @ Dystopian State Brewery
6-9 pm

We hope to see you here! Pick up a friendly game of cornhole, darts or choose from many board games. The venue has an expansive view of Commencement Bay, so it's a great place to hang out, network and watch the sunset if you don't prefer games. Check out their website for photos and their tap menu. The Cornhole Tournament is back! Signup (required) below.

You can find a few take-out food options nearby. We linked their websites for menus and phone and online ordering. Stink has an assortment of sandwiches, salads, and antipasto plates to choose from. Red Star Taco Bar has tacos and other Mexican fare (Taco Tuesday specials are dine-in only), while Puget Sound Pizza serves pizza and other pub fare.

Click here to sign-up for the cornhole tournament

Click here to see local food & points of interest around town

Tuesday @ Washington State History Museum
5:30-9:30 pm

Join us to explore featured exhibits and the Great Hall of Washington History that showcases some of our state's earliest history and artifacts from Native American civilizations and cultures. Admission is included for AEC participants! You can take the Sound Transit T-line from the Convention Center Station to Union Station for free, or drive and pay to park. We'll meet in the Mezzanine at Washington State History Museum, 1911 Pacific Avenue, Tacoma.

ABOUT YOUR SESSIONS

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Session	Abstracts and speaker biographies or description
Pool Inspector Training: New Tacoma	The Department of Health Water Recreation Team invites you to join us in an interactive pool inspection training. Learn about WRF inspection violations, which ones are common and which are most associated with voluntary or ordered closure. Learn how a swimming pool (WRF) is put together and how to understand the system at a glance. Then see an actual pool facility for some hands-on training. Learn how to conduct an inspection, use the DOH enforcement guidance, and identify imminent health hazards. Learn the basics of lifeguarding and how to evaluate a lifeguard operation for compliance. Learn how to evaluate and understand a pool system and help your pool operators do a better job managing their pools for safety and health. **Justin Law:** Greetings Environmental/Public Health partners. I am honored and thrilled to be a presenter at the 2023 AEC. My public health career began in Savannah, Georgia as an environmental health specialist in 2009. Since then, I have worked for local and state health departments in various environmental health programs in Georgia, North Carolina, and Washington state. My current position at DOH is plan review lead in the water recreation program. I look forward to connecting and partnering with you all. **Dave DeLong** joined the Tacoma-Pierce County Health Department in 1988 and began inspecting pools in the summer of 1989. Throughout his career, Dave has always had WRF responsibilities, and has experience working both as a regulator and in regulated facilities. As Executive Director of Safety and Risk Management at the YMCA of Pierce and Kitsap County, Dave gained experience in lifeguard oversite that is unique in our field. In this presentation, Dave hopes to share with you a bit about lifeguarding and a way to evaluate a lifeguard plan/program. **Alyssa Payne** has worked in public health since 2015 starting as an Environmental Health Specialist at Clark County Public Health. Alyssa has worked in several programs with main responsibilities including the regulation and enforcement of permitted water recreation facilities and seasonal monitoring of designated natural swimming areas. At DOH, Alyssa is continuing her work in their Water Recreation Program and is excited to present data collected from local health partners.
Wright Park Playground field trip	Start your Annual Educational Conference at beautiful Wright Park in Tacoma to learn more about playground safety. We will be going over inspection basics, pointing out how to identify hazards such as falls, head entrapments, entanglements and more. Park staff will also be giving a brief presentation on playground maintenance. Use this map to navigate your way to the playground in this 27 acre arboretum – be aware that parking is limited in this location. Wear sturdy, nonslip shoes and comfortable clothes as you may be playing on some of the equipment! Bring your own inspection tools if you have them.
Welcome comments	**Anthony L-T Chen** is the Director of Health of Tacoma-Pierce County Health Department. As the chief health strategist for Pierce County, he promotes a policy, systems and environmental change approach to advance the Health Department's vision of healthy people and healthy communities. A Duke University medical school graduate, he completed family medicine residency at the University of Cincinnati and a faculty development fellowship at Duke University, and a fellowship in minority health policy at Harvard University. He received his Masters of Public Health at Harvard School of Public Health and has taught at medical centers and universities. Chen has earned praise for his work as an effective community convener and his ability to build strong partnerships with local health systems, the healthcare community, education, and many community organizations.

ABOUT YOUR SESSIONS

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Session	Abstracts and speaker biographies or description
Welcome comments	**Attorney General Bob Ferguson** is an experienced lawyer, independent leader, and fourth-generation Washingtonian. As the state's chief legal officer, Bob is committed to protecting the people of Washington against powerful interests that don't play by the rules. He is a fourth-generation Washingtonian, a graduate of the University of Washington and New York University law school. He has hiked hundreds of miles of Washington trails, climbed many of the state's highest peaks, and is an internationally rated chess master. Bob and his wife, Colleen, are the proud parents of 15-year-old twins, Jack and Katie. **Umair A. Shah, MD, MPH**, was appointed Secretary of Health for the great State of Washington by Governor Jay Inslee in December 2020. He is the first Asian-American physician of South Asian descent to serve in this leadership role in the history of Washington, home to over 7.6 million people. Dr. Shah earned his BA (philosophy) from Vanderbilt University; his MD from the University of Toledo Health Science Center; and completed an Internal Medicine Residency, Primary Care/General Medicine Fellowship, & MPH (management), at the University of Texas Health Science Center in Houston. He also completed a global health policy internship at World Health Organization headquarters in Switzerland. Over his career, Dr. Shah has been a clinician, innovator, educator, and leader in health. He has been a champion for underserved communities, at the intersection of health and healthcare, while charting a fresh course in health by centering on the cornerstone values of equity, innovation, and engagement. See more about Dr. Shah Secretary of Health | Washington State Department of Health. **Pennye Nixon** founded Etta Projects, a non-profit organization working in Bolivia with rural villages providing access to clean water, sanitation and healthcare. She holds a M.A. in Psychology from PLU and a B.A. in Human Services from the University of Tennessee. Nixon was awarded the RESULTS Kitsap Peninsula Global Humanitarian Award for her work with global poverty and the International Woman of the Year Award by the city of Montero, Bolivia. She was recently named as The Greater Tacoma Nobel Peace Prize Laureate for 2017 and was honored to participate in the Nobel Ceremonies in Oslo Norway in December.
Session 1: Old Town Engaging teens in Environmental Public Health	How do you get students excited to work with data? Engage them with things they care about: real data with real impacts, correcting injustices and making the world a better place. In this session, we'll discuss three programs that DOH's Washington Tracking Network (WTN) launched to bring public health and equity into high school science education. 1. WTN partnered with the Puget Sound Educational Service District to create high school learning materials that use WTN to study environmental health and health disparities. 2. WTN created a professional development course for teachers to use WTN in their classrooms. 3. Through the new WTN Youth Science Contest, students use WTN to engage with data and learn how it connects to their communities. In the three tracks – health science, community engagement, and science communication – students examine the equity impact of the data and of their projects. We'll demonstrate some of the winning projects. These novel outreach projects exceed traditional communications methods to reach new audiences in innovative ways, increase awareness of environmental health, health disparities and equity issues, increase data literacy, and help develop the next generation of public health professionals. **Lize Williams** specializes in using public health data to engage the community. As a communications strategist for the Washington State Department of Health, she supports the Washington Tracking Network (WTN), a CDC-funded program that makes public health data more accessible to improve the health of communities. She has driven partnerships with the education sector in Washington and her WTN educational partnership work was honored with the 2022 Public Service Recognition Week Extra Mile Award.

ABOUT YOUR SESSIONS

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Session	Abstracts and speaker biographies or description
Session 1: New Tacoma Understanding increased risk aquatic venues	Increased Risk Aquatic Venues, including Splash Pads and wading pools, present unique concerns to the qualified operator and public health inspector. This presentation will provide important background information as to what causes these venues to be classified as increased risk, and Model Aquatic Health Code (MAHC) based applied approaches to reduce risk of bather illness and injury. **Dewey Case** serves as the Technical Director for the Council for the Model Aquatic Health Code. His career started as a part time lifeguard, evolved into servicing pools, then began managing aquatic facilities while in college. He has served in various roles with the YMCA of the USA, the local and state chapters of the American Red Cross, on the Lifeguarding and Bather Supervision Technical Committee for the MAHC 1st Edition, and on the Technical Review Committee for the MAHC 3rd Edition, as well as managing various aquatics facilities over a 24-year span. He holds multiple Instructor Trainer certifications from the American Red Cross, as well as instructor credentials with the Pool and Hot Tub Alliance. In addition to his role with CMAHC, Dewey is the Commercial Sales Manager for Adcock Pool and Spa in Hattiesburg, MS.
Session 1: Lakewood Effectiveness of HEPA air cleaners in congregated shelter settings	The COVID-19 pandemic increased awareness of indoor air quality in congregate settings. New cases of COVID-19 in group settings such as homeless shelters before the availability of effective vaccines prompted public health agencies to identify more immediate solutions to mitigate the spread of disease. One of the multiple layered approaches to prevent transmission was to increase effective air exchange rates through the use of portable air cleaners that utilized HEPA filtration. This panel presents the experience of Public Health – Seattle & King County (PHSKC) in providing thousands of portable HEPA air cleaners to congregate settings, and especially to homeless shelters. Speakers will describe the logistical challenges encountered in sourcing and deploying the large number of air cleaners, and how these challenges were overcome in congregate shelter and other settings in King County, WA. Speakers will also describe the results of a collaborative study with researchers from the University of Washington that evaluated the efficacy of the air cleaners at some homeless shelters. This evaluation measured differences in indoor vs outdoor particles, CO_2 air quality, and monitored the usage of the air cleaners. The team used low-cost particle sensors to monitor air quality, which is an emerging tool for indoor studies. Another innovation the team employed was the use of an energy monitor with each portable HEPA air cleaner that indicated the usage and settings of each air cleaner throughout the duration of the study. The team conducted a survey of shelter operators and some clients following the study to better understand poor air quality peaks and trends in air cleaner usage. Speakers will describe the lessons learned in working with shelter operators, which led to guidance for training, usage, and maintenance of portable HEPA air cleaners. Examples of lessons learned that will be discussed include best practices for HEPA air cleaner settings and maintenance based on specific barriers and issues faced by congregate shelter operators. An example of a recommendation derived from the study results include the use of auto-setting on the portable HEPA air cleaners as a way to maintain healthy air while reducing noise and energy usage. Many of the study results provide information useful to difference congregate settings, which will also be described. The panel will discuss opportunities for the air cleaners to serve other purposes, such as improving indoor air quality during wildfire smoke episodes. (Continued on next page.)

ABOUT YOUR SESSIONS

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Session	Abstracts and speaker biographies or description
Session 1: Lakewood (continued)	**Shirlee Tan** is the Senior Toxicologist for the Seattle & King County Public Health Department where she serves as a technical advisor for the department on issues related to chemical exposures, impacts and policies. She works to identify ways to reduce chemical exposures and effects at many levels, from guidance on individual actions to national policy recommendations. Dr. Tan serves on numerous advisory groups for WA State, focused on chemical policy and regulation around chemical use, toxics cleanup, wildfire smoke, and environmental justice. She is particularly concerned about children's exposures to toxic chemicals and their impacts on development. Dr. Tan currently serves as the chair of the EPA's Children's Health Protection Advisory Committee (CHPAC). She holds a PhD in cell and molecular biology from the University of San Diego, CA and conducted her postdoctoral research studying dopaminergic receptors and neurodegenerative pathways. **Dr. Edmund Seto** is Associate Professor of Environmental & Occupational Health Sciences specializing in Exposure Science at the University of Washington. His research involves the development of new exposure methods, including the use of sensors for community-engaged research on exposures to air quality and noise. He is currently working with public health practitioners to use air quality monitoring data to develop best practices for portable air cleaners. He also conducts spatial analyses relevant for understanding population health equity issues, and teaches the GIS in Public Health course at the University of Washington. **Thu Bui** has over 20 years of experience with Public Health-Seattle & King County, working in various programs such as Food Protection, Water Recreation, Communicable Disease and Epidemiology, Residential Indoor Air Community Outreach, Environmental Health COVID Recovery - Indoor Air Quality and Ventilation, School Environmental Health and Safety, COVID-19 Contact Tracing and Guidance, and Emergency Preparedness and Response. Thu's dedication as an educator and servant leader working with several homeless feeding programs has led her to her new role as the Senior Lead of the Donated Food Distribution Organization Program (DFDO) within the Environmental Health Services Division's Food Protection Program. She is excited and committed to building partnerships with charities and nonprofit organizations to provide food safety guidance, prevent foodborne illness outbreaks, and improve the well-being of people in need in the community. **Ching-Hsuan (Shirley) Huang** is a PhD Candidate in the Department of Environmental & Occupational Health Sciences at eh University of Washington in Seattle. Her research focuses on the use of air quality sensors to understand indoor air quality and the effectiveness of indoor air quality interventions.
Session 1: Ruston PFAS in Yakima County well water (panel discussion)	PFAS "forever chemicals" have been detected above state and federal health advisory levels in drinking water wells near the Yakima Training Center, in Yakima County. This talk will outline the special challenges posed by these unregulated contaminants in private residential wells and how state and local agencies are working together with community partners to address them. The suspected source of the PFAS is fire training activities with Aqueous Film Forming Foam (AFFF) at the Army training center. In 2021-22, the Army's off-base water testing detected PFAS in 155 private wells off-base. When levels are above EPA's 2016 Health Advisory Level (HAL) of 70 ppt for PFOS and PFOA, the Army is providing bottled water for drinking and cooking while a long-term remedy is developed. The SBOH adopted stricter State Action Levels for 5 PFAS in 2021. The state recommends no more than 10 ppt PFOA, 15 ppt PFOS, 9 ppt PFNA, 65 ppt PFHxS, and 345 ppt PFBS in daily drinking water for long-term use. Partners in this panel will share their perspectives and efforts to fill the gap between the two different action levels and to provide community-centered education, outreach, and alternative water supply/treatment for the impacted community. **Shawn Magee:** I have been with the Yakima Health District since 2016, and I started as an Environmental Health Specialist. I worked heavily in all of the EH programs at the Health District until 2019, when I became the EH Director. (Continued on next page)

ABOUT YOUR SESSIONS

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Session	Abstracts and speaker biographies or description
Session 1: Ruston (Continued)	Since that time I have worked in partnership with local and state agencies on a variety of issues in Yakima County, including nitrate contamination in groundwater, COVID-19 response, landfill fires, and PFAS in groundwater. It is our mission to preserve and protect the health and safety of the public by bringing education and awareness to the public about potential health risks that exist in the environment in which they live, as well as bringing resources to communities that eliminate exposure to those risks." **Holly Myers** started work in public health as an Environmental Health Director for Kittitas County Public Health, in early 2003, and later as Environmental Health Director for Yakima Health District. She developed and lead the first central Washington smoke management team for Ecology and later managed the operations team for Ecology's Office of Columbia River. These roles with Ecology and local health, and her current role with DOH rely on building collaborative partnerships to support communities, build equitable services and support environmental public health across our state. **Greg Caron** has worked for the Department of Ecology since 2001. He's worked primarily on the cleanup of contaminated sites, hazardous waste management, and hazardous spill response. He has also been the regional manager since 2016. **Claire Nitsche** (she/her) is a health educator with the Washington State Department of Health. She uses health psychology, behavior change theory, health literacy, and social marketing principles to drive community education, outreach, and engagement on environmental health issues. She specializes in PFAS education and outreach across the state. **Brandi Hyatt** hails from Yakima, WA, where she was born and currently lives. Her joys in life include her husband, two young children, and golden retriever. They love camping, hiking, reading, and being together. Beyond wife and mom, Brandi is a certified cosmetologist, and yoga instructor. Her heart is for people and building relationships. This has lead her into a new found passion for connecting and advancing her community towards access to safe water for homes, livestock, and land that have been impacted by PFAS chemicals.
Field trip School of the Arts	SOTA opened in 2001 in downtown Tacoma to allow easy access to organizations like the Museum of Glass, Tacoma Art Museum and Tacoma Arts Live. Coursework focuses on visual and performing arts. We will visit science rooms, a photography room, a sculpture room and a visual arts room. During the site visit, we will be looking at environmental health and safety items. We will be looking at things like lighting, sound and ventilation. We will be demonstrating testing emergency eyewash stations. We will peek in cabinets and storage areas to point out proper storage, labeling and age appropriateness of chemicals. We will leave as a group from the Hotel Murano at 3:15 for the half mile walk to the school.
Session 2: Old Town Leg 101: Public health and the legislative session	Today's presentation will provide an overview of Washington's legislative process and how bills affecting environmental public health are reviewed in the state. Joe and Jaime will discuss activities preparing for each session, how bills are reviewed, and how budget impacts are estimated. The session will also highlight the 2023 legislative session and review expectations for 2024. **Jaime Bodden** has been the Managing Director for the Washington State Association of Local Public Health Officials (WSALPHO) since 2017. Before working for WSALPHO, served as the director of a small health department in rural Wisconsin. Previously, Jaime has worked in global public health, focusing on gender development, community mobilization, and childhood development. Jaime earned BA degrees in Anthropology and Women's Studies from Marquette University and her Master of Public Health and Master of Social Work from Washington University in St. Louis. (continued on next page)

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Session 2: Old Town Continued	In her role with WSALPHO, she works to elevate local public health's role in making Washington State a safe, healthy, and vibrant place through advocacy, systems collaboration, and partnerships. **Joe Laxson** is the policy director within the Division of Environmental Public Health at Washington State Department of Health. His team leads legislative affairs, FPHS efforts, rule making activities for the division and works to reduce exposures to environmental hazards through legislative action, setting policy goals, and facilitating rulemaking projects. Prior to working at DOH, Joe worked at both Clark County and Island County in EPH programs. He holds a bachelors in Community Health Education from Portland State University and a Masters in Public Administration from the University of Washington.
Session 2: New Tacoma **Water recreation facility rulemaking update**	Washington State has regulated water recreation facilities since 1932. The last comprehensive update to the content of the rules took place in the late 1980's. The pool industry has dramatically changed in the intervening years. Learn how the rule is being updated to meet the current needs. **Dave DeLong** has worked in Environmental Health since 1988. The summer of 1989 was Dave's first exposure to the Water Recreation Program and has been actively involved in Water Recreation Health and Safety ever since. Dave also has broad experience in other EH programs including: Food Safety, School Safety, Zoonotic Disease, and Environmental Noise Control. Currently, Dave is working with the Board of Health to update the Water Recreation Facility Codes. **Alyssa Payne** has been working in public health since 2015. As an Environmental Health Specialist for Clark County Public Health, Alyssa gained experience in Water Recreation, Swim Beach Monitoring, Food Safety and Zoonotic Disease. Alyssa recently transitioned to Washington State Department of Health as a Public Health Advisor in the Water Recreation Program and is deeply involved in the Water Recreation rule update.
Session 2: Lakewood Improving ventilation in long term care facilities	Washington State Department of Health (DOH) will share progress and findings from two projects designed to increase the understanding of ventilation and interventions in larger facilities used by vulnerable populations. Project 1: We are assessing current ventilation practices that impact indoor air quality during periods of poor outside air quality, such as wildfire smoke events, and extreme heat, while considering the steps to reduce risk of transmission of disease indoors. The goal of this project is to help DOH better understand existing practices and barriers to achieving best practices in larger facilities during extreme outdoor events. Project 2: This study investigates the effects of low-cost interventions, such as opening windows and doors, turning on built-in bathroom fans, and adding portable fans on air exchange rates (AERs) in two long-term care facilities in Skagit County, Washington. Carbon dioxide (CO_2) gas was introduced into empty residents' room until the room CO_2 concentration was approximately 3,000 ppm. Using real time CO_2 monitors, the change in room CO_2 concentration was recorded and used to calculate the AER for the room. This was repeated with different combinations of interventions. Opening doors and windows and adding a portable fan in the window significantly improved the AER compared to controls. Wind speeds, both inside and outside the room, were significantly associated with the AER. Long-term care facilities are at high risk of outbreaks of airborne contagious diseases. Low-cost interventions that pull outside air into resident rooms are effective in improving the AER in these facilities without requiring costly ventilation system upgrades. **Kayla Hamme** is an Indoor Air Quality Epidemiologist in the Climate and Health section at the Washington State Department of Health. Her main projects focus on assessing indoor air quality and ventilation practices used both in larger facilities and in residences that address the impact of extreme outside events, such as wildfire smoke and heat. Kayla conducts air sampling and works closely with external partners to identify barriers and areas for improvement with a broader goal of improving recommendations for best practices.

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Session 2: Lakewood (Continued)	**Pranav Srikanth** is a PhD student at the University of Washington School of Public Health, studying Environmental Health Sciences (Occupational Hygiene) in the Department of Environmental and Occupational Health Sciences. His research advocates for the occupational experiences of vulnerable or underrepresented worker groups, focusing on improving workplace mental health, reducing exposure to psychosocial stressors, and reducing the risk of exposure to hazardous particles through improved ventilation. **Becky Doe, MS, CIH, CIC** is a Certified Industrial Hygienist and Infection Preventionist with over 30 years of technical and management experience. She is an expert in the areas of industrial hygiene, infection control, hazardous waste management, and toxicology. In her current role at DOH she provides infection prevention and industrial hygiene consultation in both healthcare and non-healthcare settings. Specific areas of focus include ventilation, disinfection, infection prevention practices, and Legionella outbreak investigations.
Session 2: Ruston How a drinking water program in Pierce County could help provide a model for other counties	Tacoma-Pierce County Health Department has maintained a Drinking Water Program since the early 1980's. Issuing permits for well siting and construction; water treatment; water adequacy for various commercial activities including food, child-care, adult family homes, and schools; regulating over 1,400 Group B water systems; conducting Sanitary Surveys on hundreds of Group A water systems; applying for and managing Federal Grants, and conducting data collection efforts to map groundwater issues in Pierce County; the program has grown to become a robust and self-sufficient model for managing local and rural groundwater policy. The program is currently working with Foundational Public Health to provide expertise and materials for other jurisdictions to build and grow their own Drinking Water Programs. Find out more about the TPCHD Drinking Water Program's regular activities, grant work, and roles in ensuring Pierce County citizens have reliable and safe groundwater sources. **Josh Hird** has been with the TPCHD Drinking Water Program for five years and worked previously as an analytical chemist in an environmental lab. He has a BS in Molecular and Cellular Biology from the University of Puget Sound.
Session 3: Old Town Foundational Public Health Services panel	**Chelsea Henry** is a Foundational Public Health Services Advisor at the Washington State Department of Health. **Sue Sullivan** is the Environmental Health Director at Whatcom County Health Department. **Jesse Cox** is the Environmental Health Director at Kittitas County Health Department. **Marnie Boardman** is a Climate Health Advisor at the Washington State Department of Health. **Judy Olsen** is an Environmental Health Program Manager at the Tacoma-Pierce County Health Department.
Session 3: New Tacoma Geographic and demographic context of share pantries and community refrigerators as hyper-local food assistance resources in the Puget Sound Region of Washington state.	This presentation highlights our preliminary study of the geographic and demographic context of share pantries and community refrigerators and their users in the Puget Sound region of Washington state. Share pantries and community refrigerators are generally small, unattended, open-access food sharing areas that use a "take what you need, leave what you can" concept, meaning they are supplied by donations from members of the local community. More than 300 pantries and 10 refrigerators were georeferenced and analyzed in ArcGIS, and over 100 user surveys were collected during Autumn-Winter 2022. We found that share pantry and community refrigerators may serve a subset of the population that has limited access to traditional food assistance providers, like food banks and food pantries, and may even serve a complimentary role. Join us to learn more! **Tania Vallejo** is an environmental Engineer with professional experience in environmental and industrial hygiene consulting. She is a current Master of Science student in Environmental Health Sciences at the University of Washington and Graduate Research Assistant on the Share Pantry & Community Refrigerator Project. (Continued on next page.)

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Session 3: New Tacoma (Continued)	**Emily Hovis** is an Assistant Teaching Professor in the UW Department of Environmental & Occupational Health Sciences. She is an environmental health professional with experience in public education, food safety, and environmental compliance. When not teaching Emily enjoys gardening, cooking, and making fermented foods for her husband James, and children, Charlotte and Calvin.
Session 3: Lakewood Challenges and updates in wildfire smoke research: Low cost-sensor data acquisition and health effects	Wildfire smoke events have become more prevalent in the Pacific Northwest in recent years and populations affected by wildfires suffer both economic loss and negative health impacts from smoke exposure. Despite the regional efforts in PM2.5 monitoring, the PM2.5 concentration from fixed monitoring sites may not reflect individual microenvironmental conditions due to variations in the spatiotemporal distribution of PM2.5. Individual PM2.5 concentration monitoring results could better inform people making decisions on PM2.5 exposure reduction during wildfire smoke events. Low-cost sensors are helpful in assessing both indoor and outdoor particle exposure levels during wildfire smoke events. Our project collected results from PurpleAir monitor locations in King County from September to October, 2022, and retrospectively analyzed the PM2.5 concentration and their spatial distributions. Our result showed higher outdoor PM2.5 concentration compared to the synchronous regional background beta-attenuation mass (BAM) monitoring results. Outdoor sensors also reported an overall higher PM2.5 concentration levels compared to the respective indoor sensing results. The results showed PM2.5 concentration discrepancies between regional background and individual low-cost monitoring locations, as well as between indoor and outdoor low-cost sensor locations. Low-cost particle sensors demonstrated feasibility of capturing microenvironmental PM2.5 concentration changes and the monitoring results can be further analyzed with respect to housing conditions, air treatment status, and behavioral changes to provide exposure information and help people reduce PM2.5 exposures during wildfire smoke events with public health guidance. **Lilian Liu** is a PhD student from Department of Environmental and Occupational Health Sciences at the University of Washington. Her research mainly focuses on wildfire smoke exposure assessments, air quality sensor collocations and uses, individual particle exposure and health outcome measures. Lilian has an MS in exposure science and BS in environmental health and physiology from University of Washington. **Annie Doubleday** is a spatial epidemiologist on the Washington Tracking Network team at the Washington State Department of Health. Annie's expertise includes air pollution and wildfire smoke exposure assessment and epidemiology. Annie is also a PhD student in the Department of Environmental and Occupational Health Sciences at UW.
Session 3: Ruston Managing EH agencies in a post pandemic world	The COVID-19 emergency tested public health agencies in ways never before imagined. The need to respond to a rapidly evolving crisis that affects public health, and regulated business was put into stark relief. As a front-line consultant to over 100 agencies during the pandemic, the speaker will discuss the lessons learned, and how agencies can prepare to be ready for the next crises - whatever that might be.

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Session 3: Ruston (Continued)	**Cameron Garrison** is a thought leader of the modern era of software as a service (SAAS) for environmental health. Cameron founded the first national cloud based EH platform in 1999, which grew to 600+ deployments by the late 2000's. In 2011 Cameron founded iGov Technologies (acquired by HealthSpace in 2014). Cameron is sometimes described as "obsessed" with service and delivering for EH departments and has been involved in over 1,000 health department deployments over 23 years. Many of those deployments included extensive emergency preparedness and management response, and communication strategies and technology tools, for public health. In 2019 Cameron joined HealthSpace full time, assuming oversight of day-to-day operations for the client delivery division. In 2020 Cameron reprised the role of advisor and consultant to more than 100 state and local public health departments in response to the COVID-19 pandemic. Of note Cameron worked with the state of Hawaii on mass communication and contact tracing deployed statewide, and for all inbound travelers to the state, resulting in 700,000 person days of labor saved by the health department (a number reported by the state). Cameron is a regular speaker at environmental health conferences around the country.
Tuesday morning plenary session Orca recovery	To address the dire circumstances of the struggling orca population, Governor Jay Inslee issued Executive Order 18-02 directing state agencies to take immediate actions. The order established the Southern Resident Killer Whale Task Force comprised of about 50 members from state agencies, the Legislature, tribal and local governments, businesses, and nonprofits, to develop a long-term plan to recover Southern Resident orcas. Tara Galuska will provide an overview of the Southern Resident killer Whales, the Governor's task force and recommendations, and some of the progress being made. **Tara Galuska** was appointed by Governor Jay Inslee as the state's orca recovery coordinator in May 2021. Before that she worked in salmon recovery at the Washington State Recreation and Conservation Office and led the Salmon Section. She has also worked on aquatic planning and science at the Washington Departments of Ecology and Natural Resources. Tara received her bachelor of science degree in environmental science, policy, and management from the University of California at Berkeley and her master's degree from The Evergreen State College in Olympia. She lived, taught, traveled, and worked overseas for several years, in Asia and Central and South America. Tara lives in Olympia with her partner and two daughters. She loves soccer, ultimate Frisbee, horseback riding, backpacking, traveling, and spending time with her family.
Session 4: Old Town Addressing Environmental Public Health issues associated with homelessness	The Washington State Department of Health (DOH) has historically not been directly involved in issues around homelessness, but a small project has been created within the Environmental Public Health Division to find a role for the department. The program was initiated in late 2019, but was largely put on hold due to staff being activated for pandemic response. The project was reactivated in mid-2022 and staff have recently been hired to develop the project. The project's primary goal is to work with Local Health Jurisdictions to develop model programs through Foundational Public Health Services (FPHS) addressing health issues associated with homelessness. This could involve both environmental health issues impacting people experiencing homelessness or impacts on the local environment due to people living in places not meant for habitation. (Continued on next page.)

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Session 4: Old Town (Continued)	**Colin Maloney** (they/them) is the manager of a new program at the Washington State Department of Health's Environmental Health Division which aims to address health impacts of homelessness throughout the state. Colin has over 13 years of experience working in areas associated with homelessness, including working with homeless young people and managing a supportive housing project for people who had been chronically homeless and living with disabilities. They have a Masters in Public Health from the University of Washington's Community-Oriented Public Health Practice (COPHP) program and an undergraduate degree in Community Health Education from Portland State University.
Session 4: New Tacoma Rats and bugs- Oh my! Addressing pest infestations in food service establishments	Many food service establishments suffer from pest infestations. This presentation will review the most common pests in FSE's, how to talk to your operator about pest control and IPM, how to read a pest control report and what it tells you and what it doesn't, and when does the severity of an infestation rise to the level of an imminent health hazard. We will also review some online training resources for inspectors as well as some considerations for pest proofing through facility design. After the session on Rodents in Food Establishments. Join the Public Health Seattle & King County's Rodent Control Program for a neighborhood rat safari. We will explore a few blocks/alleys in the nearby area and learn about rodents and urban environments. **Leah Helms** currently supervises several EH programs at Public Health - Seattle & King County that include Seattle's Rodent Program, Seattle Sewer Baiting, Illegal Dumping, Pet Related Businesses and Homelessness Response. **Dr. Liz Dykstra** is the Public Health Entomologist for the Washington State Department of Health. She provides leadership and subject matter expertise on vector-borne diseases and arthropods of public health importance for the state. Dykstra is also an adjunct associate professor in the Department of Entomology at Washington State University and an affiliate faculty member with the School of Public Health, University of Washington. Earlier in her career, she served as a Peace Corps Volunteer in Senegal, West Africa, and as an active duty entomologist in the U.S. Navy. She continues to serve in the U.S. Navy Reserves. **Helena Barton** is a Health & Environmental Investigator Supervisor in the Food & Facilities Program at Public Health Seattle & King County (PHSKC). Her environmental public health career began at Chatham County Health Dept with the EH Division in Savannah, GA. Her experience progressed from inspections to a leadership role as Asst EH Manager. She eventually relocated with her family to Washington for a position with PHSKC. This local health experience led to her position as a Public Heath Advisor with WA State DOH for 11 years. Now Helena has come full circle to return to PHSKC. Helena is a graduate of Mercer University in Macon, GA with a Bachelor of Science Degree in Biology and has more than 25 years of environmental public health experience. **Kriston Pape** is a Health and Environmental Inspector-Rodent Specialist for Public Health – Seattle & King County. Kris is a licensed Pest management professional with over 20 years of experience working on pest issues in the Seattle and King County area.

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Session 4: Ruston What to do about the wild whirlwind of wastewater management	Public Health- Seattle & King County (PHSKC) had developed a social vulnerability map based on CDC's Social Vulnerability Quintiles. On-site sewage system (OSS) information such as age and failure distribution were overlayed on the social vulnerability map to offer a visual distribution of the social vulnerability quintiles and on-site sewage system failures. In King County, 46% of OSS are located in the Urban Growth Area. Among these OSS, 75% are 30 years old or older. Older OSS are more likely to fail or malfunction in the upcoming years. Many of the properties located in the Urban Growth Area have limited space for repairs or replacements. Often times, sewer is not available, or is far enough that a sewer connection may be too costly for an individual to carry, with some estimates exceeding $150,000. In situations where a sewer connection is prohibitive, a technologically advanced OSS needs to be installed, which tends to be more expensive to install and requires frequent maintenance. Though some financial assistance options exist for OSS replacements and sewer connections, there are very few options for OSS maintenance. Improper maintenance and operation of OSS can lead to a premature OSS failure. Most of the OSS failure hot spots observed on the map correspond to the general areas identified as socially vulnerable. Given the inequitable current and potential challenges, it is salient to create partnerships with communities, organizations and sewer districts to identify potential issues and solutions, plan infrastructure development, and secure funding. PHSKC sought a wastewater planner to trailblaze these efforts by coordinating with stakeholders to understand community-specific challenges and plan towards finding equitable solutions for wastewater management. This presentation will be an overview of sewer connection challenges and our efforts to collect information, as well as an exploration of our future plans and partnerships. **Silvia-Antonia Rus** graduated with a BS in Environmental Health from University of Washington in 2019 and has been working as a Health & Environmental Investigator in the OSS Operation & Maintenance Program at Public Health- Seattle & King County since then. Her role includes conducting failure investigations and supporting owners throughout the OSS repair/replacement process, OSS maintenance, reviewing inspection reports, and participating in various community outreach and engagement events. She enjoys connecting with the King County community members and sharing resources with them. **Meagan Jackson** leads the On-site Sewage System Operation & Maintenance Program at Public Health - Seattle & King County. She has experience with low-tech on-site wastewater treatment system development, field evaluation of OSS, and the day-to-day work of a local health jurisdiction. One of her favorite parts of her job is building partnerships with the many organizations and individuals that the program works with.

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Session 5: Old Town The Washington State Environmental Health Disparities Map	The Washington State Environmental Health Disparities (EHD) map is the result of collaboration that occurred from 2017-2019 between community organizations, academia, and government agencies aimed at displaying environmental health disparity among Washington communities to guide investment and policy decisions. The map was modeled after a similar tool in California, called CalEnviroScreen. The map indicators were developed using feedback and input from community listening sessions held throughout Washington and the EHD workgroup. The workgroup included members from the University of Washington, the community coalition Front and Centered, the Puget Sound Clean Air Agency, and the Washington State Departments of Health and Ecology. The EHD map is based on a cumulative impact model that integrates environmental health hazard and exposure data with sociodemographic data to help capture the burden of pollution on communities and highlight communities with vulnerable populations in a visually intuitive way. The current map includes 19 indicators. Since the launch of the initial map in early 2019, several state agencies began using the map to help identify and give preference to highly impacted communities in their grants and projects. The map has been used to help advocate for the legislatively created yearlong environmental justice task force in 2019 and in 2021 the passage of the Healthy Environment for All (HEAL) Act, which creates a coordinated state agency approach to environmental justice. The law requires the Washington State Department of Health (DOH) to maintain and update the EHD map for evaluating and tracking environmental health disparities as the map is identified as a resource for state agency decision-making for helping them to prioritize communities with the highest risk from environmental health disparities. The HEAL Act also requires DOH to track changes in disparities over time, engage with communities and tribes, researchers and the Environmental Justice Council, expand training resources, and perform a comprehensive evaluation of the map every three years. The map has also been referenced in legislation related to the transition to a clean energy economy, climate change, urban and community forestry programs to make programmatic and funding decisions. This presentation will provide an update on indicator development, community and tribal engagement and training resources. **Jeff Bryant PhD** is a geographer and anthropologist that specialized in environmental spatial epidemiology. He has been on the Washington Tracking Network team since February 2022 and has recently taken the role as the supervising environmental epidemiologist in charge of the EHD map. He completed his undergraduate degree at Humboldt State University, his Masters at CSU Chico, and PhD at SUNY Albany in 2019. Prior to moving to Washington, he worked at the New York State Department of Health in the Bureau of Environmental and Occupational Epidemiology. **Michelle Fredrickson** is a climate change epidemiologist at the Washington State Department of Health. She completed her MPH at the Colorado School of Public Health and is passionate about using epidemiological methods to promote environmental justice in a changing climate. **Shelby Flanagan** is a Michigan native who moved to Washington in June 2022 when she was offered a position at the Washington Department of Health. She received a bachelors of science from Western Michigan University and a Masters of Public Health from Brown University. She is currently a spatial epidemiologist on the Washington Tracking Network Team. Her professional interests include using geographic information systems (GIS) to examine ways of improving environments particularly among minority communities.

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Session 5: New Tacoma *E. Coli* outbreak associated with the East African community in King County 2022	In August 2022 Public Health-Seattle & King County (PHSKC) investigated *E. Coli* O157:H7 (STEC) cases associated with the East African Community. A total of eight cases were identified. Three of eight cases were diagnosed with hemolytic uremic syndrome and one of those cases required dialysis. PHSKC's food and facilities program initiated a comprehensive investigation approach including identification of suspected food sources, investigation of retail food establishments indicated in ill persons food history, and community outreach and education. This panel discussion highlights the community outreach efforts as it relates to education, information dissemination, and community partnerships between the diverse stakeholders within the King County East African community and PHSKC. **Doug Dyer, MS RS**, Health and Environmental Investigator III at Public Health – Seattle & King County (PHSKC). In his current role, Doug is a Senior Technical Lead in PHSKC's Food and Facilities Program. His primary responsibilities include coordinating PHSKC's Foodborne Illness Investigation Team (FIIT), food inspection staff training, conformance with the FDA's Voluntary National Retail Food Regulatory Program Standards, and quality assurance/quality control program activities. Prior to moving to Washington state, Doug was employed as Supervisor of Washington County, Minnesota's food/pools/lodging/drinking water protection program. Doug received his Bachelor of Science in Fisheries Management from the University of Minnesota-Twin Cities and Master of Science in Environmental Public Health from the University of Wisconsin-Eau Claire. **Ali Omar, MPH, RS, CFSM,** Health and Environmental Investigator II at Public Health – Seattle & King County. Ali is fluent in four languages (Somali, Swahili, and Oromo). He enforces the Washington State retail food code and provides culturally competent education, technical assistance, and regulatory compliance services to food industries daily, schools, and water recreation facilities. Ali also investigates foodborne illness investigations at food establishments and injury investigations at water recreation facilities and responds to public complaints and other environmental health concerns. Ali received a bachelor's in Medical Anthropology and a minor in Human Rights laws from the University of Washington Seattle and a master's degree in Public Health from the University of Michigan School of Public Health in Ann Arbor, Michigan.
Session 5: Lakewood Air monitoring in schools & childcare facilities using low-cost sensors	The Washington State Department of Health (DOH) collaborated with Tacoma-Pierce County Health Department (TPCHD) on a project to develop a protocol to use low-cost air quality sensors to collect air quality measurements in schools and child care facilities. Our goal was to develop a protocol that is practical and informs decision-making. We used low-cost sensors to collect fine particulate matter (PM2.5) and carbon dioxide (CO_2) measurements at two child care facilities over several months, including a period of wildfire smoke. Based on our experience, we developed a draft protocol that includes: 1) siting sensors indoors and outdoors, 2) using sensor data to gain a general understanding of air quality, and 3) using sensor data to inform immediate decision-making during a period of high air pollution, such as wildfire smoke. We plan to use the protocol to collect air quality data in 2 additional child care facilities. During this presentation, we will present the air quality data and review the monitoring protocol. We welcome discussion about how schools and child care facilities are already using air sensor data for informing health decisions, and anticipated benefits, challenges, and limitations of the monitoring protocol. **Orly Stampfer** is an Indoor Air Quality Epidemiologist with the Climate and Health Section at the Washington State Department of Health. Orly currently focuses on strategies to monitor indoor and outdoor air pollution using low-cost sensors, with the goal of promoting healthy indoor air quality. (Continued on next page.)

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Session 5: Lakewood (Continued)	**Julie Fox** is an air quality epidemiologist at the Washington State Department of Health within the Climate and Health Section. Her air pollution work includes investigating health impacts of air pollutants, developing health recommendations for reducing exposures, and providing technical support and education to internal and external partners. With the rise of wildfires throughout the Pacific Northwest over the last several years, Julie's efforts have predominantly focused on protecting health from wildfire smoke exposures.
Session 5: Ruston Oak Harbor dye study	The City of Oak Harbor replaced their wastewater plant (WWTP) and outfall in 2018. The DOH Office of Environmental Health & Safety, in cooperation with the USFDA and other stakeholders, conducted a dye study in Oak Harbor in September 2022 to evaluate potential impacts of the new WWTP and outfall on adjacent commercial shellfish growing areas. This presentation will detail the study methods, results, and application of these results in calibrating environmental models to extrapolate WWTP impacts under different 'worse case' scenarios. **Mark Toy** is an environmental engineer for the DOH Office of Environmental Health & Safety since May 2007. He has worked in environmental health at the local and state levels as well as overseas for almost 40 years. Mark is licensed both as a Professional Engineer and Registered Sanitarian in the state of Washington and has been a member of WSEHA since 2000.
Tuesday lunch Comments	**Lauren Jenks**, MPH, CHES, (she/her) is Assistant Secretary for Environmental Public Health at the Washington State Department of Health. She has had a 20-year career at the Department of Health, and, prior to that served as a Prevention Specialist for the Centers for Disease Control and Prevention. Lauren currently teaches Public Health Practice in the online MPH program at the University of Washington. She is on the board of the Washington State Public Health Association, and she represents the Association on the Governing Council of APHA. Lauren grew up in Pennsylvania and graduated from The Pennsylvania State University. She has her MPH from Temple University and a graduate certificate in Science Writing from Johns Hopkins University. She is passionate about public health and the environment and has a keen interest in helping people develop in leadership and scientific literacy. To that end, she maintains a public health blog at https://seekers.substack.com. At work and at home, she encourages people to act boldly, make a difference in the world, and to do so with a joyful heart. She lives in Olympia with her spouse, 15-year-old son, and 12-year-old daughter. Twitter: @laurenbjenks

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Tuesday afternoon plenary Film screening: *Turning of the Tide*	**Dr. Sheri Tonn** is retired from Pacific Lutheran University where she was a professor of chemistry. She was the founding board chair for Citizens for a Healthy Bay, now Communities for a Healthy Bay. She continues as a board member, and serves as the chair of the Policy and Technical Advisory Committee. Sheri continues to advocate for bay cleanup and to prevent recontamination, both to protect the environment and human health. Sheri has served on a number of local, state and national boards, and was the founding board chair of AASHE (Association for the Advancement of Sustainability in Higher Education). She is a native Oregonian and earned her B.S. in chemistry at Oregon State University and a Ph.D. in chemistry from Northwestern University. An avid SCUBA diver, she is looking forward to more dive trips in her retirement! **Bill Pugh** worked for the City of Sumner from 2008 to 2017 as both Public Works and Public Services Director. From 1974 to 2008, Bill worked for the City of Tacoma and was ultimately blessed to serve as Public Works Director and Assistant City Manager. Bill was honored to be named a national Top Ten Public Works Leader of the Year in 2007. He is a past board member and board president for Citizens for a Healthy Bay. Bill was the City of Sumner's Mayor from 2018 through 2021. He is a member of Sumner Rotary (past president), Sumner Main Street Association, Bonney Lake Food Bank Board, past member of the Sumner Gordon Family YMCA Citizens' Advisory Committee, and a past United Way of Pierce County Board Member. He is a registered Professional Civil Engineer in the State of Washington. He lives in Edgewood with his wife, Karen, and their dogs, Gracie and Sammie. Bill and Karen have 4 adult children and 5 grandchildren.
Field trip Center for Urban Waters	Award-winning environmental engineering. World-class applied research. Innovative water technologies. Collaborative Puget Sound policy. Join us at Center for Urban Waters on Tuesday, May 9. **Sign-up at Registration on Tuesday morning (required to attend).** You'll tour the world-class research center and learn about their leading role in: • Creative and sustainable solutions to restore and protect Puget Sound. • Conservation work in action at their building—certified as a LEED Platinum® project (the highest rating possible) in 2012. • State-of-the-science analytical laboratories that support scientists who monitor levels of pollutants in water, soils, sediment, flora and fauna, and air throughout the Puget Sound region. • The side-by-side work of undergraduate and graduate students with Urban Waters scientists and analysts, developing necessary skills for successful careers in environmental science and management.
Session 6: Old Town Indigenous One Health: Connecting traditional ecological knowledge & western science through "the four R's"	Background: The One Health model, which assesses the interconnectedness of animal, human, and environmental health, fails to recognize and amplify traditional ecological knowledge (TEK). To effectively center Indigenous knowledge within the One Health model, historically rooted in western science, the gaps and overlaps between both approaches must be explored. By integrating the "four R's" of the Alaskan First Nations people– respect, relevance, reciprocity, and responsibility– One Health can shift its framework to uphold Indigenous values. The aim of this study is to gather core themes within TEK systems that can be united with One Health practice so that Indigenous knowledge is prioritized. (Continued on next page.)

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Session	Abstracts and speaker biographies or description
Session 6: Old Town (Continued)	Methods: In June - August 2022, our team conducted semi-structured interviews with Indigenous scientists and knowledge keepers via Zoom video call. We recruited Indigenous Peoples of the Americas nationwide utilizing social media and Indigenous academic listservs. The interviews explored Indigenous perspectives on how the "four R's" influence worldviews and relationships to animals and the environment. We qualitatively analyzed the interview transcripts to determine key themes. A second round of semi-structured interviews will review these themes in more depth. Self-identified Indigenous participants will be recruited through snowball sampling of first-round interviewees. The transcripts from the second round of interviews will also be qualitatively analyzed for themes to be integrated into the One Health model. Findings: Participants noted gaps between their Indigenous worldviews and the One Health model, particularly relating to Indigenous rights, inter- and intra-species relationships, and reconciliation through redistribution. It was also noted that One Health must do more than integrate Indigenous values to indigenize, such as using Indigenous models and languages to engage and collaborate with TEK keepers. Interpretation: Interview responses highlighted areas in which the "four R's" are reflected in One Health principles, and domains where One Health must adapt to follow Indigenous practices. The participants indicated that they did carry the "four R's" throughout their worldviews, which identifies a connecting point for collaboration with One Health practitioners. **Michelle Pollowitz** is a second-year graduate student at UW getting a Master's in Environmental Health with a concentration in One Health.
Session 6: New Tacoma Cleaning & sanitizing under the NSF standards	The cleaning and sanitizing of food equipment and utensils is top-five risk factor for foodborne illness. This issue is addressed in a few different ways under the NSF food equipment standards. Key elements of dishmachine testing and certification under NSF/ANSI 3 will be covered, but cleaning and sanitizing extends beyond just warewashing. The cleanability aspects of hygienic design, clean-in-place (CIP), and heat treatment systems found in other NSF standards all play a role and will be discussed in this presentation as well. **Derek DeLand** is the Environmental Health Programs Manager in NSF's Regulatory Affairs division. In this role he serves as a point of contact for local and state regulatory agencies providing support with respect to NSF standards, certifications, and services. Derek came to NSF after 19 years at a local health department in Michigan where he served as a sanitarian and Environmental Health Director. He received his MPH with an environmental health concentration from the University of Illinois-Springfield. He is also a NEHA member and credentialed REHS/RS.
Session 6: Lakewood Helping your community with DOH indoor air quality resources	The Washington State Department of Health has many resources to help you help your community. Learn the latest on dealing with mold, directing asbestos and formaldehyde calls, resources for landlord-tenant issues, carbon monoxide, healthy housing, reducing exposures to toxic chemicals, and more. **Nancy Bernard, MPH, REHS,** manages the WSDOH Indoor Air Quality and School Environmental Health and Safety Programs, providing technical assistance, resources, and training for local health jurisdiction and K-12 school staff. Areas addressed include IAQ, wildfire smoke, asthma triggers, integrated pest management, noise control, lighting, communicable and zoonotic diseases, cleaning, disinfection, playgrounds, lab, art, and shop safety, hazardous materials, and school design. Nancy served on the Lake Washington School District Board of Directors 1997-2017. (Continued on next page.)

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Session	Abstracts and speaker biographies or description
Session 6: Lakewood (Continued)	**Ali Boris, PhD,** is a new Indoor Air Quality Specialist with the WSDOH Indoor Air Quality and School Environmental Health and Safety Program. Previously, she worked as an Air Pollution Specialist on ambient air monitoring audits and certifications with the California Air Resources Board. She earned a Master of Science from Portland State University in Chemistry, earned a doctorate from Colorado State University in Atmospheric Science, and was a post-doctoral scholar with the Air Quality Research Center at the University of California, Davis.
Session 6: Ruston *Vibrio* & other shellfish related illnesses: Reporting, response, & management	*Vibrio* is a bacterium that naturally occurs in our marine waters. Human pathogenic species of *Vibrio* that are specifically identified as common causes of shellfish-borne illness include *V. Parahaemolyticus* and *V. Vulnificus*. Epidemiologists, microbiologists, and public health advisors spend time identifying sources and confirming illnesses, in hopes to better understand the complexities of Vibrio bacteria and prevent further illnesses. We will cover the brief history of *Vibrio*, and its role in shellfish and human health. The presentation will also discuss specific illness investigation strategies employed by the Washington State Department of Health when investigating confirmed *Vibrio* illnesses. **Beth Lorence** is the Washington Department of Health Illness Prevention Coordinator and Vibrio Lead. She Has a master's in public health from The University of Texas Houston and came to DOH from the Washington State Department of Agriculture. With over 12 years working in the public health field, her previous roles include research coordinator for MD Anderson Cancer Center, public water inspector for Montana Department of Environmental Quality and a health inspector for the City of New York.
Session 7: Old Town Increasing community wildfire smoke readiness: A story of Washington public health agencies to distribute indoor air filtration devices to vulnerable individuals	Wildfire smoke is an increasingly important public health disaster, and there is a need for increased emergency response capacity and community readiness. The Washington State Department of Health utilized the CDC's Environmental Health Capacity grant to partner with three local health jurisdictions to distribute indoor air filtration devices to vulnerable individuals. Distribution of HEPA portable air cleaners and DIY box fan filter kits are becoming more common as a tool for agencies to improve readiness and capacity in their communities. This presentation will share the story of three local jurisdictions: Kittitas County Public Health Department, Public Health -- Seattle & King County, and Tacoma-Pierce County Health Department, including how to plan and implement intervention distribution, lessons learned, and best practices for future activities. **Kaitlyn Kelly** is the Air Quality Policy Specialist for the Washington State Department of Health. Kaitlyn develops policy recommendations and health guidance, with a focus on risk communication and developing partnerships to build alignment across the state and improve public health capacity to respond to poor air quality. Her work specializes in wildfire smoke public health response. **Kathy Ross** is a Health Promotion Coordinator at the Tacoma Pierce County Health Department. She has over 17 years of experience in air quality and currently serves on the Puget Sound Clean Air Agency Advisory Board, representing education. (Continued on next page.)

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Session 7: Old Town (Continued)	**Khanh M. Ho** has a Masters of Public Health and is currently overseeing environmental justice focused programs and community partnerships within the Environmental Health Division at Public Health-Seattle & King County, Khanh is passionate about implementing creative ways of knowledge-sharing, group facilitation and community organizing. She is the Program Lead for Fun to Catch, Toxic to Eat at Public Health-Seattle & King County and focuses on building relationships, capacity and empowerment with community partners to advance environmental justice values throughout the health promotion program. Khanh is also leading community partnerships development for the Climate Health & Equity Initiative, and overseeing outreach and education efforts for the Indoor Air Quality program that includes Box Fan Filter kit distribution. **Shirlee Tan** is the Senior Toxicologist for the Seattle & King County Public Health Department where she serves as a technical advisor for the department on issues related to chemical exposures, impacts and policies. She works to identify ways to reduce chemical exposures and effects at many levels, from guidance on individual actions to national policy recommendations. Dr. Tan serves on numerous advisory groups for WA State, focused on chemical policy and regulation around chemical use, toxics cleanup, wildfire smoke, and environmental justice. She is particularly concerned about children's exposures to toxic chemicals and their impacts on development. Dr. Tan currently serves as the chair of the EPA's Children's Health Protection Advisory Committee (CHPAC). She holds a PhD in cell and molecular biology from the University of San Diego, CA and conducted her postdoctoral research studying dopaminergic receptors and neurodegenerative pathways.
Session 7: New Tacoma Sanitizers, disinfectants, & cleaners: What's new, effective, & street legal?	What's new in cleaning, disinfecting, and sanitizing after the pandemic? We will review the safety issues and science behind disinfection chemicals used on both food and non-food contact surfaces. Discussion will include many new products, potential concerns, and labeling requirements. **Susan Shelton** is a public health advisor with the DOH Food Safety Program since 2016. She has been in public health at the state and local level since 2000 and worked as an educator, inspector, and program supervisor. Over the past year, she has been part of a national committee to prepare guidance for retail food operators on the safe use of disinfectants and sanitizers, Susan is a graduate of Eastern Washington University and looks for new ways to use history, science, and lessons learned to reduce public health risks. **Nancy Bernard, MPH, REHS,** manages the WSDOH Indoor Air Quality and School Environmental Health and Safety Programs, providing technical assistance, resources, and training for local health jurisdiction and K-12 school staff. Areas addressed include IAQ, wildfire smoke, asthma triggers, integrated pest management, noise control, lighting, communicable and zoonotic diseases, cleaning, disinfection, playgrounds, lab, art, and shop safety, hazardous materials, and school design. Nancy served on the Lake Washington School District Board of Directors 1997-2017.

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Session	Abstracts and speaker biographies or description
Session 7: Lakewood Interactive Dashboards to Explore Acute Pesticide Illnesses and Lead in Drinking Water Data	Acute pesticide illnesses and lead in school drinking water are significant public health issues that did not have a comprehensive and accessible way to display or communicate state-wide results of investigations and testing to the public. To address this, we developed interactive dashboards to examine spatiotemporal trends in acute pesticide illnesses and in lead in school drinking water. The acute pesticide illness dashboard covers the number of cases from 2010 - 2021 by route of exposure, exposure type, their severity and symptoms, demographic information on who's exposed, pesticide classes and target crops involved, pesticide label and personal protective equipment usage, and methods of application. The lead in school drinking water dashboard provides an overview of statewide test results, a map of schools tested from January 2018 - March 2022, the distribution of test results by county, district, school, and fixture type, and individual results for each school with testing dates. These dashboards were developed in consultation with stakeholders and allow users to visualize public health data in a variety of ways, allowing them to find the most relevant data to better inform decision-making. This presentation will show the current dashboards on the Washington Tracking Network, discussion on what needs the dashboards filled, determining what visualizations best serve data goals, technical aspects of creating the dashboard, and importance of stakeholder engagement. We also welcome any feedback to continuously improve the dashboards. **Daniel Farber's** background is in spatial and environmental epidemiology, with a PhD in plant pathology from Oregon State University, in which he investigated the epidemiology of wheat fungal pathogens, before switching to epidemiology of human pathogens at a postdoc at the Pacific Northwest National Laboratory and then joining the Washington Department of Health, where he is currently the pesticide epidemiologist and lead data systems epidemiologist. **Marc Arnaez** completed his PhD in epidemiology at Indiana University, studying the relationship between mental health stigma and self-appraisal of barriers to care. From 2019 to 2021 he worked as the lead epidemiologist for the State of West Virginia's Health Statistics Center, overseeing the analysis and reporting from the state's Vital Records System and the Behavioral Risk Factor Surveillance System. In 2021 he transitioned into a role with the Washington Department of Health's Childhood Blood Lead Program as the lead surveillance epidemiologist.
Session 7: Ruston NEP Shellfish Strategic Initiative highlights	The Shellfish Strategic Initiative focuses on Puget Sound recovery through preventing and reducing pathogen pollution from entering the Puget Sound, particularly fecal coliform. As a part of the National Estuary Program, we work with our partners to implement the Puget Sound Action Agenda and execute the Shellfish Beds Implementation Strategy by passing through funding to subrecipient activities. The Shellfish Beds Implementation Strategy lists key actions to address fecal pollution issues to increase harvestable shellfish acreage. These include: 1. Fund, support, and implement sustainable local Pollution Identification and Correction (PIC) programs, 2. Ensure and maintain sufficient livestock manure management, 3. Implement and support on-site sewage system (OSS) management and repair programs, 4. Fund and support the implementation of the No Discharge Zone to prevent boater waste from entering Puget Sound, 5. Implement wastewater treatment plant (WWTP) modifications that reduce precautionary closures zones around outfalls. (Continued on next page.)

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Session	Abstracts and speaker biographies or description
Session 7: Ruston (Continued)	This session will highlight some of the projects funded by the Department's first Shellfish Strategic Initiative cooperative agreement, detail the plan to operationalize the updated Shellfish Beds Implementation Strategy, describe how data management and analysis of marine water quality data factors into our program, and highlight program successes around Puget Sound as we now move into our second cooperative agreement with EPA which will run through 2028. This work has been funded wholly or in part by the United States Environmental Protection Agency under assistance agreements PC-01J18001 & PC-01J89801 to the Washington State Department of Health. The contents of this website do not necessarily reflect the views and policies of the Environmental Protection Agency, nor does mention of trade names or commercial products constitute endorsement or recommendation for use. As a part of the National Estuary Program Shellfish Strategic Initiative, **Chess Claire** (pronouns: they/he) integrates their passion for all things shellfish, environmental public health, and data engineer/analysis to evaluate water quality trends and help guide and evaluate programmatic success. Chess first discovered their interest in shellfish while studying for their B.S. at the University of California, Davis in (Graduated Summa Cum Laude in 2017) and has over 5 years of experience working on environmental issues. Through all their work, Chess is passionate about quality leadership and is invested in integrating Diversity, Equity, Inclusion and Environmental Justice practices into their work and life. **Audrey Coyne** has been working on environmental issues in Puget Sound for over 10 years, including three years as the Shellfish Strategic Initiative Lead for the Washington State Department of Health's National Estuary Program, and five years as a marine biotoxin coordinator. She holds a Master's of Marine and Environmental Affairs from the University of Washington and a BS in Environmental Science with a concentration in marine ecology from Western Washington University. **Clara Hard** has been working on environmental issues in Puget Sound for 10 years. Clara has a BS in Biology with a concentration in environmental science and a Master's of Marine and Environmental Affairs from the University of Washington. **Lea Shields** (pronouns: she/her) is an environmental planner with National Estuary Program Shellfish Strategic Initiative. Lea coordinates regional Pollution Identification and Correction (PIC) efforts around the Puget Sound and manages the Shellfish SIL's agricultural best management practice implementation projects. Lea's previous work at the Washington Department of Ecology and her local Conservation District helped her develop a strong understanding of nonpoint water quality issues and the value of effective partnerships in protecting public health. Lea holds a B.S. in Environmental Science and Regional Planning from Washington State University.

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Session	Abstracts and speaker biographies or description
Wednesday morning plenary Improving the resiliency of cleanup projects by incorporating health equity data and perspectives	For almost 100 years, from 1890 to 1986, the American Smelting and Refining Company (Asarco) operated a copper smelter in Ruston, Washington. Arsenic and lead pollutants from the smelter settled on the surface soil over 1,000 square miles of the Puget Sound basin. The extent of contamination is called the Tacoma Smelter Plume and cover parts of King, Pierce and Thurston counties. Left undisturbed, arsenic and lead remain in the soil and will continue to be a health risk for years to come. In November 2009, Asarco emerged from bankruptcy, having paid out the largest environmental settlement in U.S. history. Tacoma Smelter Plume communities benefit from $94.6 million for cleanup and education to reduce contact with contaminated soil. Starting in 2000, the Washington State Department of Ecology (Ecology) provided funding to health departments in King, Pierce and Thurston counties. This workshop will share the different approaches, successes and challenges from the cleanup efforts and community outreach in this collaboration. Some of the goals are to ensure all communities and residents learn about the contamination, the health risks, free soil sampling services and property cleanup for eligible households. Our focused communities across the plume speak over 120 different languages and come from a diverse landscape of cultural and ethnic backgrounds. To conduct effective outreach and education, it has been essential that we understand the characteristics and communication styles of these communities. Our partnership together has worked hard over the last five years to increase our focus on environmental health equity in our work and will share some of those efforts in this presentation. We will also share our approach to managing the health risks from these contaminants, including efforts to include health disparity data in assessing outreach and engagement. A high priority of this work is to ensure residents are aware of the contamination and have access to language appropriate and culturally relevant information. Marian Abbett is the project manager at the Department of Ecology for the Tacoma Smelter Plume project. She manages a team of staff who work on the Soil Safety Program, Yard Program, technical assistance efforts and the Dirt Alert! Program. Marian works out of the Southwest Regional Office (SWRO) of the Toxics Cleanup Program and also supports other large cleanup projects in the region. She has worked for Ecology the pasthree decades supporting and guiding these cleanup efforts. Matt Fuller works for the Department of Ecology as a Community Involvement and Outreach Coordinator fothe Tacoma Smelter Plume Project. Justin Zakoren works for the Department of Ecology as the Yard Program Outreach Coordinator for the Tacoma Smelter Plume Project. Leslie Jimenez, Ed. D. works for Public Health: Seattle-King County as an Educator Consultant III providing education and outreach to King County Residents on the smelter. Chris Matter works for Tacoma-Pierce County Health Department as an Environmental Health Specialist working on the Tacoma Smelter Plume Project and providing education and outreach to Pierce County residents.

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Session	Abstracts and speaker biographies or description
Session 8: Old Town Evaluation of the Cleaner Air Room Intervention During Wildfire Smoke Events in Kittitas County	Washington State Department of Health and Kittitas County Public Health Department partnered to evaluate the cleaner air room intervention as a method for reducing wildfire smoke exposures among vulnerable populations in the summers of 2021 and 2022. The cleaner air room concept is designed for temporary use during outside air pollution events, like wildfire smoke, where people focus on staying in a room in their home and follow steps to improve indoor air quality. For this pilot project, we enrolled people with COPD or asthma in Kittitas County, WA, an area that frequently has wildfire smoke events. We established a cleaner air room in each participant's home, provided them with HEPA portable air cleaners, and taught them how to use their cleaner air room during wildfire smoke events. We'll share our findings about participants' use of cleaner air rooms and how well they were able to maintain lower smoke levels indoors with this intervention. **Julie Fox** is an air quality epidemiologist at the Washington State Department of Health within the Climate and Health Section. Her air pollution work includes investigating health impacts, developing health recommendations for reducing exposures, and providing technical support and education to internal and external partners. With the rise of wildfires throughout the Pacific Northwest over the last several years, Julie's efforts have predominantly focused on protecting health from wildfire smoke exposures. **Kaitlyn Kelly** is the Air Quality Policy Specialist for the Washington State Department of Health. Kaitlyn develops policy recommendations and health guidance, with a focus on risk communication and developing partnerships to build alignment across the state and improve public health capacity to respond to poor air quality. Her work specializes in wildfire smoke public health response. **Kayla Hamme** is an Indoor Air Quality Epidemiologist in the Climate and Health section at the Washington State Department of Health. Her main projects focus on assessing indoor air quality and ventilation practices used both in larger facilities and in residences that address the impact of extreme outside events, such as wildfire smoke and heat. Kayla conducts air sampling and works closely with external partners to identify barriers and areas for improvement with a broader goal of improving recommendations for best practices.
Session 8: New Tacoma Building Code requirements for food trucks in Washington State	**Matt Charles CBO** is a plans examiner for the Washington State department of Labor and industries. He has been with the agency for going on 20 years involved in the various aspects of the Factory Assembled Structures program with a detailed background of knowledge and expertise in the food truck industry. As a dedicated public servant, he is committed to ensuring that all food trucks and trailers meet the state's safety regulations and standards, while also assisting entrepreneurs looking to start a food truck business in Washington State navigate the complex regulatory landscape.
Session 8: Lakewood Resuscitating a LHJ School Program	Chelan-Douglas Health District's experience building out a School Program after 30 years of dormancy.

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Session	Abstracts and speaker biographies or description
Session 8: Ruston Toxic Algae Outbreak Investigation on the Columbia River in Tri-Cities, WA	Toxic algae blooms are becoming more common in freshwater ecosystems, like rivers, lakes, and ponds. The Tri-Cities area saw their first instance of harmful algal blooms on the Columbia River in 2021. Following reports of several dogs dying after recreating in the Columbia, the Benton-Franklin Health District underwent water sampling efforts that lead to the detection of anatoxin off the shoreline. The detection of algal toxins in the river questioned a long-held belief that algae blooms are only likely to occur in the stagnant waters of ponds and lakes. The detections were also a concern for the local cities' that use the Columbia River as their primary water source, as the three cities and their consecutive systems serve a combined population of roughly 225,000 people. The presentation will provide an overview of the initial investigation, follow up testing performed in 2022, and the sampling program that developed as a result of the detections. **Jim Coleman** has had a 35-year career in environmental science, molecular biology, toxicology, and science education. He has been a staff member at Benton-Franklin Health District since 2007 and is currently the Climate Change Specialist.
Session 9: Old Town Transient Accommodations: What's in your hotel room?	A summary of Transient Accommodations program duties, inspections, and regulations, all with accompanying photos. **Doug Hartfield** has been with the Lodging program at DOH since July 2018, after working with Texas DSHS inspecting food establishments, pools, spas, hotels, youth camps, mass gatherings, and other facilities.
Session 9: New Tacoma FDA Program Standards & you: A collaborative approach to program improvement	Slow and steady wins the race. This session will untangle the FDA Retail Program Standards web and help attendees better understand how to apply the quality improvement methods to work toward their program priorities even with time and capacity constraints. The presentation will also a kick off a statewide workgroup to help food safety program staff work toward program goals, which will simultaneously help meet FDA's Retail Program Standards. **Susan Shelton** is a public health advisor with the Washington State Department of Health Food Safety Program. She has been in public health at the state and local level since 2000 and worked as an educator, inspector, and program supervisor. She is currently technical lead for retail program standards, produce safety, multi-location consistency, and the state food service rule revision and interpretation. Susan has a Bachelor of Science in Biology from Eastern Washington University. **David Engelskirchen** is the FDA Retail Food Specialist based in Tacoma, WA. He works as the FDA Specialist for State, Local, Tribal and Territorial (SLTT)T Retail Food Safety agencies in WA, NV, and the Pacific Island territories of Guam, CNMI and American Samoa. He currently serves as an FDA Advisor on several Conference for Food Protection Program Standards Committees. Prior to employment with FDA, served in the US Army Veterinary Services as a Food Inspection Specialist and Sr Food Safety Officer from January 1978-July 2014. He is a NEHA Certified Professional-Food Safety and has two BS degrees. One in Vocational Education from Southern Illinois University and another in Food Science from the University of Wisconsin. He also has an MA degree in Education from Central Michigan University.

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Session	Abstracts and speaker biographies or description
Session 9: Lakewood School Environmental Health & Safety Program expansion: Lessons from year 1 in science & laboratories	The Benton-Franklin Health District School Environmental Health & Safety Program oversees 103 public and private K-12 schools in a bi-county area of approximately 300,000 residents. Their longstanding School Safety services were expanded in 2021 to include routine inspections. The program began routine inspections during the 2022-2023 school year with a single focus on science laboratories and chemical stockrooms. BFHD School EH&S staff will be presenting on two projects conducted as a complement to the science room inspections—a dangerous waste disposal survey, and a project undertaken to collect and classify chemical inventory lists for secondary schools within their jurisdiction. While still underway, the 2022-2023 science room inspections have yielded good insight into common risks in secondary school science rooms and laboratories. Data and details of inspection findings will be shared, as well as images collected throughout the year. **Erin Hockaday** has a background in Biology and has been with the Benton-Franklin Health District for 17 years. She worked in the Environmental Health Food Safety program for 14 years before transitioning to managing the COVID-19 Emergency Response and Program. In 2021, Erin managed the startup of BFHD's first School Environmental Health & Safety Program. She is currently a Director over several Environmental Health Programs, including the School EH&S Program. **Lauren Lien** is an Environmental Health Specialist at the Benton-Franklin Health District. After studying Cell & Molecular Biology at Tulane University, she moved into public health. She has been working in the School Environmental Health & Safety program since its official launch in 2022 and is currently the primary inspector for 103 public and private schools. In preparation for the 2022-2023 school year, Lauren gained her CPSI (Certified Playground Safety Inspector) certification and organized a comprehensive project to collect and classify secondary schools' chemical inventory lists. For the upcoming school year, Lauren will be using her experience gained through the CPSI certification to prepare area schools for comprehensive playground inspections.
Session 9: Ruston Uses of environmental data for public health actions on freshwater harmful algal blooms in Washington	Freshwater harmful algal blooms in Washington lakes and rivers are an increasingly frequent occurrence affecting humans, pets and wildlife. Environmental factors such as temperature and rainfall play an important role in influencing water quality dynamics and increase or decrease the probability of bloom events. With a rapidly changing climate and more intense weather events (heat dome events, atmospheric rivers, etc.) improving access to weather and environmental data is key for public health practitioners to anticipate, identify and characterize bloom events in a timely manner. This allows implementation of public health actions such as targeted communication to help prevent or reduce exposures, and risk to human and animal health. This work presents two case studies showcasing collaboration across multiple state and local stakeholders in developing new uses of data for HAB risk assessment in WA state. One describes ongoing efforts at identifying and characterizing the emergence of a suspected benthic algae-related cyanotoxin event using a variety of water quality parameters in the Columbia River in Eastern Washington. This multiyear event represents the first detection of cyanotoxins in a public water system source of supply. This case study will illustrate partnership and coordination across multiple stakeholders to monitor for toxin risks to drinking water sources and recreational waters in the region and how such surveillance can provide information for actionable information to reduce public health harms. The second case study documents the efforts to develop coordination and technical support to a local health jurisdiction in their efforts to mitigate public health risks from persistent toxic algal blooms in a small lake in Western Washington. (Continued on next page.)

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Session	Abstracts and speaker biographies or description
Session 9: Ruston (Continued)	Results from this effort work will help public health practitioners manage risks associated with HAB events. These case studies highlight the benefits of using novel data sources to inform early warning systems that can prevent harms from emerging climate-sensitive threats. **Gopal Mulukutla** is an environmental scientist specializing hydrology and water quality. He is DOH's coordinator for harmful algal bloom issues. **Marnie Boardman MPH** is DOH's Climate and Health coordinator. She works within the Climate and Health Team at the Office of Environmental Public Health Sciences. Her work involves coordinating with state, local and federal partners in the area of climate sensitive hazards, including wildfire and heat risk, flooding, air and water quality issues. **Nancy Feagin P.E,** is a registered professional environmental engineer within DOH Office of Drinking Water's Engineering and Technical Services team **Steve Deem P.E,** is a professional environmental engineer within DOH Office of Drinking Water's Engineering and Technical Services team,
Field trip Environmental Learning Center	End your AEC experience by visiting a school in a zoo! Bring your box lunch to eat on the way or after the visit and spend a few hours exploring Point Defiance Park before you drive back home. The ELC was built in 2017 to complement the Science and Math Institute (SAMI) located adjacent to Point Defiance Zoo. Students are able to focus on science and math and choose a pathway of natural sciences or physical sciences. We will visit science rooms and a fabricating/prototyping room. During the site visit, we will be looking at environmental health and safety items. We will be looking at things like lighting, sound and ventilation. We will be demonstrating testing emergency eyewash stations. We will peek in cabinets and storage areas to point out proper storage, labeling and age appropriateness of chemicals. We will also hear from students about their work with a water treatment infiltration system at Point Defiance Park, which you can drive by on your way home. Park in zoo parking and then walk over to the ELC, located to the left.
Field trip WOSSA/ Stormwater Center	Wrap up your AEC experience by visiting two innovative education and research facilities! Join us at the Puyallup WSU Research and Extension Center to tour Washington Stormwater Center and WOSSA. Tour the country's largest stormwater research center. Washington Stormwater's mission is to provide stormwater management solutions and leadership through research, training and education. The center provides a gateway to research and information about new, innovative and emerging technologies. Join us and learn about the effects of stormwater on the ecosystem and alternates to traditional methods of stormwater management. Washington State has approximately 1.5 million onsite wastewater systems in use. Founded in 1990, WOSSA hosts a network of septic industry and experts, and offers education and advocacy. The training center offers online and in-person courses, including on-site designers and inspector's exam review. You'll have a chance to explore the onsite training grounds. Both are located a short walk from each other at Washington State University, Puyallup Research and Extension Center (2606 W Pioneer, Building 1045 Puyallup, WA 98371) 9.3 miles from Hotel Murano. Sign up at the registration desk.

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See you next year

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