

Yakima Convention Center - Yakima, Washington May 6-8, 2019

Washington State
Environmental Health Association

67th
Annual
Educational
Conference

Environmental Public Health

The **FOUNDATION**

—To a Healthy Community—

www.wseha.org



2019 Conference Program

Sustaining Members



yakimacounty.us/275/Health-District



granthealth.org



friendlywater.net



ssc-inc.com



wrrra.org



nsf.org

Thank You!

To our exhibitors for joining us!



HEALTH SPACE

healthspace.com
jwillmott@healthspace.com
866-860-4224 x 2000



craft3.org/cleanwater
cleanwater@craft3.org
888-231-2170 x 125



PARTICLES
PLUS

particlesplus.com
jim.akey@particlesplus.com
781-341-6898



friendlywater.net
david@friendlywater.net
360-918-3642



doh.wa.gov
360-236-3358



DEPARTMENT OF ENVIRONMENTAL
& OCCUPATIONAL HEALTH SCIENCES

UNIVERSITY of WASHINGTON
School of Public Health

deohs.washington.edu
ehadmin@uw.edu
206-543-6991



NSF International

nsf.org
ddeland@nsf.org
734-769-8010



feelgoodinc.org
407-986-3351
hannah@feelgoodinc.org

Make sure to visit them during the conference!



On behalf of the Washington State Environmental Health Association, welcome to the 67th Annual Education Conference. This year's theme, "Environmental Public Health: The foundation to a healthy community" brings us to the core of our work and is well represented in the robust selection of session topics. As you attend presentations, view posters and network, I'm confident you'll find your time here valuable.

While I still consider myself new to environmental health, this will be my third AEC. Each year I look forward to learning something new, putting more faces to email addresses and supporting environmental public health professionals across Washington.

As I wrap up my second year chairing the conference, I am confidently handing the reins to Jamie Zorich from Tacoma-Pierce County Health Department who will chair the 2020 AEC. Jamie has already proven to be a huge asset along with the army of fantastic volunteers. **A huge THANK YOU to each one of the committee volunteers.** Without your hard work and commitment, this conference would not be possible.

If we haven't met already, I'm hoping we will during a break or at one of the social events. If we have met, I can't wait to catch up! Please take time to fill out the conference evaluation. Your thoughtful feedback will help us know what worked well, and what could be improved. And, if you'd like to be a part of planning next year's AEC, please let us know. Enjoy the conference!

Liz Coleman



The Annual Educational Conference is one of the most important function of the Washington State Environmental Health Association (WSEHA). As we welcome you to this event, I thought it would be good to share some of the objectives of WSEHA and remind everyone there is a code we have pledged. The Objectives and Code can be found in the “Constitution & Bylaws” posted on our WSEHA web site under the “About” heading.

I hope this conference will provided many opportunities to learn new things and to socialize with other workers in your field. You should be able to drill down into subjects of interest to satisfy your inner nerd, while also having the freedom to browse other facets of this profession. Keep in mind we are here to **develop cooperation, increase knowledge and efficiency, and to promote high standards.** Environmental Health Specialists need to continually grow as professionals to stay happy and relevant. There are always grey areas in our work, so we need to continually search for truths and disseminate findings (science). We must also remember our obligation to protect the fundamental right to the highest attainable standard of health (politics or art). Therefore, while you’re here, remember we have an **“obligation to the sciences and arts for the advancement of public health.”**

Our conference planning committee is already looking for a location in Western Washington in 2020. In order to grow our organization, we would like to find out what part of this conference you liked the best, and what road blocks may keep people from attending these events in the future. Please think about this as you attend the conference and let us know in the evaluation at the end. For example, if the conference was not relevant to your particular work, we need to know, because there are probably other people with the same need.

I want to thank everyone that brought this conference together. It takes a lot of work to provide four sessions simultaneously for over 200 people. If you have not been part of this organization, please consider participating next year.

May 6

Conference Agenda ~ Day 1

7:30 – 8:00	Check-in for RS Exam, exam to begin promptly at 8 am	Porter
9:30 – 4:30	School Plan Review Workshop	Amber
11:00 – 11:30	Registration	Pilsner
11:30 – 12:45	Lunch Welcome comments	Pilsner
12:45 – 1:00	Break	

Time	Track A <i>Merlot Room</i>	Track B <i>Stout Room</i>	Track C <i>Riesling Room</i>	Track D <i>Amber Room</i>
1:00 – 1:50 SESSION 1	Challenges and Successes of an O&M Program Corrina Marote <i>Skagit County Public Health</i>	Horseshoe Lake Norovirus Outbreak Response Grant Holdcroft & Jessica Guidry <i>Kitsap Public Health District</i>	Apple Maggot Quarantine: Keeping Washington's Waste Moving Kimbelly (Sarver) Grieves <i>Ecology</i>	School Plan Review Workshop <i>(continued)</i> Nancy Bernard <i>DOH</i>
2:00 – 2:50 SESSION 2	Survey of On-site Sewage System Industry Professionals: Building Partnerships as a Foundation to Healthy Communities Meagan Jackson & Lynn Schneider <i>Public Health - Seattle & King County</i>	Anderson Lake - Very Fast Death Factor Tim Weissman <i>Jefferson County Environmental Public Health</i>	Secure Medicine Return Jennifer Hayden, Britt Pfaff-Dunton, Troy Rowan, & Carly Bartz-Overman <i>Whatcom County Health Department</i>	

2:50 - 3:10

Break & Networking

Day One continued on next page

Time	Track A <i>Merlot Room</i>	Track B <i>Stout Room</i>	Track C <i>Riesling Room</i>	Track D <i>Amber Room</i>
3:10 – 4:00 SESSION 3	<p>Improving Community Resilience, Water Quality, and Public Health Through a Collaborative OSS Loan Program</p> <p>Seth Elsen <i>Ecology</i></p>	<p>Decentralized Nonpotable Water Reuse Systems</p> <p>Jeremy Simmons <i>DOH</i></p>	<p>Implementation and Impacts of the New Solid Waste Handling Standards</p> <p>Dawn Marie Maurer <i>Ecology</i></p>	<p>School Plan Review Workshop <i>(continued)</i></p> <p>Nancy Bernard <i>DOH</i></p>
4:10 – 5:00 SESSION 4	<p>Locating Illicit Discharges by Using Coliscan® Easygels® and qPCR</p> <p>Jeanne Dorn or Edward McFarlin & Cameron Chapman <i>King County Dept. of Natural Resources & Parks</i></p>	<p>Whipple Creek Watershed Microbial Identification and Source Tracking Pilot Project</p> <p>Marlee Milosevich <i>Clark County Public Works Clean Water Program</i></p>	<p>Effects of China's Blue Sky Initiative on Washington Recycling Systems</p> <p>Heather Church & Dawn Marie Maurer <i>Ecology</i></p>	

5:00 - 7:00
Poster Session & Opening Reception ~ Pilsner



7:00 – 8:00	Registration & Breakfast	Pilsner
	WSBRS Board Meeting	Porter
8:00 – 9:45	Opening Remarks National Environmental Health Association Update Matthew Reighter, <i>Starbucks Coffee Company</i> Plenary: Outlooks, approaches and partners for improving environmental public health readiness in a climate shifting Washington Dr. Nicholas Bond, <i>University of Washington</i> & Jeff Marti, <i>Ecology - Moderator: Marnie Boardman</i>	Pilsner

9:45 – 10:00 Break

Time	Track A <i>Merlot Room</i>	Track B <i>Stout Room</i>	Track C <i>Riesling Room</i>	Track D <i>Amber Room</i>
10:00 – 10:50 SESSION 5	Electronic Report of System Status (eROSS) Bret Pickett <i>Whatcom County Health Department</i>	Using MST for Detecting Septic System Contamination of Lakes and Quantifying Multiple Fecal Sources of Shellfish Harvesting Closures in Puget Sound Rob Zisette <i>Herrera Environmental Consultants</i>	FDA Report on the Occurrence of Foodborne Illness Risk Factors in Fast Food and Full Service Restaurants, 2013 - 2014 David Engelskirchen <i>Food & Drug Administration</i>	Wildlife Smoke Impacts Advisory Group Holly Myers <i>Yakima Health District</i>
11:00 – 11:50 SESSION 6	The Point of Nonpoint Pollution Prevention- Partnering with Ecology Staff to Solve Nonpoint Pollution Problems Jennifer Riedmayer, Shawn Ultican, & Ruth Piccone <i>Ecology</i>	Shelton WWTP Dye and Microbial Study, Part 2 Mark Toy <i>DOH</i>	2018 Foodborne Outbreaks and Lessons Learned Janet Anderberg <i>DOH</i>	Wildfire Smoke Impacts Workgroup Updates: Guidance on Air Sensors and Closure Decisions Julie Fox & Nancy Bernard <i>DOH</i>

Day Two continued on next page

12:00 – 1:00	Lunch and awards Clark Halvorson, Assistant Secretary, Division of Environmental Public Health, <i>DOH</i>				Pilsner
1:00 – 1:45	Plenary Hydro-philanthropy and Climate Change- The Evolving Face of Water Charity in Tanzania, Ginny Stern				Pilsner
Time	Track A <i>Merlot Room</i>	Track B <i>Stout Room</i>	Track C <i>Riesling Room</i>	Track D <i>Amber Room</i>	
2:00 – 2:50	<p>Kitsap Health’s PIC Program: Lessons Learned After 20 Years</p> <p>Grant Holdcroft <i>Kitsap Public Health District</i></p> <p>Building Programmatic Capacity for State Oversight of PIC Programs</p> <p>Henry Peterson <i>DOH</i></p>	<p>Implementation of ESSB 6091 After the Hirst Decision</p> <p>Dave Christensen <i>Ecology</i></p>	<p>Preventing Foodborne Illness Globally: One Cup of Coffee at a Time</p> <p>Matthew Reighter & Rita Bartz-Warner <i>Starbucks Coffee Company</i></p>	<p>Evaluation of Wildfire Smoke Mortality in Washington State from 2006-2017</p> <p>Julie Fox & Annie Doubleday <i>DOH</i></p>	<p>SESSION 7</p>
3:00 – 3:50	<p>Skagit County’s Secrets to Building a Successful and Empowered PIC Team</p> <p>Karen DuBose <i>Skagit County</i></p> <p>Adopting a PIC Program that Doesn’t Fit a Template</p> <p>Erika Douglas <i>Whatcom County Public Works</i></p>	<p>WA Surface Water Quality Standards Updates for the Protection of Public Health</p> <p>Chad Brown & Bryson Finch <i>Ecology</i></p>	<p>Proposed Changes to WAC 246-215 Retail Food Service</p> <p>Susan Shelton <i>DOH</i></p> <p>Retail Food Safety Program Standards Update</p> <p>Helena Barton <i>DOH</i></p>	<p>Is EHS Ready to be a part of Emergency Management?</p> <p>Matthew P. Bernard <i>FEMA Region 10</i></p>	

Time	Track A <i>Merlot Room</i>	Track B <i>Stout Room</i>	Track C <i>Riesling Room</i>	Track D <i>Amber Room</i>
4:00 – 4:50	<p><i>Continued from Session 8</i></p> <p>Adopting a PIC Program that Doesn't Fit a Template</p> <p>Erika Douglas <i>Whatcom County Public Works</i></p> <p>Improving Water Quality Across Borders</p> <p>Andrea Hood <i>DOH</i></p>	<p>The \$94.6 Million Question: "What Do We Do Tomorrow?"- The Tacoma Smelter Plume and Health Issues that Stay with Us in the Future</p> <p>Gregory M. Tanbara <i>Tacoma-Pierce County Health Department</i></p>	<p>Hemp, CBD, & Approval of the Food Additives: Turning the Gray to Black and White</p> <p>Susan Shelton <i>DOH</i></p>	<p>Providing Safety, Shelter & Sustainability</p> <p>Jan Hanson <i>200 Orphanages Worldwide</i></p>

SESSION 9

For information about the different social events and activities going on throughout the conference, please visit:

<https://www.wseha.org/yakima-social-events>



yakimacounty.us/275/Health-District

7:00 – 8:00	Registration & Breakfast	Pilsner
	WSEHA Membership Meeting	Porter
8:00 – 9:00	Opening Remarks Change of WSEHA President Keynote: Dr. Hilary Godwin, <i>University of Washington</i>	Pilsner

Time	Track A <i>Merlot Room</i>	Track B <i>Stout Room</i>	Track C <i>Riesling Room</i>	Track D <i>Amber Room</i>
9:10 – 10:00 SESSION 10	<p>Wicked Strategy for a Gnarly Issue- Tacoma-Pierce County's Strategy for Calling for New Approaches to Health Equity</p> <p>Gregory M. Tanbara <i>Ecology</i></p>	<p>Updating State Board of Health Rules on Animal Waste</p> <p>Stuart Glasoe <i>State Board of Health</i></p> <p>Andrea Hood <i>DOH</i></p>	<p>Food Donation from a Regulatory Perspective</p> <p>Emily Hovis <i>DOH</i></p>	<p>LWHMP Residential Services Program Approaches to Reducing Residential Toxic Exposures</p> <p>Mohamed Ali & Bab Badru <i>Public Health-Seattle & King County</i></p>
10:10–11:00 SESSION 11	<p>Mapping Environmental Health Disparities in Washington State Communities</p> <p>Lauren Frelander & Tina Echeverria <i>DOH</i></p>	<p>Epidemiology of Tick-borne Pathogens in Washington State</p> <p>Elizabeth Dykstra, Tracee Mayfield, & Charles Wu <i>DOH</i></p>	<p>Improving Public Food Safety: Using Big Data and AI to Connect Restaurant Operators with Health Departments</p> <p>Arash Nasibi <i>Hazel Analytics</i></p>	<p>Chemical Hazard Assessments, Safer Ingredients, and Alternative Assessments: Three Tools for Reducing Toxins in Our Lives</p> <p>Craig Manahan <i>Ecology</i></p>



WASHINGTON
REFUSE &
RECYCLING
ASSOCIATION

wrra.org

Time	Track A <i>Merlot Room</i>	Track B <i>Stout Room</i>	Track C <i>Riesling Room</i>	Track D <i>Amber Room</i>
11:10-12:00	<p>Syringe Exchange Programs: Lessons from the Yakima Health District</p> <p>Emily Contreras & Melissa Sixberry <i>Yakima Health District</i></p>	<p>When Sewer Rats Come to the Surface: A Closer Look at Seattle's Rodent Program</p> <p>Leah Helms <i>Public Health-Seattle & King County</i></p>	<p>Evaluating Lifeguard Supervision</p> <p>David DeLong <i>YMCA of Pierce & Kitsap Counties</i></p>	<p>Lead in Drinking Water in Schools</p> <p>Anne Marie Charles & Derrick Dennis <i>DOH</i></p>

SESSION
13

12:00

Lunch & Closing Remarks

You'll receive an Evaluation Form via email soon. We appreciate you taking the time to tell us what we did right and how we can improve!

Thank you for coming and hope to see you next year!



NSF International

nsf.org



HEALTH SPACE

healthspace.com

jwillmott@healthspace.com

866-860-4224 x 2000

PLENARY & KEYNOTE SESSIONS

Tuesday morning

Outlooks, Approaches, and Partners for improving environmental health readiness in a climate shifting Washington

Nick Bond is a principal research scientist with the Joint Institute for the Study of the Atmosphere and Ocean (JISAO) at the University of Washington. He is the climatologist for the state of Washington. He has a PhD in Atmospheric Sciences from the University of Washington. He is particularly interested in the effects of climate variations and change on Washington state.

Jeff Marti is a water resources planner and drought coordinator for the Washington Department of Ecology. He co-authored the recently updated Washington State Drought Contingency Plan and leads the state Water Supply Availability Committee, which monitors water supply and drought conditions across the state. He has a B.S. from Iowa State University and a Masters in Environmental Studies from The Evergreen State College.

Tuesday

1:00 p.m. - 1:45 p.m.

Hydro-philanthropy and Climate Change – the evolving face of water charity in Tanzania

Friendly Water for the World started in 2010, with a simple mission: provide access to low cost, sustainable clean water technology to communities need. We “did” filters: easy to construct, low maintenance, durable, and inexpensive. We provided materials, tools, training and support to rural and high risk communities that needed reliably safe drinking water.

Friendly Water has worked with communities in over 14 countries on 4 continents. Our focus is still safe drinking water, but safe is

no longer enough. Many of the communities we work with need safe & reliable water supplies. Climate change is impacting the developing world. No where is this more evident than in Tanzania, where deforestation, changing rainfall patterns, and population shifts impact access to water. This presentation highlights Friendly Water's work with high risk communities in Tanzania to meet their need for clean and sustainable drinking water.

Ginny Stern is a licensed hydrogeologist. She retired from the State of Washington where she worked with the Departments of Health and Ecology for 28 years on drinking water, groundwater, and water supply issues. She was a researcher with the National Park Service in the Everglades, and a hydrologist on the Gifford Pinchot National Forest. She has a Bachelor's from Western Washington University and a Master's from The Evergreen State College. Ginny has been traveling and volunteering in Tanzania since 2005. She has been a volunteer board member with Friendly Water for the World since it was formed in 2010.

Wednesday

8:00 a.m. – 9:00 a.m.

Hilary Arnold Godwin is dean of the UW School of Public Health and professor in the Department of Environmental & Occupational Health Sciences. She has 15 years of experience as an academic leader with expertise in interdisciplinary, collaborative research on nanotoxicology and the chemistry of lead poisoning and its impact on public health. She is trained in chemistry and biophysics, and has supervised research programs in mechanistic toxicology and environmental health for more than 20 years. Dean Godwin previously served as associate dean for academic programs as well as chair of environmental health sciences for the Fielding School of Public Health at the University of California, Los Angeles. She also

CONFERENCE SESSIONS

Session 1A

Challenges and Successes of an O&M Program

Skagit County Public Health O&M began around 2000 based on DOH water quality surveys in Similk Bay commercial shellfish harvest area. Then over 4,000 acres of commercial shellfish harvest areas in Samish Bay were severely impacted by poor water quality coming from the watershed. The O&M program established MRAs to address issues in 12 sensitive areas. During the economic slow-down, staffing levels declined, which required a shift in the programmatic approach to achieve a higher level of compliance throughout a larger area to reverse water quality trends. Successes include: inspection reminder and failure enforcement procedures are relatively smooth, compliance rate in the MRAs is about 87%, water quality trends have shown improvement. Challenges: staff time to develop mailings, address property owner concerns and questions, including those on fixed incomes, water quality surprises, establishing a new social norm of inspections, the finite number of certified O&M providers.

Prior to working for Skagit County Public Health in 2005, **Corrina** grew up down-river near Skagit Bay, graduated from Mt. Vernon High School then Western Washington University, explored parts of the US and Canada working for the National Park Service, then went to graduate school at UCLA before returning home to Skagit County.

Email: corrinam@co.skagit.wa.us

Session 1B

Horseshoe Lake Norovirus Outbreak Response

In early August of 2018 the Kitsap Public Health District responded to reports of illness in persons swimming at Horseshoe Lake in south Kitsap County. Investigation and followup interviews caused the Health District to close the swimming beach and the park. Kitsap Public Health District Incident Command was stood up to manage the phone calls, interviews, public and medical messaging, and decision making. How Kitsap Public Health responded during the incident ultimately reduced the number of illnesses. An overview of the incident and lessons learned.

Grant Holdcroft, RS, is currently Water Pollution Identification & Correction Program Manager at the Kitsap Public Health District. Grant has 25 years working as an Environmental Health Specialist and Registered Sanitarian. Grant has worked in water quality, onsite sewage, and solid & hazardous waste at Kitsap and Mason Counties.

Email: grant.holdcroft@kitsappublichealth.org

Jessica Guidry, MPH, CHES is the Public Health Emergency Preparedness and Response Program Manager and Performance Manager at the Kitsap Public Health District. Jessica has worked at the Health District for almost 11 years and has experience with developing and implementing emergency plans, trainings, exercises, partnerships, and response activities. Jessica provides emergency preparedness technical assistance and other support to Clallam and Jefferson County public health departments and participates in various local, regional, and state committees.

Email: jessica.guidry@kitsappublichealth.org

Session 1C

Apple Maggot Quarantine: Keeping Washington's Waste Moving

Our yards are filled with leaves, branches and other organics. We were told that burn piles damage our air, so we found a solution. Now hundreds of thousands of dollars are invested in composting facilities across Washington State. Feed stocks were secured, pads poured, equipment purchased. We tweaked our operations, our tests, our moisture content. Things seemed to be going well, until the phone rang. Suddenly our feed stocks, particularly carbon sources, were cut off. The culprit? The Apple Maggot. Join us to learn about an emerging problem and how we keep Washington's waste moving.

Kimberly (Sarver) Grieves is a facilities specialist in the Solid Waste Management Program at Ecology. She assists local governments and solid waste facilities navigate regulations while finding creative solutions for local solid waste issues. She has several years of experience with local and state environmental health agencies.

CONFERENCE SESSIONS

She received a Bachelor of Science from Oregon State University in Bioresources Research with a focus on genetics, chemistry and toxicology.

Email: kimberly.sarver@ecy.wa.gov

Sessions 1D-4D

School Workshop

I will go over the basics of what we do in the schools during a routine inspection, including numerous photos and some specific experiences over the last year (UV lights installed in wrestling area causing burns, PCBs in light fixtures). The presentation will show the wide range of issues we look at in the schools and will encourage other LHJs to adopt a routine inspection program.

Nancy Bernard manages the DOH 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, 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. She has a M.P.H. in Environmental Health Sciences from Tulane University, a B.S. in Environmental Health and a B.A. in Health Education from the University of Washington.

Email: nancy.bernard@doh.wa.gov

Joe Laxson: As the Environmental Public Health Policy Director at the Washington State Department of Health; Joe Laxson supports three main functions of the Division of Environmental Public Health: Policy, Legislation, and Rule Making. Prior to joining Department of Health in 2018, he worked for 11 years for local public health (Island County and Clark County) in programs such as onsite sewage, food safety, water recreation, and swim beach monitoring. Joe holds a Bachelors in Community Health Education from Portland State University and a Masters of Public Administration from the University of Washington. He lives in Olympia, WA with his spouse Rachael, two sons Silas and Caleb,

and a yellow English Labrador named Daisy.

Email: joe.laxson@doh.wa.gov

Jim Zimny is the Assistant Environmental Health Director at the Kitsap Public Health District. Jim began working for the Kitsap Public Health District in 1991 working in the onsite sewage, drinking water, PIC/water quality/shellfish, and the food and living environment programs. He spends his free time on the water or in the woods exploring the beautiful Northwest (especially when golfing).

Email: jim.zimny@kitsappublichealth.org

Amanda Zych has her BS degree in Environmental Health from Salisbury University in Maryland and her Masters from University of Washington, also in Environmental Health. She has been employed at Snohomish Health District for 15 years working on West Nile virus surveillance, water recreation safety, shellfish monitoring and school health and safety. When Amanda is not working in Public Health, she is selling vintage clothing online and raising her 11 year-old daughter.

Email: azych@snohd.org

Session 2A

Survey of On-site Sewage System Industry Professionals: Building Partnerships as a Foundation to Healthy Communities

Public Health – Seattle & King County (PHSKC) conducted an online survey and focus groups to learn from 38 on-site sewage system (OSS) industry professionals about barriers to OSS operation and maintenance (O&M) and recommended improvements to the O&M program. Participants emphasized that O&M is essential in preventing OSS failures and providing holistic public health services, which protect homeowners from both health and financial risks. They recommended that PHSKC improve OSS maintenance by increasing education and outreach efforts while implementing better maintenance reminders and enforcement. Participants shared that the foundation to providing these services is building strong partnerships between the local health jurisdiction, the OSS industry, the real estate industry, and property

CONFERENCE SESSIONS

owners. OSS maintenance is a key example of the importance of engaging stakeholders and developing partnerships to facilitate the effective expansion of environmental health services.

After studying the complexities of small-scale wastewater treatment at Wheaton College, **Meagan** did her University of Washington Master's research studying ultraviolet disinfection units and learned that people's interactions with wastewater treatment systems are even more complicated than the systems themselves. She now works with the On-site Sewage System (OSS) team at Public Health – Seattle & King County (PHSKC), where she is working to expand the operation & maintenance program so that it supports industry professionals in providing quality work and engages homeowners in caring for their OSS and their health.

Email: mejackson@kingcounty.gov

Lynn Schneider grew up on beaches and estuaries in Maine, where her passion for healthy beaches began to grow. She moved west to attend the Evergreen State College. Olympia became her permanent home as her passion for the Puget Sound Estuary blossomed. Keeping it healthy became Lynn's professional focus in 2001 as the manager of the BEACH Program and then in on-site sewage system (OSS) management for the Washington State Health Department. Lynn received a Master's Degree from UW in 2014 in Infrastructure Planning and Management, after which she switched to supervising the King County OSS Program. She enjoys supporting the Puget Sound Estuarium, a non-profit that teaches people about Puget Sound.

Email: lynn.schneider@kingcounty.gov

Adiam Mengis is an Educator Consultant at Environmental Health Services, Public Health Seattle King County. She does community outreach, engagement and partnership with King County's residents, stakeholders, non-governmental and governmental agencies. Her greatest passion is human rights, equity and social justice and strives for everyone to gain access to a quality and healthy environment. While living in 3 continents, Adiam's experiences helped her acquire a strong cross-sector and cross-cultural communication skills with people of diverse backgrounds. Adiam's educational background includes

an L.L.B in Law and a Master of Public Health with focus on Health disparity and Social Justice.

Email: amengis@kingcounty.gov

Session 2B

Anderson Lake – Very Fast Death Factor

Anderson Lake, situated in a State Park in Jefferson County, is a perfect destination for those seeking outdoor recreation such as hiking and fishing. However, ingesting a small amount of lake water could make you sick and ingesting too much could kill you. This lake is plagued with toxic cyanobacteria blooms of *Dolichospermum* (formerly *Anabaena*), primarily during the warm and dry months. The toxin produced from these blooms is the neurotoxin Anatoxin-a, also known as “Very Fast Death Factor,” and has been found, on a yearly basis, to have some of the highest concentrations around Washington State. The historical presence of cyanobacteria in Anderson Lake sediment cores indicates this is a naturally occurring phenomenon that has persisted for decades. In this session we will cover lessons learned from our monitoring and public education efforts, and we will also share some important insights we have gained from managing this toxic lake.

Tim Weissman has been monitoring Anderson Lake and other lowland lakes in eastern Jefferson County with Jefferson County Environmental Public Health for two years. In addition to monitoring lakes, he is also involved in pollution identification and correction work aiming to find and correct bacterial contamination from nonpoint sources in order to maintain healthy shellfish growing areas. Prior to beginning work at Jefferson County, Tim worked as an environmental educator in Ohio, Minnesota, and Washington after earning a degree in biology and marine sciences from Wittenberg University in Springfield, Ohio.

Email: tweissman@co.jefferson.wa.us



craft3.org/cleanwater
cleanwater@craft3.org
888-231-2170 x 125

Session 2C

Secure Medicine Return

Disposal of unused medications poses numerous problems for our communities and environment, and Washington State leads the nation in tackling this issue. Seven counties in Washington State have passed secure medicine return ordinances, and Washington State is the first state in the country to pass a secure medicine return law. Representatives from three counties will speak about the successes and challenges of their local programs, and a representative from the Washington State Department of Health will discuss the state law, including how it will differ from existing programs, and the expected implementation timeline.

Jennifer Hayden is an Environmental Health Specialist with the Whatcom County Health Department's Solid and Hazardous Waste Program, and has 13 years of experience in the environmental field. Jennifer's work has involved managing hazardous waste, permitting and overseeing local solid waste handling facilities, and overseeing implementation of the county's secure medicine return program.

Email: jhayden@whatcomcounty.us

Britt Pfaff-Dunton is the Solid & Hazardous Waste Program Lead at Skagit County Public Health. She has worked in environmental health for over 25 years. Her primary focus has been working at the county level on solid and hazardous waste programs including: program and regulatory development and implementation; permitting and oversight of a wide variety of solid waste handling facilities; participating in county-wide solid waste management planning and implementation; conducting enforcement and technical assistance work with conditionally exempt small quantity generators; and coordinating and assessing remediation work at contaminated sites.

Email: brittp@co.skagit.wa.us

Troy Rowan is an Environmental Health Specialist with the Tacoma-Pierce County Health Department's Solid and Local Hazardous Waste Management Program. Troy has 23 years of experience working in the environmental field. In late 2009, Troy assisted Pierce

County law enforcement in establishing medicine return kiosks. By 2010, twenty collection kiosks were established at local police and sheriff's department stations. These sites have collected over 43,000 pounds of medications from the public. In 2016, Troy worked with a Health Department team to establish the fourth Extended Producer Responsibility rule in Washington State for pharmaceuticals. Implementation began in the Spring of 2018.

Email: trowan@tpchd.org

Carly Bartz-Overman joined the department of health in November of 2018 as the safe medication return program manager. Prior to taking on this role, Carly worked at nonprofit agencies in both Seattle and Yakima in project management, process improvement, and clinical quality assurance roles. Carly has a BA in Sociology and a certificate in Project Management from the University of Washington and is passionate about using her experience to reduce health disparities across Washington State. In her spare time, she spends time with her family, cats, and her unending search for the best bowl of pho.

Email: carly.bartz-overman@doh.wa.gov

Session 3A

Improving Community Resilience, Water Quality, and Public Health through a Collaborative OSS Loan Program

Failing on-site sewage systems pose numerous dangers to human health, water quality, and our aquatic resources. Replacing a failing septic can cost upwards of \$20,000, which many homeowners cannot afford.

To address this growing issue, the state departments of Ecology and Health are partnering with non-profit lender Craft3 and counties across Washington to provide affordable loans to repair or replace failing systems. The loan covers the full project with no upfront costs – from design to installation and ongoing maintenance. With Craft3 administering loans, local health departments can focus on their core duties while referring those in need to the lender.

Nearly three years and over 600 loans into the partnership, a panel of

CONFERENCE SESSIONS

partners from Ecology, Health, Craft3, and local health departments will discuss the statewide need, performance to date, and perspectives on how the program is benefiting their communities, natural resources, and public health.

Seth Elsen is an Environmental Planner with the Washington Department of Ecology, managing projects and programs related to water quality, including the OSS Regional Loan Program. Prior to joining Ecology, Seth spent the last five years managing habitat restoration and salmon recovery projects in the Hood Canal watershed. Originally from Washington, he studied natural resources at the University of Minnesota-Morris and Utah State University.

Email: seth.elsen@ecy.wa.gov

Rick is a 1986 graduate of Central Washington University and has worked as an Environmental Health practitioner since that time. Over the course of the last 30 years his primary focus has been on-site sewage system management. During this time he has spent many years in the field and over two decades managing the wastewater and associated programs for the Benton-Franklin Health District. His current position is as the Senior Manager for Surveillance and Investigation programs still remaining actively involved in the wastewater program directly at the county level.

Email: rickd@bfhd.wa.gov

A life-long Washingtonian, **Randy** has worked as an Environmental Health practitioner spanning four-plus decades. In all his assignments, his primary focus has been wastewater management (on-site sewage systems). For 30-plus years, he worked as an Environmental Health Specialist for 3 different local health jurisdictions, both on the east and west sides of the state. For the last 3-plus years, Randy has worked for the Washington State Department of Health providing support to the LHJs for their on-site sewage programs.

Email: randal.freeby@doh.wa.gov

Grant Holdcroft serves as the Water Pollution Identification & Correction Program Manager at the Kitsap Public Health District. Grant has spent 25 years working as an Environmental Health Specialist

and Registered Sanitarian. Grant has worked in water quality, onsite sewage, and solid & hazardous waste at Kitsap and Mason counties.

Email: grant.holdcroft@kitsappublichealth.org

As a Senior Vice President at Craft3, **Desiree Sideroff** leads the consumer lending business unit where she manages products and programs that improve water quality, energy efficiency, and support local families. Desiree has over fifteen years' of leadership and in the economic & community development field. Her prior work included managing economic development programs in the Bay Area and leading a community and economic development consulting practice in the Pacific Northwest. Desiree holds a Master's degree in Urban Studies and Planning from The Massachusetts Institute of Technology with a Certificate in Urban Design and a dual-degree from the University of California, Berkeley, in Conservation & Resource Studies and Conflict Resolution.

Email: dsideroff@craft3.org

Linda Atkins has worked at Jefferson County Public Health since 1989 as the Onsite Septic Team Lead. She has developed many of the policies Jefferson County uses regarding septic regulation and enforcement.

Email: latkins@co.jefferson.wa.us

Lynn grew up on beaches and estuaries in Maine, where her passion for healthy beaches began to grow. She moved west to attend the Evergreen State College. Olympia became her permanent home as her passion for the Puget Sound Estuary blossomed. Keeping it healthy became Lynn's professional focus in 2001 as the manager of the BEACH Program and then in on-site sewage system (OSS) management for the Washington State Health Department. Lynn received a Master's Degree from UW in 2014 in Infrastructure Planning and Management, after which she switched to supervising the King County OSS Program. She enjoys supporting the Puget Sound Estuarium, a non-profit that teaches people about Puget Sound.

Email: lynn.schneider@kingcounty.gov

CONFERENCE SESSIONS

Session 3B

Decentralized Nonpotable Water Reuse Systems

DOH has received a petition for rule development for a rule governing decentralized nonpotable water reuse systems. There is also a similar legislative proposal this session. A decentralized nonpotable water reuse system reuses water used onsite for nonpotable uses onsite. Flushing toilets with used sink water is a prime example of this type of reuse. Some of these systems are currently allowed via permitting through the Uniform Plumbing Code or the Greywater Rule but there are significant limitations and barriers to these approaches. The new rule will provide a pathway to reuse water at the building (and possibly district) scale with appropriate design, treatment, and operational requirements and ongoing public health oversight.

Jeremy Simmons leads the Wastewater Management section at DOH. He earned a Bachelor's of Environmental Science from the University of Colorado and has several years of experience working on environmental, environmental health, and public health issues with private industry, local health, and state health agencies.

Email: jeremy.simmons@doh.wa.gov

Session 3C

Implementation and Impacts of the New Solid Waste Handling Standards

In 2018, the Department of Ecology completed an update to the Solid Waste Handling Standards for the state. These standards regulate everything from transfer stations and material recovery facilities to on-farm composting and waste storage at businesses. One significant addition to the rule is a new section to help generators and regulators identify whether the material being handled is solid waste. Health departments are now applying this rule and facilities statewide are adapting to these changes. We will discuss major impacts from the rule, actions health departments may need to take, outreach and communication, timelines, and potential pitfalls. Additionally, we will examine opportunities that this updates provides, with time allotted for questions from the audience.

Dawn Marie Maurer has been a soil waste facilities specialist for the State of Washington for the past 13 years. She was one of the lead authors on the recent update to the Solid Waste Handling Standards, WAC 173-350, and works on a number of regional and statewide issues, including composting, anaerobic digestion, material recovery and recycling, inert wastes, and construction and demolition debris management.

Email: dmau461@ecy.wa.gov

Session 4A

Locating Illicit Discharges By Using Coliscan® Easygels® and qPCR

There are some illicit discharges that eyeballs and noses cannot detect. For several years, King County has been using an inexpensive method of measuring *Escherichia coli* to locate illicit discharges entering its stormwater system. The method is called Coliscan® Easygel© (manufactured by Micrology Laboratories of Goshen, Indiana) and gives results comparable to the standard laboratory (membrane filtration) method for measuring *E. coli*. King County has used this method in conjunction with qPCR (a laboratory method for measuring the presence of animal genetic material in water samples) to find failing septic systems, illicit sewer connections and properties where cattle or other domestic animal waste is entering the stormwater system. This presentation will discuss these techniques, their advantages and disadvantages, and will describe specific cases where these techniques have been useful.

Jeanne Dorn, Cameron Chapman and **Edward McFarlin** are water quality planners with King County. Their projects to protect stormwater water quality have relied on various bacterial detection methods. Jeanne is a registered geologist with an environmental investigation and remediation background.

Email: jeanne.dorn@kingcounty.gov

CONFERENCE SESSIONS

Cameron Chapman is a civil engineer with extensive experience in stormwater systems and water quality investigations. Some of his work has successfully led to the finding and fixing of numerous illicit septic system discharges into stormwater systems and into local creeks.

Email: cameron.chapman@kingcounty.gov

Edward is an experienced field and analytical lead in environmental investigations, including noxious weeds, mapping stormwater conveyance systems, and water quality complaints. Edward has recently begun coordinating and implementing the field and analytical portion of an interagency effort focused on finding sources of excessive bacteria impacting a closed commercial shellfish harvesting area within a city inside King County.

Email: edward.mcfarlin@kingcounty.gov

Session 4B

Whipple Creek Watershed Microbial Identification and Source Tracking Pilot Project

Clark County is using microbial source tracking to identify sources of bacteria in the Whipple Creek watershed. Whipple Creek has a history of elevated bacteria levels which exceed Washington State fecal coliform standards. Clark County has monitored Whipple Creek during base and storm flow for fecal coliform and performed summer headwater and tributary screening. Consistent fecal coliform patterns suggest sources such as failing septic systems, wildlife, pets or livestock. Septic system condition was evaluated throughout the watershed using Clark County Public Health data sets. Land use analysis was performed to select bacterial markers for testing. Five sites were selected to collect three dry and three wet season samples sent for bacterial marker identification using qPCR. These data, with optical brightener measurements, conventional water quality analyses, Fecal Coliform, and E. coli. results may be a starting point to trace and eliminate specific non-point bacterial sources.

Marlena Milosevich, Natural Resource Specialist III, Clark County Public Works Clean Water Program.

Additional staff involved with project include: Chad Hoxeng, Bob Hutton, and Ben Joner

Email: marlena.milosevich@clark.wa.gov

A life-long Washingtonian, **Randy** has worked as an Environmental Health practitioner spanning four-plus decades. In all his assignments, his primary focus has been wastewater management (on-site sewage systems). For 30-plus years, he worked as an Environmental Health Specialist for 3 different local health jurisdictions, both on the east and west sides of the state. For the last 3-plus years, Randy has worked for the Washington State Department of Health providing support to the LHJs for their on-site sewage programs.

Email: randal.freeby@doh.wa.gov

Grant Holdcroft serves as the Water Pollution Identification & Correction Program Manager at the Kitsap Public Health District. Grant has spent 25 years working as an Environmental Health Specialist and Registered Sanitarian. Grant has worked in water quality, onsite sewage, and solid & hazardous waste at Kitsap and Mason counties.

Email: grant.holdcroft@kitsappublichealth.org

Session 4C

Effects of China's Blue Sky Initiative on Washington Recycling Systems

Washington Recycling Systems are experiencing harsh growing pains as the impacts of China's Blue Sky Initiative are being fully realized. Material Recovery Facilities (MRFs) throughout the state are finding a surplus of recyclable materials in their intake streams, but struggle to move these processed materials due to limited domestic markets. As a result, issues of stockpiling, sham recycling, and landfilling of these materials are becoming an increasing concern. In this 45 minute presentation I will touch on permitting compliance violations, material contamination issues, and improper disposal and why local Health Departments should be aware of these challenges.

Heather Church is the Eastern Washington Recycling Specialist for

CONFERENCE SESSIONS

the Washington State Department of Ecology. In this role, she provides local municipalities and the waste management industry with technical assistance to build and enhance waste reduction, reuse, and recycling programs throughout Central and Eastern Washington..

Email: heather.church@ecy.wa.gov

Dawn Marie Maurer is the Northwest Region Solid Waste Facilities Specialist for the Department of Ecology

Email: dawn.maurer@ecy.wa.gov

Session 5A

Electronic Report of System Status (eROSS)

Whatcom County continues to move into the 21st century with an overhaul of how we handle incoming septic system reports from licensed septic professionals by creating an Electronic Report of System Status (eROSS). Before the implementation of this program, every Report of System Status (ROSS) was submitted on paper over the front counter. This process added a tremendous amount of additional administrative work for clerical staff by completing an initial review, scanning, uploading and filing these reports. With the implementation of eROSS, each report is initially reviewed by an environmental health specialist. The reports then can be uploaded and available to the public instantly with just a couple of clicks. This change took a process that used to take at times weeks to see the report online to be available that same day. Not only has this created a more efficient form of reporting to the public but to our licensed specialists who can now submit a report from their phone in the field.

Bret Pickett is an Environmental Health Specialist (EHS) working for Whatcom County since August 2017. Before this, he worked as an (EHS) for Maricopa County in Phoenix Arizona reviewing septic designs and conducting swimming pool inspections. While getting a Public Health degree from Brigham Young University Idaho, he worked for a local septic company introducing him to the world of on-site sewage systems.

Email: bpickett@co.whatcom.wa.us

Session 5B

Using MST for detecting septic system contamination of lakes and quantifying multiple fecal sources of shellfish harvesting closures in Puget Sound

A simple microbial source tracking (MST) method was developed for two Washington lakes (Lake Whatcom and Lake Tapps) using optical brightener fluorescence and qPCR analysis of Bacteroidetes DNA biomarkers. Hot spots were successfully identified at multiple locations along the shoreline with an optical brightener meter having a low detection limit (0.6 ug/L). High concentrations human biomarkers at the hot spots were used to locate significant septic system inputs for inspection by health departments.

Rob is an aquatic science principal at Herrera Environmental Consultants in Seattle. He has over 30 years of experience conducting water quality and pollutant source tracking studies. Rob conducted his first microbial source tracking (MST) project for Herrera in 1991 at Pipers Creek in Seattle. He has since led 18 MST studies using various library/culture dependent and independent methods, and has authored guidelines for EPA in the use of MST for bacteria TMDL development and implementation.

Email: rzisette@herrerainc.com

Session 5C

FDA Report on the Occurrence of Foodborne Illness Risk Factors in Fast Food and Full Service Restaurants, 2013-2014

FDA is engaged in a multiyear study to collect restaurant data to investigate the relationship between food safety management systems, certified food protection managers, and the occurrence of risk factors and food safety behaviors/practices commonly associated with foodborne illness in restaurants.

In 2013-2014, FDA conducted baseline data collections concerning Foodborne Illness Risk Factors as part of a ten-year study. A final report for the 2013-2014 study of FBI Risk Factors in Fast Food & Full-Service Restaurants was released in November of 2018. Although this report is a stand-alone report representing the first data collection

CONFERENCE SESSIONS

period of the FDA's, results of the study will be used as a baseline for the 2nd and 3rd data collections in Fast-food and Full-service restaurants in 2017-2018 and 2021-2022.

Results of this data collection will be discussed along with preliminary conclusions.

David Engelskirchen, CP-FS, is a FDA Retail Food Specialist with FDA's Office of State Cooperative Programs. He has been with the FDA since August 2014 and is the Retail Food Specialist for Nevada and Washington. He serves as Co-Chair on the FDA National Retail Food Team Industry Outreach Workgroup and on the Conference for Food Protection Food Recovery Committee. Prior to FDA, he served over 36 years in the US Army Veterinary Service. David has Bachelor of Science Degrees in Vocational Education from Southern Illinois University and in Food Science from the University of Wisconsin and a Master of Arts in Education from Central Michigan University.

Email: david.engelskirchen@fda.hhs.gov

Session 5D

Wildfire Smoke Impacts Advisory Group

Presentation of the Communication Plan developed by the statewide workgroup made up of Environmental Health Directors, Health Officers, Public Information Officers, Emergency Response Coordinators, Department of Health, Department of Ecology, Tribal entities and other stakeholders. The workgroup developed a statewide customizable tool kit for local health to use before, during and after wildfire season with the intent of providing consistent messaging and resources for the audiences targeted by public health. Resource materials include ready-to-use fliers, news releases, website resources and locally-contributed letters and materials used in past seasons.

Holly Myers is currently the Environmental Health Director for the Yakima Health District. Holly has worked in the Environmental Health field for over 20 years including 13 years working in wastewater testing laboratories, 5 years working for the Washington State Department of Ecology's Air Quality Program and several years serving communities as

an Environmental Health Director/Supervisor for Yakima and Kittitas Counties. Holly played a key role in the creation and implementation of the Kittitas County Water Bank and was awarded the Environmental Health Director of the Year in 2015.

Email: holly.myers@co.yakima.wa.us

Session 6A

The Point of Nonpoint Pollution Prevention - Partnering with Ecology Staff to Solve Nonpoint Pollution Problems

Local environmental health agencies can face challenging situations when limited by local regulatory authority, political concerns, or staffing capacity. This presentation will describe how Washington State Department of Ecology Nonpoint field staff can help local jurisdictions correct sources of water pollution by conducting joint site visits, source investigations, providing technical assistance, and enforcement. We can also help with complaint response, shellfish protection districts, TMDL implementation, and watershed cleanup projects.

Jennifer Riedmayer is a Nonpoint Water Quality Specialist for the Southwest Regional Office at the Washington State Department of Ecology. She began her environmental career working on watershed restoration projects in Appalachia before relocating to Washington State. She has a Master's Degree in Environmental Studies from The Evergreen State College and Bachelors of Science from West Virginia University. She has worked for multiple sectors throughout Washington State addressing water quality problems associated with urban growth, forest practices and agricultural runoff..

Email: jrie461@ecy.wa.gov

Shawn Ultican is a Senior Water and Shellfish Specialist in the Washington State Department of Ecology's Southwest Regional Office. Shawn has over 25 years of experience in environmental health, including work in wetlands, education & outreach, solid waste management, septic systems, water quality monitoring, and pollution identification and prevention. He now lives in Olympia, and

CONFERENCE SESSIONS

spends much of this free time negotiating with his wife about equitable allocation of closet space, and attempting to tame the adolescent behavior of their cat Pearl.

Email: sult461@ecy.wa.gov

Ruth Piccone is a Water Quality Specialist for the Washington State Dept. of Ecology, focusing on Nonpoint Pollution in the Puget Sound. Ruth has worked for both state and local health jurisdictions in Washington and Montana in water quality, air quality, and various licensed establishments programs. Ruth's 24 years in environmental health is diverse, including lab analysis, field inspection, Administrative Rule writing and program administration. Ruth spends every minute she can with her teenage daughter and gardening (i.e. pulling weeds).

Email: rpic461@ecy.wa.gov

Session 6B

Shelton WWTP Dye and Microbial Study, Part 2

At the 2018 AEC I presented findings of a dye and microbial study done at the Shelton WWTP. For the 2019 AEC I hope to present the actions that the report initiated, including changes in shellfish growing area classifications, modifications to operations at the Shelton WWTP, and a follow up water quality study using sentinel oyster cages.

Mark Toy is an environmental engineer for the DOH Office of Shellfish and Water Protection since May 2007. He has worked in environmental health at the local and state levels as well as overseas for over 30 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.

Email: mark.toy@doh.wa.gov

Session 6C

2018 Foodborne Outbreaks and Lessons Learned

This session will discuss foodborne illness outbreaks reported in Washington in 2018. In addition to using data to review current foodborne illness trends, the presentation will provide information about the pathogens of concern, preparation methods that likely led to illness, and lessons learned during the investigation. Attending this session will help you make your illness investigations more effective and will provide you tips to help operators reduce the risk of similar outbreaks in your jurisdiction

Janet Anderberg is a Public Health Advisor in the Food Safety Program with the Washington State Department of Health. Her current duties at WA DOH include helping to investigate foodborne disease outbreaks, counseling and providing technical assistance to local health agencies, and providing training to both industry and regulators.

Email: janet.anderberg@doh.wa.gov

Session 6D

Wildfire Smoke Impacts Workgroup Updates: Guidance on Air Sensors and Closure Decisions

The Wildfire Smoke Impacts Advisory Committee was convened by the Washington Department of Health at the request of local health departments to improve our ability to protect public health in wildfire smoke response. In this session we will provide updates from two of the three priority topics being addressed by this group: guidance for decisions about canceling outdoor events and closing school during wildfire smoke episodes, and recommendations for use of low-cost air sensors to inform health decisions.

Julie Fox is the ambient air epidemiologist at the WA State Department of Health. She investigates health impacts and provides health recommendations for outdoor air pollutants. While this

CONFERENCE SESSIONS

includes many pollutants, her main focus has been addressing wood smoke, diesel exhaust and coal dust. She obtained a master's and doctoral degree from Johns Hopkins School of Public Health and was a postdoctoral fellow in the Department of Environmental & Occupational Health Sciences at the University of Washington.

Email: julie.fox@doh.wa.gov

Nancy Bernard, 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, 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. She has a MPH in Environmental Health Sciences from Tulane University, a BS in Environmental Health and a BA in Health Education from the University of Washington, and served on the Lake Washington School District Board of Directors for 20 years.

Email: nancy.bernard@doh.wa.gov

Session 7A

Kitsap Health's PIC program – lessons learned after twenty years

Kitsap Public Health established a water pollution identification and correction program in 1995. We've analyzed the 20 plus years of water quality and parcel survey data collected and used it to gauge the effectiveness of program elements. We've used the data to focus our efforts on the most effective PIC tools and methods. We've learned how to use our robust onsite sewage program and data management to direct our efforts to the most likely problem areas. We will discuss funding sources, identification of priority work areas, and conducting investigations. We will share how we use OSS program data to guide our work, how we've developed effective education programs, and how we've collaboration with partners to further our mutual goals.

Grant Holdcroft, RS, is currently Water Pollution Identification & Correction Program Manager at the Kitsap Public Health District.

Grant has 25 years working as an Environmental Health Specialist and Registered Sanitarian. Grant has worked in water quality, onsite sewage, and solid & hazardous waste at Kitsap and Mason Counties.

Email: grant.holdcroft@kitsappublichealth.org

Building programmatic capacity for state oversight of PIC programs

The Washington State Department of Health started funding Pollution, Identification, and Correction (PIC) Programs in the Puget Sound region in 2011 through the EPA's National Estuary Program (NEP). In this presentation, I will discuss the elements of the program and the work I'm doing to improve state oversight for PIC work. I will present on my approach to assessing barriers to success through interviews with county PIC coordinators. Finally, I'll talk through the preliminary work to integrate climate change considerations into PIC work. As a result of this work, I aim to provide better state oversight, increase interagency knowledge and communication, and discuss the future of PIC programs.

In grad school at UW, **Henry** studied the interactions between chefs, seafood and sustainable seafood certifications in Seattle. Henry has worked with the Washington Department of Health to improve their programming and interactions with shellfish licensees and the Northwest Fisheries Sciences Center on effects of feeds on sablefish development. He currently works at the Washington Department of Health as a Washington Sea Grant State Fellow, where he will assess the Pollution, Identification and Correction (PIC) program to increase collaborations, capacity and implementation of projects, as well as, the integration of climate change resiliency.

Email: henry.peterson@doh.wa.gov

Session 7B

Implementation of ESSB 6091 After the Hirst Decision

The "Hirst decision" was a Washington Supreme Court decision in October 2016 that required local governments to ensure that building

CONFERENCE SESSIONS

permit and land use decisions did not affect instream flows and other senior water rights. The Washington State Legislature passed ESSB 6091 in January 2018 in response to the decision. The law, now codified primarily in Chapter 90.94 RCW, helps to protect our state's water resources while also providing water for families in rural Washington. In the last year, Ecology has providing support for watershed planning processes in 15 WRIAs, approved funding of \$20 million in grants for projects that will protect and enhance stream flows, and has adopted a watershed plan update for WRIA 11 (Nisqually River Basin).

Dave Christensen is the Program Development Section Manager with the Department of Ecology's Water Resources Program. He has been in his current position for five years leading a team that develops state rules and policies, and provides program support for key water resources functions statewide. Dave has over 20 years of experience overall addressing environmental and public health issues. He holds a B.S. degree from the University of Washington in Fisheries Biology and an M.S. in Limnology and Oceanography from the University of Wisconsin.

Email: davc461@ecy.wa.gov

Session 7C

Preventing Foodborne Illness Globally: One Cup of Coffee at a Time

Starbucks' Global Food Safety, Quality and Regulatory (GFSQ&R) department is committed to ensuring that Starbucks continues to provide a safe, wholesome and high quality product to customers worldwide. This presentation is intended to provide attendees a glimpse into the various programs Starbucks implements to deliver on this mission and provide insight into the day-to-day role and responsibilities of a quality assurance manager within GFSQ&R.

Matt is currently NEHA's Region 1 RVP with responsibility of representing and supporting the following affiliate organizations: Alaska, Washington, Idaho, Oregon and Business & Industry. His day job is a Product Quality Assurance Manager for Starbucks Coffee Company based in Seattle, WA with a primary responsibility for managing the food safety and quality aspects of Starbucks' fresh food supply chain.

Prior to working at Starbucks, Matt worked as an REHS/RS in Orange County, California for 8 years. Matt's educational background includes a BS in Biology from UC Riverside and a MPH with an emphasis in environmental health from the CSU Fullerton.

Email: mreighte@starbucks.com

Rita is a quality assurance manager senior within Starbucks' Retail Food Safety program supporting the Pacific Northwest, including Alaska, Washington, Oregon and a small portion of Idaho. Prior to Starbucks, Rita worked at NSF International in the global bottled water program, A&P Grocery as an Environmental Health & Food Safety supervisor and the Oakland County Health Department as a public health inspector. Rita is originally from Australia and started her career working for a Health Department in a small gold mining town of Ballarat.

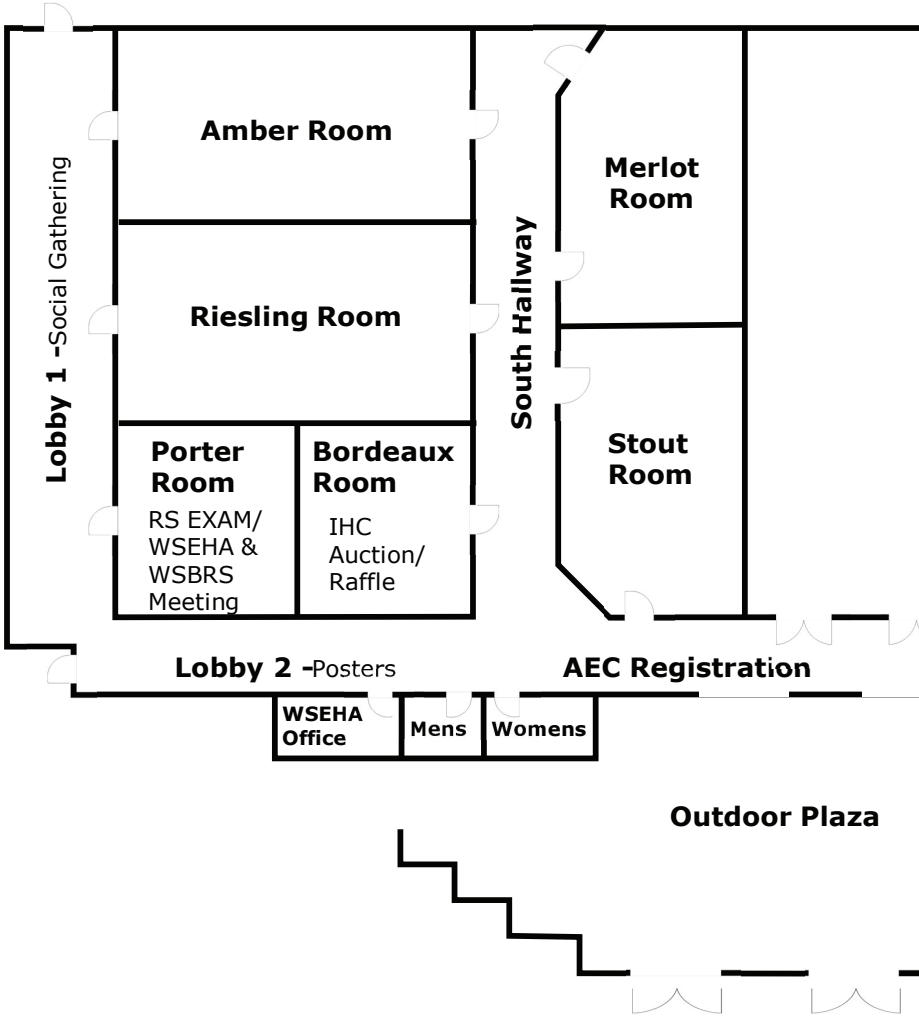
Email: rbartz@starbucks.com

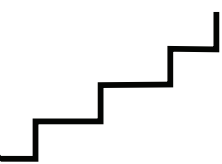
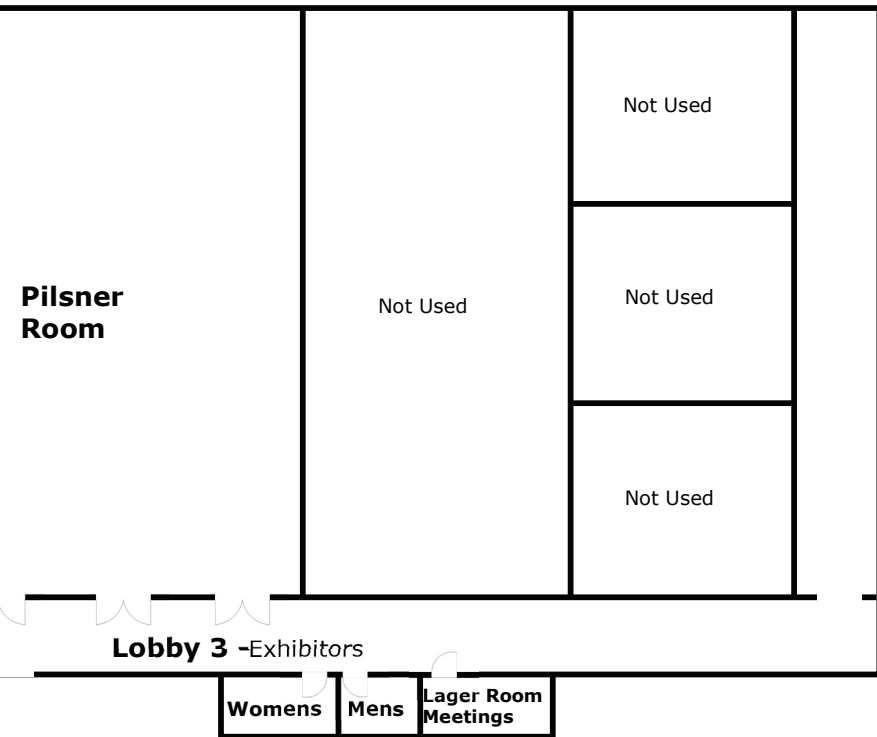
Session 7D

Evaluation of Wildfire Smoke Mortality in Washington from 2006-2017

Investigators at the Washington Department of Ecology, Washington Department of Health and the University of Washington collaborated to evaluate wildfire smoke exposures in Washington from 2006-2017 and increased risk of non-traumatic mortality. Wildfire smoke exposures were estimated from particulate matter (PM_{2.5}) concentrations for populations living near monitors across the state. Two approaches were applied to estimate mortality: one based on risk estimates from wildfire smoke exposure reported in published epidemiologic studies and the other a case-crossover epidemiologic investigation. We will present methods and results of these studies.

Julie Fox is the ambient air epidemiologist at the WA State Department of Health. She investigates health impacts and provides health recommendations for outdoor air pollutants. While this includes many pollutants, her main focus has been addressing wood smoke, diesel exhaust and coal dust. She obtained a master's and doctoral degree from Johns Hopkins School of Public Health and was a





CONFERENCE SESSIONS

postdoctoral fellow in the Department of Environmental & Occupational Health Sciences at the University of Washington.

Email: julie.fox@doh.wa.gov

Annie Doubleday is a Master's in Public Health student in the Department of Environmental and Occupational Health Sciences at the University of Washington. She studies the health effects associated with wildfire smoke exposure, as well as other health impacts associated with disasters and climate change.”

Email: doublededa@uw.edu

Sessions 8A-9A

Skagit County's Secrets to Building a Successful and Empowered PIC Team

Since 2008, Skagit County's PIC Program has been working to reduce bacteria in one of the largest commercial shellfish growing areas in the state. In 2015, with new sources getting harder to find, significant staff turnover, and only 5 years left to meet a statewide goal that can't be achieved without us, we needed to reform our team and come up with a new plan. Join me for a conversation about how we reinvigorated our team, built partnerships with other agencies to tackle problems we couldn't, how we got the bosses on board, and what the results were.

Karen DuBose is Skagit County's Pollution Identification and Correction Coordinator. She has been in the poo business in various positions for more than a decade, developing a unique set of skills (and sense of humor) for finding and fixing fecal coliform bacteria in surface water. Her recent campaign can be found at poosmart.org.

Email: kdubose@co.skagit.wa.us

Adapting a PIC Program that Doesn't Fit the Template

For many Puget Sound Pollution Identification and Correction (PIC) Programs, finding and fixing failing septic systems has been a primary component of the program. In Whatcom County, the geographic area impacting shellfish beds, large percentage of agricultural land uses,

tribal shellfish beds, and an international border have required a few twists in our program. Learn about how our partnerships, multi-faceted approach, and continual adaptations to improve coordination, build trust, and engage a broad and diverse community have led to recent successes in improving water quality and lifting shellfish harvest restrictions.

Erika Douglas is a Senior Water Quality Planner with Whatcom Public Works- Natural Resources. She has a BS in Environmental Science from Western Washington University and a MS in Applied Ecology and Conservation Biology from Frostburg State University. Erika coordinates the Whatcom County Pollution Identification and Correction (PIC) Program and Shellfish Protection District Program working with partner agencies and community groups implementing projects to improve water quality.

Email: edouglas@co.whatcom.wa.us

Improving Water Quality Across Borders

Watershed boundaries rarely coincide with lines on maps that define political borders. This is true in Whatcom County, where watersheds span county lines, county-city divisions, and international borders that include the Lummi Nation reservation and a border with Canada. To address high bacteria levels in water flowing south into Whatcom County from Canada, partners in Washington and British Columbia formed a Technical Collaboration Group (TCG) in 2018 to carry out a three-year workplan. Hear how and why the international group formed, how we maintain progress, and how the TCG's organizational elements may be useful in cross-border watershed work throughout Puget Sound.

Andrea Hood is an Environmental Planner for Washington Department of Health's National Estuary Program and coordinates a multi-agency partnership in Whatcom County to reduce fecal bacteria pollution to support safe shellfish harvest. Andrea's past natural resource stewardship work includes positions with north Puget Sound conservation districts and the City of Bellingham. Andrea holds degrees in Landscape Architecture and Environmental Management.

Email: andrea.hood@doh.wa.gov

CONFERENCE SESSIONS

Session 8B

WA Surface Water Quality Standards Updates for the Protection of Public Health

This presentation will provide a summary of the changes that WA State Dept. of Ecology recently made to the Surface Water Quality Standards (Chapter 173-201A WAC). These numeric criteria protect the public from waterborne disease while boating, swimming, and enjoying other water contact recreational activities in the state waters. The presentation will cover the following topics:

- reason for changes from fecal coliform to new bacterial indicators; *e. coli* & *enterococci*.
- a summary of the new water quality criteria
- how this recreational criteria change is related (or not related) to the fecal coliform standards enforced by WA Ecology and WA DOH for protecting shellfish beds
- how will the new water quality standards be implemented into water protection and water clean-up programs in the state.

Chad Brown is the Water Quality Management Unit Supervisor for the WA Dept. of Ecology. His education is in freshwater biology and has worked for the Department of Ecology for 18 years performing water quality assessments and developing & implementing the state water quality standards.

Email: chad.brown@ecy.wa.gov

Bryson Finch is a PhD toxicologist who leads the development of surface water quality standards for conventional pollutants for WA State Department of Ecology. He came to Ecology two years ago after working as an environmental consultant studying the use and effects of pesticides in aquatic systems.

Email: bryson.finch@ecy.wa.gov

Session 8C

Proposed Changes to WAC 246-215 Retail Food Service

Washington is mid-way through revising the state food service rule and adopting the 2017 FDA Food Code. The proposed changes are the result of substantial input from stakeholders around the state and will go through two more public comment periods prior to implementation in May 2020. This presentation will review the history and rationale of the potential changes to the rule. Attendees will have a better understanding of the rule revision process, the proposed rule language and public health rationale, and how to provide additional comment.

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. A proud creator of a life-size soap costume to educate on handwashing, Susan is a graduate of Eastern Washington University and eagerly looks for new ways to use history, science, and lessons learned to reduce public health risks.

Email: susan.shelton@doh.wa.gov

Retail Food Safety Program Standards Update

DOH Food Safety Program participates in the Voluntary National Retail Food Regulatory Program standards. The programs framework of nine standards outline the elements of a highly effective and responsive program for agencies that regulate retail food facilities. DOH Food Safety Program partners with local health jurisdictions and other enrolled agencies to help meet the designated measures. This brief session highlights some specific ways that DOH Food Safety Program can assist in meeting these measures. The intent of the session is to allow an opportunity for jurisdictions to ask questions and participate in discussion about the program standards.

Helena Barton is a Food Safety Specialist at the WA State Department of Health. Her public health career began at Chatham County Health Department (CCHD) with the Environmental Health Division in Savannah, GA. Her experience progressed from inspections in all EH Programs to a leadership role as Assistant EH Manager.

CONFERENCE SESSIONS

She eventually relocated with her family to Washington for a position with Seattle-King County Public Health. This experience at the local public health level in WA led to her current position with the WA State Department of Health. Helena is a graduate of Mercer University in Macon, GA with a Bachelor of Science Degree in Biology and has more than 20 years of food safety experience.

Email: helena.barton@doh.wa.gov

Session 8D

Is EHS Ready to be a part of Emergency Management

When larger disasters happen all of the agencies and response groups coordinate in the local, county or state Emergency Operations Center. What type of planning and resources have been developed for environmental health professionals/teams to become a part of this process. Has there been any management teams armed with training prepared with sure jurisdiction/delegation of authority ready to respond or help with the coordination. This presentation will help to bring these issues forward in a candid discussion.

Matthew P. Bernard – 41 years in the emergency, environmental response, safety and planning business. Presently FEMA Region 10 NIMS Coordinator. Also type 1 ICS Safety Officer, Guard. Safety Officer for USCG Response to Katrina/Rita in Louisiana, ESF1,10 member Hurricane Charlie, Frances, Ivan and the Nisqually earthquake , Incident Commander at ICP Homer, AK during Exxon Valdez oil spill. Safety Professional, Industrial Hygienist, Registered Environmental Manager, Certified Safety and Environmental Compliance Officer, BA in Marine Biology, Masters Work in Environmental Management U of Washington.

Email: Bernard.mp@comcast.net

Session 9B

The \$94.6 Million Question: “What Do We Do Tomorrow?” - The Tacoma Smelter Plume and Health Issues that Stay with Us in the Future

What do you do when the \$94,600,000 is gone and 1,000s of residential

yards are still contaminated? That's worth talking about.

Asarco operated a copper smelter in Ruston WA from 1890 to 1986. Arsenic and lead from its stack polluted soils was spread over 1,000 square miles. The plant site became a Superfund Site

ASARCO's 2009 bankruptcy settlement provided \$94.6 million for damages. TPCHD and Ecology are doing a lot with these funds: 1,000s of homeowner yards are getting soils tested, 1,200 yards will be cleaned up, and wide-ranging education and outreach is happening.

But what happens 20, 30, 100 years after the money's gone? When all remnants of the smelter are gone. Buildings - gone. Smoke stack - gone. Former workers - gone. Anyone who remembers the smelter - gone. All gone, but the contamination above MTCA levels is still there in 1,000s of yards. How will people know what they need to know? That's the \$94.6 million question.

Gregory Tanbara is a Health Promotion Coordinator for the Tacoma-Pierce County Health Department's Environmental Health Division. He joined the Health Department in 2005. He's worked on a variety issues - brownfields site assessments, source control with businesses, the Health Department's Communities of Focus initiative and contaminated soils left by the historic Asarco Smelter.

Greg is a lifelong resident of Tacoma WA. His background also includes work in economic development, workforce training, and higher education; a master's degree in business from Antioch University Seattle; and a lifetime of involvement in his favorite community and charitable organizations.

Email: gstanbara@tpchd.org



PARTICLES

PLUS

particlesplus.com

jim.akey@particlesplus.com

781-341-6898

CONFERENCE SESSIONS

Session 9C

Hemp, CBD, & Approval of Food Additives: Turning The Gray to Black and White

Despite lack of federal approval for adding to retail food, there is considerable miscommunication and confusion surrounding the inclusion of cannabidiols (CBD) in food and beverages. This presentation will review the historical and current state and federal laws regarding food additives to better explain the status of hemp, CBD and other novel food ingredients. In addition to better understanding the ingredient approval process that applies to food, attendees will also have increased understanding of the emerging hemp and CBD market.

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. A proud creator of a life-size soap costume to educate on handwashing, Susan is a graduate of Eastern Washington University and eagerly looks for new ways to use history, science, and lessons learned to reduce public health risks.

Email: susan.shelton@doh.wa.gov

Session 9D

Providing Safety, Shelter and Sustainability

The vision of 200 Orphanages since 2007 is to raise awareness and funds for safety, shelter and sustainability for orphans. Our partners are existing US based nonprofits active in orphan care providing basic needs, as well as holistic care for the orphan child. Our partners in countries such as Haiti, Guatemala, Tanzania, India, Mexico, Cameroon have programs that provide for basic needs such as safe shelter, education and medical care for the child. These programs also include trades training and university support for the child's future. Our partners need donors to help with projects such as greenhouses, solar pumps for irrigation, even tractors. We help raise funds for many of these types of projects. Many of our partners also pursue sustainability projects include clean water wells in areas where clean water is scarce. Our partners typically have wells for the orphans, but provide water for

nearby schools as well as the local community.

Jan Hanson is founder and director of 200 Orphanages Worldwide. The organization is a registered charity in Washington State. The 10 year old organization's mission is to raise awareness and funds to provide safety, shelter and sustainability for orphans around the world. Over the past 10 years, about \$1 million has been raised, 50 projects in 17 countries. Among other projects, the organization has funded clean water wells, solar power, irrigation and green houses for sustainability, dormitories for safe shelter and security walls, fences and guard houses for security. The organization is primarily volunteer run, and 100% of funds raised for a project goes to the project.

Email: janh@200orphanagesworldwide.org

Session 10A

A Wicked Strategy for A Gnarly Issue - Tacoma-Pierce County's strategy calling for new approaches to health equity

What's the definition of health equity? It means everyone can achieve their full health potential. That health shouldn't depend on someone's race, ethnicity, gender, income, sexual orientation, neighborhood or any other social condition. Making this a reality is a tough one. You might say this is one "gnarly" issue for public health. A gnarly issue that will require some "wicked" new strategies.

We are going to spend a short time here discussing health equity strategies we are employing in Tacoma-Pierce County. We'll look at how a four-point strategy - cross-sector partnerships, investment, civic engagement and program alignment - are getting tested in some Communities of Focus. What we are doing with data and maps. And, if the conversation takes us there, a deeper dive into what is happening with all of this on the East Side of Tacoma.

Gregory Tanbara is a Health Promotion Coordinator for the Tacoma-Pierce County Health Department's Environmental Health Division. He joined the Health Department in 2005. He's worked on a variety issues - brownfields site assessments, source control with businesses, the Health Department's Communities of Focus initiative and contaminated soils left by the historic Asarco Smelter.

CONFERENCE SESSIONS

Greg is a lifelong resident of Tacoma WA. His background also includes work in economic development, workforce training, and higher education; a master's degree in business from Antioch University Seattle; and a lifetime of involvement in his favorite community and charitable organizations.

Email: gtanbara@tpchd.org

Session 10B

Updating State Board of Health Rules on Animal Waste

The State Board of Health is updating its Keeping of Animals rule, chapter 246-203-130 WAC. This presentation will provide background on environmental health concerns associated with livestock manure and other domestic animal waste, the state regulatory structure, and Board policy recommendations for updating the rule. The discussion will also provide opportunity to give input on concepts and language of the revised draft rule.

Stuart Glasoe is a policy advisor for the State Board of Health on environmental health rules and issues. He has 31 years' experience in numerous natural resource, water quality, and environmental health positions with the state. He has degrees in regional planning, earth science, and environmental science.

Email: stuart.glasoe@sboh.wa.gov

Andrea Hood is an Environmental Planner for Washington Department of Health's National Estuary Program and coordinates a multi-agency partnership in Whatcom County to reduce fecal bacteria pollution to support safe shellfish harvest. Andrea's past natural resource stewardship work includes positions with north Puget Sound conservation districts and the City of Bellingham. Andrea holds degrees in Landscape Architecture and Environmental Management.

Email: andrea.hood@doh.wa.gov

Session 10C

Food Donation from a Regulatory Perspective

Food waste reduction and recovery is a top priority for the EPA and is an important way to reduce hunger in our communities. In Washington State, organizations that receive donated foods are regulated somewhat differently than other food establishments. During this presentation, we will discuss the food safety requirements for food donation. We will discuss proposed updates to the donated food section of the Washington Retail Food Code (WAC 246-215) and work being done locally and nationally to promote safe food donation. We will discuss examples of food donation from various food establishments and how to evaluate the safety of food donation during each step in the process.

Emily Hovis is a Food Safety Specialist at the Washington State Department of Health. She is currently serving on the Conference for Food Protection Food Recovery Committee. She received a Master of Science in Biology from Sonoma State University and has a diverse background as a wildlife biologist, fermentation specialist, farmer, and environmental health specialist. In her free time, Emily enjoys hiking, gardening, and making beer, wine, and cheese with her husband, cat, and four chickens.

Email: emily.hovis@doh.wa.gov

Session 10D

LWHMP Residential Services Program approaches to reducing residential toxic exposures

The Local Hazardous Waste Management (LHWMP) Residential Services Program (RSP)'s mission is to help residents improve the environmental health conditions in and around their homes (both single-family and multi-family) by offering core services and strategic interventions to help identify and mitigate these conditions, in addition to informational campaigns and online resources provided by the LHWMP Communications Team.

In our presentation, we will describe current Residential Services

CONFERENCE SESSIONS

Program approaches to reducing residential toxic exposures, source control, hazards investigations, toxics removal of lead based paint, safer cleaning practices and responding to requests from King County residents. All these services are designed, delivered and evaluated using a racial equity lens.

Mohamed manages an In-Home Services at RSP that respond to children with elevated blood lead levels and a lead (Pb) residential assessment and hazards investigations pilot. He is Registered Environmental Specialist from NEHA, and holds master's degree in Global Health from University of Washington and Master in Medical Parasitology from Kenyatta University, Kenya.

Email: mohamed.a.ali@kingcounty.gov

Baba Badru currently manages the Community Services operation of RSP with the Local Hazardous Waste Management Program (LHWMP) with current emphasis on promoting safer cleaning behaviors in residential settings. Prior to working for King County, Baba has extensive work experience in energy conservation and behavior change. He has a Master's degree in Environmental Policy & Management from University of Denver and Bachelors of Arts Science in Science Technology and Environment from the University of Washington.

Email: babatunde.badru@kingcounty.gov

Charles Wu has worked for over 22 years for King County Water and Land Resources Division and Public Health-Seattle & King County and is the Hazardous Waste Unit Manager in the Local Hazardous Waste Management Program (LHWMP) in King County. He is the management liaison for the Residential Services projects in the LHWMP program.

He has a Master's in Business Administration from the University of Phoenix-Seattle Campus and a Bachelor's of Science from the University of Washington School of Public Health and Community Medicine.

Email: Charles.Wu@kingcounty.gov

Tracee is a supervisor at Public Health - Seattle and King County. For over twenty years he has been working to reduce residential chemical

exposures, developing multiple programs and projects around lead poisoning investigation/prevention, healthy housing services, promotora network development, and community grants featuring community directed partnership. He was a contributing author and trainer for the National Center for Healthy Housings' original Healthy Housing Practitioner certification program.

Email: Tracee.Mayfield@kingcounty.gov

Session 11A

Mapping Environmental Health Disparities in Washington State Communities

The Washington Tracking Network (WTN) at the Washington State Department of Health (WSDOH) includes a new mapping tool aimed at highlighting Environmental Health Disparities (EHD) in communities across Washington, at the census tract level. The EHD map was developed as part of a collaborative project between community organizations, academia, and government agencies and lets users easily identify communities that are most affected by environmental hazards and contain more vulnerable populations by ranking communities on a scale of 1-10. Communities with little to no environmental hazards or vulnerable populations are ranked low (1), whereas communities with highly vulnerable populations and more exposure to environmental hazards are ranked high on the map (10). This session will explore the Environmental Health Disparities map in more detail and review potential uses of the map for local health.

Lauren Frelander is an Epidemiologist for the Washington Tracking Network at the Washington State Department of Health where she works on identifying spatial and temporal trends of environmental exposures, evaluating environmental health determinants that may contribute to health disparities, and making environmental public health data and information meaningful and accessible to the public through environmental public health tracking. Lauren received her MS degree in medical and health geography from Virginia Tech and has worked in spatial epidemiology and environmental public health ever since.

Email: lauren.frelander@doh.wa.gov

CONFERENCE SESSIONS

Tina Echeverria is the Project Manager for the Washington Tracking Network at the Washington State Department of Health.

Email: Tina.Echeverria@doh.wa.gov

Session 11B

Epidemiology of Tick-borne Pathogens in Washington State

We incorporated data from surveillance of ticks and humans to better describe the epidemiology of tick-borne diseases in Washington. From October 2010 through December 2016, field drags collected 977 unfed ticks including *Ixodes pacificus*, *I. angustus*, *I. spinipalpis*, *I. auritulus*, *Dermacentor andersoni*, and *D. variabilis*. The prevalence of *Borrelia burgdorferi sensu lato*, *B. burgdorferi sensu stricto*, *B. miyamotoi*, and *Anaplasma phagocytophilum* in *I. pacificus* ticks was 7.4%, 4.2%, 4.4%, and 1.9%, respectively. No *Rickettsia rickettsii* were detected in *Dermacentor andersoni* or *D. variabilis*. During this time period, 226 tick-borne disease cases were reported in Washington residents; 79 (35%) of which were autochthonous. Conditions with autochthonous cases included Lyme disease, Rocky Mountain spotted fever, tick-borne relapsing fever, and tularemia. Human case histories and detection of pathogens in field-collected ticks indicate that several tick-borne pathogens are endemic to WA.

Liz Dykstra is the Public Health Entomologist for the WA State Dept. of Health and is the Lead Investigator for the state's tick surveillance project.

Email: elizabeth.dykstra@doh.wa.gov

Hanna Oltean is the Washington State Dept. of Health's Zoonotic Disease Epidemiologist. She tracks all human zoonotic and vector-borne disease cases.

Email: hanna.oltean@doh.wa.gov

Session 11C

Improving Public Food Safety: Using Big Data and AI to Connect Restaurant Operators with Health Departments

There are thousands of health departments (HDs) in the U.S., each with different inspection standards, enforcement policy, and reporting behavior. Based on top university research, Seattle-based Hazel Analytics has developed innovative big data and standardization solutions that are enabling restaurant operators to manage risk and compliance in such a diverse HD landscape. Using Hazel's technology and standardized inspection scores, food retailers have gained critical tools that are both tactical and strategic: near real-time visibility into high-risk events and facilities for preemptive and corrective action, and the ability to analyze operations across time, regions, and peers to inform systematic process improvement. We will describe the innovation, review case studies, and discuss opportunities for both HDs and food retailers to contribute to and benefit from this technology. Specific case studies from, and opportunities for, Washington state HDs will be a core focus.

As CEO and Co-Founder of Seattle-based Hazel Analytics, **Arash** has led the transition of the company from university research project to sustainable commercial venture with a suite of Fortune 1000 customers across the food retail, financial services, government, and education industries. Hazel's technology is used by over 100 global and national food retailers to proactively monitor food safety at over 100,000 outlets in the US. Hazel users span the food retail spectrum, and include Amazon, Chick-fil-A, McDonalds, Starbucks, and Target. Arash holds an MBA from the UCLA Anderson School of Management and a BS in Computer Science from UCLA.

Email: arash@hazelanalytics.com

Session 11D

Chemical Hazard Assessments, Safer Ingredients, and Alternative Assessments: Three Tools for Reducing Toxins in Our Lives

The Reducing Toxic Threats unit at Washington Ecology works to advance safer products, processes and practices in Washington.

CONFERENCE SESSIONS

As part of this duty we require a transparent and thorough method of evaluating the risks from chemicals. This presentation will overview different types of Chemical Hazard Assessments (CHAs) and how they can be used to choose safer products. In addition, the process of performing Alternative Assessments (AAs) will be outlined, including methodology and how CHAs are used. This process, required by Washington law when regulating toxic chemicals, will be outlined as it relates to current efforts related to PFAS in food packaging.

Craig Manahan is a Safer Ingredients Chemist in the Hazardous Waste and Toxics Reduction Program at the Washington Department of Ecology. He has a PhD in Chemistry and Chemical Biology from Cornell University. He also has experience in body care (cosmetics) manufacturing and teaching at the college level. He analyzes chemicals for hazardous properties and promotes the use of safer chemicals.

Email: craig.manahan@ecy.wa.gov

Session 12A

Environmental Health has a Place in the Housing and Homelessness Crisis

The housing and homelessness crisis is extremely complex and needs diverse response efforts to be effective. Thurston County Healthy Homes Program has joined the multi-jurisdictional housing and homelessness response efforts to represent issues around housing conditions. This was not originally part of local response efforts; it took some time to get a voice at the table. The program now leads the Thurston County Rental Housing Workgroup to focus on ensuring that existing rental housing remains in good, habitable condition over time to continue to serve as safe, healthy, affordable housing for current and future generations. The workgroup hears from landlords about their needs and challenges in order to find ways to work together to improve rental housing. Alongside this work, the Healthy Homes Program continues to provide education and technical assistance for preventing, reducing and addressing housing-related health risks like mold, indoor air pollution, exposure to toxics and more.

Elisa began working in the Thurston County Healthy Homes Program in January 2013 and became the Program Coordinator in July 2015. She's a NEHA certified Healthy Homes Specialist. She also serves as a team lead on Thurston County's Housing Action Team and does back-up communication work for Thurston County Public Health & Social Services. Elisa graduated with her BA in Communication and Sociology from Western Washington University and completed the Film Production Program at Vancouver Film School in British Columbia, Canada. Her past work experience includes administrative and communication work for the Washington State Department of Ecology, event planning and volunteer coordination.

Email: sparkme@co.thurston.wa.us

Session 12B

Discovering Hidden Information in the West Nile Virus Genome

West Nile Virus (WNV) is transmitted by mosquitoes and maintained in certain bird reservoir populations. The virus can infect humans, horses, and other mammals and birds. Symptoms range from fever to moderate or severe neurological complications. Since 2006, a total of 97 human cases have been reported with in-state exposure. The increasing number of WNV cases is likely due to the emergence of novel viral strains, which may be more virulent in humans. Recently, whole genome sequencing (WGS) has been used to gain a more detailed understanding of WNV spread, population dynamics, virulence, and mosquito transmission. In 2018 WNV was detected for the first time in mosquitoes from Western Washington. Additionally, seven Washington WNV samples were the first from the Pacific Northwest to be analyzed by WGS. This genome data indicates that there may be distinct strains on the east and west sides, and WNV likely overwinters in Washington mosquitoes.

Amy Salamone is an environmental scientist who specializes in the use of molecular techniques to detect and analyze zoonotic, vector borne, and fungal pathogens in the environment.

Email: amy.salamone@doh.wa.gov

CONFERENCE SESSIONS

Session 12C

***Vibrio parahaemolyticus* Illness Traceback**

Shellfish-associated *Vibrio parahaemolyticus* illnesses occur every year during the summer, as the bacteria is naturally occurring in our waters and thrives in warmer temperatures. The majority of 2018 illnesses among individuals who consumed raw oysters occurred in July and August, which is consistent with historic illness trends, but 2018 also saw the first reports of illnesses associated with product harvested in May. Illness investigations and product traceback begins once these illnesses are reported to local health jurisdictions and DOH and can take weeks to complete depending on the circumstances of each individual case. This presentation will provide insight into (1) illness investigation, product traceback, and closures completed by the DOH shellfish program; (2) what happened in 2018 and plans going forward; and (3) ways in which local health can support investigations and how the information collected affects potential closures.

Erika is the Shellfish Illness Prevention Coordinator with the Office of Environmental Health and Safety. She is responsible for ensuring proper implementation of the state's *Vibrio parahaemolyticus* Control Plan and coordinating trace back of product, investigation into shellfish companies and growing areas, and notification/communication with other states and countries. She received her master's education from the Colorado School of Public Health with a focus on animals, people, and the environment. Her experience in the field of environmental health is primarily around food safety and foodborne illness investigations and prevention, both in government and the private sector.

Email: erika.atherly@doh.wa.gov

Session 12D

Case Management and Lead Hazard Remediation with \$3.4 Million HUD Funding

The Washington Department of Health's (WDOH) Childhood Lead Poisoning Prevention Program (CLPPP) identifies more than 500 children per year with elevated blood lead levels (EBLLs). Families affected

need assistance in eliminating exposure and accessing services to address health needs. Case management services for affected families increased during the last 16 months through a new DOH protocol. Some Local Health Jurisdiction services are reimbursed by DOH, and centralized services are also available in areas of need. Currently, the CLPPP is implementing a \$3.4 million award from the Department of Housing and Urban Development's (HUD) Lead Based Paint Hazard Reduction and Health Housing Grant to remove lead and other environmental risks that can trigger asthma, cause falls, or impact indoor air quality from the environments identified in the case management process. We will share an overview of the case management and HUD grant programs, and explain how they work together.

Amy Bertrand, MSW: Amy is a social worker at the Washington State Department of Health, with several years of legal, policy, and direct service education and experience. She is the Case Management Coordinator for the Childhood Lead Poisoning Prevention Program.

Email: amy.bertrand@doh.wa.gov

Session 13A

Syringe Exchange Programs: Lessons from the Yakima Health District

The Yakima Health District operates a Syringe Service Program (SSP) to reduce the spread of blood borne diseases such as Hepatitis C and HIV among people who inject drugs (PWID). This is a public health service that adopts and utilizes the best practices established for harm reduction in this population. Yakima Health District SSP has successfully been in operation since 1993. Come learn about the success of The Yakima Health District's SSP and how to start a SSP of your own. It's essential that participants come together, share knowledge, gain some new tools with which to feel empowered and become leaders in this endeavor.

Emily Contreras is currently a Community Health Specialist for the Yakima Health District. Emily has a Master's in Social Work from Eastern Washington University. Emily's background in social work has led her to work in the field of HIV/STD and Syringe Exchange. Emily's

CONFERENCE SESSIONS

dedication to providing harm reduction options and overdose prevention strategies to active drug users is rooted in the belief that this population deserves human rights as much as anybody else.

Emily has over 5 years in working with Syringe Exchange Programs and has been a part of the growth and expansion of Yakima Health Districts Syringe Service Program.

Email: emily.contreras@co.yakima.wa.us

Melissa Sixberry, BSN, RN is currently the Director of Disease Control for the Yakima Health District. She received her degree in nursing from Lake Superior State University and is a member of the Lake Superior Nursing Honor Society. Melissa is also a published co-author for CDC's Emerging Infectious Disease series. Melissa has worked in healthcare for almost 20 years in various settings including, hospitals, FQHC clinics and local health departments. Melissa has over 2 years in managing a Syringe Service Program (SSP) for the Yakima Health District with expansion of several services during this time.

Email: Melissa.Sixberry@co.yakima.wa.us

Session 13B

When Sewer Rats Come to the Surface: A look closer look at Seattle's Rodent Program

Public Health-Seattle & King County provides sewer baiting services and rodent complaint response for the City of Seattle. Updates in approaches to city rodent programs has long been overdue for our region. Join public health staff for an overview of rodent complaint response and enforcement, challenges associated with hoarding cases, approaches to outreach and student engagement, and using GIS systems for sewer baiting to take a closer look at the relationship between utility infrastructure and rats.

Leah Helms has worked for Public Health-Seattle & King County since 2004. During her tenure at Public Health she has worked in the food program, West Nile virus surveillance, rodent and illegal dumping

investigations, and regulating pet related businesses. She has a passion for educating operators and our public around many environmental public health topics, seeking to improve processes, and commitment to improving implementation of equity and social justice to our programing.

Email: leah.helms@kingcounty.gov

Session 13C

Evaluating Lifeguard Supervision

Despite public health efforts, drowning remains among the top ten leading causes of unintentional injury death with an average of 10 drowning deaths per day in the United States. Drowning is preventable, yet it still happens in regulated pools and even pools with apparently competent, well trained lifeguards – why does this happen? This session offers the Environmental Health Professional some information to address the question posed above and information to help them better evaluate the quality of lifeguard supervision. Public Health Officials can have a positive impact on drowning prevention through conversations with lifeguards aimed at helping them better understand proper positioning, zone certification, scanning through the water column, inattentional blindness and other concerns that prepare them to be able to save lives.

David DeLong is the Executive Director of Safety and Risk Management at the YMCA of Pierce and Kitsap Counties. Dave has more than 30-years of experience in safety and health. Prior to joining the Y, Dave worked at Tacoma-Pierce County Health Department, Department of Health and the Washington State Board of Health. His experience includes: field work, program management, program development, and policy development. Dave is a coauthor of the Washington State Environmental Health Association Pool Operator's Manual and a collaborator in the production of the Health and Safety Guide for K-12 Schools in Washington.

Email: dadelong@ymcapkc.org

CONFERENCE SESSIONS

Session 13D

Lead in Drinking Water in Schools

In 2017, following the Governor's directive on lead and subsequent planning by state agencies, the legislature appropriated \$3 Million Dollars to the Department of Health to test for lead in drinking water in schools, improve case management, and improve lead surveillance. This presentation focuses on what we learned in our first year sampling for lead in drinking water in schools

Anne Marie has a BS in Environmental Science, Chemistry Minor, and will be graduating in November 2019 with Masters in Public Health. Anne Marie has over 12 years of experience working in public health. She started her public health career in Louisville KY where she was the Environmental Engineering Specialist for the Air Pollution Control District then moved to Washington State where she has worked for the past eight years. She now coordinates the lead in drinking water in schools program.

Email: annemarie.charles@doh.wa.gov

Derrick Dennis is the Water Quality and Data Management Section Manager for the Department of Health, Office of Drinking Water. He has been with the Office of Drinking Water for 18 years, much which has been spent on the federal Lead and Copper Rule (LCR) implementation for public water systems. He was part of a small group of state representatives who advised EPA on the 2004 LCR Short-Term revisions and was part of the National Drinking Water Advisory Council Workgroup which developed recommendations for EPA on long-term revisions to the LCR.

Email: derrick.dennis@doh.wa.gov



doh.wa.gov
360-236-3358



DEPARTMENT OF ENVIRONMENTAL
& OCCUPATIONAL HEALTH SCIENCES

UNIVERSITY of WASHINGTON
School of Public Health

deohs.washington.edu
ehadmin@uw.edu
206-543-6991



feelgoodinc.org
407-986-3351
hannah@feelgoodinc.org

Adverse Gastrointestinal Symptoms in Children Associated with Consumption of Pasteurized Milk

In January 2018, Washington State Department of Agriculture Food Safety Program inspectors received notice of a consumer complaint concerning pasteurized milk. Routed from the regional public health district, the complaint included reports of three children with sore throat and upset stomach after consuming chocolate milk at a private elementary school in Spokane, WA. The Washington Rapid Response Team (RRT) was utilized to coordinate field operations and sample analysis, notify response partners, and develop response updates. Environmental assessments (EAs) were conducted at the school, distributor, and the dairy plant that processed the milk. Product samples collected by WSDA were tested for foodborne pathogens, milk quality indicators, and compared against milk chemistry standards. The processing plant ceased production and conducted remediation/mitigation activities in coordination with WSDA. Product in question was withdrawn from delivery locations by the distributor.

Randy currently serves as the Rapid Response and Emergency Management Program Manager for the Washington State Department of Agriculture. In addition to his day job, Randy serves on the Association of Food and Drug Officials Board of Directors.

Prior to his current role, he served as Rapid Response Coordinator and as a food and dairy field inspector in Eastern Washington. Before joining WSDA in 2009, Randy earned his MPH degree from the University of Washington while working as a clinical lab technician at the Fred Hutchinson Cancer Research Center HIV Vaccine Trials Network.

Randy currently lives in Spokane, WA with his wife Amanda, human daughter Evelyn, and four fur children.

Email: rtreadwell@agr.wa.gov

Shellfish Strategic Initiative: Hammersley Inlet Onsite Management and Water Quality.

In April 2017 Hammersley Inlet experienced an emergency closure for commercial shellfish harvesting due to multiple reports of norovirus

illnesses associated with oysters harvested in the inlet. In response to this closure Mason County Public Health's Water Quality division investigated possible causes for the contamination. MCPH's primary focus was Onsite Septic Systems as they relate to freshwater drainages flowing into Hammersley Inlet. By utilizing water sampling for Fecal Coliform, analyzing Optical Brightener Pads, conducting parcel surveys, creating a risk-based assessment for OSS, and completing dye studies. MCPH could not connect a failing septic system to the illnesses. MCPH was able to narrow the scope of the closure to three drainages and to 15 parcels. These three drainages did not produce positive Optical Brightener results, nor had any of the OSS reported operation and maintenance issues; leading us conclude that OSS did not trigger the emergency closure.

Katie Otañez is an Environmental Health Specialist for Mason County Public Health's Water Quality Program. Her projects are focused on non-point pollution identification and correction in areas with impaired water quality. Katie holds a Bachelor of Science in Natural Resource Sciences from Washington State University.

Email: kotanez@co.mason.wa.us

Occurrence of Foodborne Illness Risk Factors in Retail Restaurants, Grocery Stores and Schools within Benton and Franklin Counties

The Benton-Franklin Health District recently completed a baseline study of foodborne illness risk factors in food establishments within their jurisdiction. 224 facilities were assessed to identify the occurrence of five foodborne illness risk factors, and to study management practices as they relate to food safety control.

Study results established a baseline occurrence of the studied risk factors, and identified which management behaviors may factor into the likelihood of these risk factors to occur. Results, interventions, and lessons-learned will be shared to inform partners about foodborne risk factors, and aid those who will be conducting their own risk factor study.

Erin Hockaday has 13 years of experience with the Benton-Franklin Health District as an Environmental Health Specialist, and is currently serving as the Food Program technical lead. Erin graduated from Whitworth University in 2006 with a degree in Biology.

Email: erint@bfhd.wa.gov

Lars Richins graduated in 2009 from BYU with a degree in Biology. He has 5 years of experience in Environmental Health, starting at Grant County Health District, and then moving to the Benton-Franklin Health district in 2017. Lars is currently the Benton-Franklin Health District's Food Program Supervisor.

Email: larsr@bfhd.wa.gov

Engaging the Public to Track Tick Populations in Washington State

Between 2010 and 2018, over 1,600 ticks were submitted to the Washington State Department of Health (WA DOH) for identification. A completed WA DOH-required data collection form was included with each tick. Ticks were identified to species and results were emailed to submitters along with tick-borne disease information relative to the species. Ticks were sent to WA DOH throughout the year with March through May being peak submission months. *Dermacentor variabilis* and *Ixodes pacificus* were the predominate species submitted. Passive tick surveillance via public submissions has provided valuable, species-specific information on when and where people most commonly encounter ticks in Washington State.

Liz Dykstra is the Public Health Entomologist for the Washington State Dept. of Health. She serves as the Lead Investigator for the state's tick surveillance project.

Email: elizabeth.dykstra@doh.wa.gov

NW Pediatric Environmental Health Specialty Unit (PEHSU)

PEHSU's mission is to improve child health outcomes through consultation and education on harmful environmental exposures. Established in 1997 and funded by the CDC and EPA, UW PEHSU's

team includes environmental medicine pediatricians, nurses and an exposure scientist. The PEHSU trains health professionals on environmental health topics and also responds to requests for assistance. PEHSU specialists provide information and resources on environmental contaminants and work with agencies to address children's environmental health issues in homes, schools and communities. PEHSU experts also serve as technical advisors on local, regional and national committees convened to develop evidence-based public health policies and guidelines.

Nancy Beaudet is an exposure scientist with the NW Pediatric Environmental Health Specialty Unit (PEHSU) and the Field Research and Consultation Group (FRCG) at the UW. She characterizes exposures for and responds to PEHSU inquiries, and provides leadership on PEHSU projects. For the FRCG she provides workplace consultation services.

Ms. Beaudet is a certified industrial hygienist and a graduate of the UW Industrial Hygiene and Safety program. Her past experience includes characterizing workplace exposures for the UW Occupational Medicine Clinic and conducting compliance inspections for the Washington State Department of Labor and Industries and OSHA.

Email: beaudet@uw.edu

Wildfire Smoke Health Risk Communication Needs in Clallam County, WA

The objective of this study was to assess the wildfire smoke health-risk communication needs of organizations in Clallam County. Communication needs were assessed by surveying organizations that serve sensitive populations. In addition, a low-cost air monitor was installed to track summer time air quality. The majority of organizations responding to the survey reported that they had not received information about the health risks of wildfire smoke. Organizations reported that they have the capacity and are willing to communicate the health-risks of wildfire smoke. Analysis of air data shows the low-cost monitor may be a useful device in determining air quality conditions. Future wildfire smoke events in Clallam County require public health interventions to address health-risk communication needs of sensitive populations. Implementation of a low-cost air

monitor network accessible by the public is a promising prospect to protect sensitive populations in Clallam County.

Rico Gonzalez: I am a senior undergraduate at the University of Washington Seattle. I am majoring in Environmental health and plan on pursuing a career in industrial hygiene upon graduation. My professional experience stems from an industrial setting, along with experience in rural environmental health and research. I plan to further my academic career after getting work experience by pursuing a degree in toxicology, which would enable me to work to protect people from environmental hazards.

Email: gorico@uw.edu

Mortality Associated with Wildfire Smoke Exposure in Washington State, 2006-2017

Wildfire events are increasing in prevalence in the western United States. Research has found mixed results on the association between wildfire smoke exposure and mortality. We tested for an association between exposure to PM_{2.5} on wildfire smoke days, and increased odds of non-traumatic causes of mortality in Washington State. Wildfire smoke exposure is characterized by daily average PM_{2.5} concentrations on wildfire smoke days, June-September for 2006-2017. We employed a case crossover study design to estimate the association with mortality. After adjusting for humidex, the odds of non-traumatic mortality were 1.0% greater at lag day 0 (0.98, 1.04), 1.3% greater at lag day 1 (1.00, 1.02), and 14% greater for COPD (1.02, 1.26) on wildfire smoke days compared to regular days. This study is the first to examine wildfire smoke and mortality in Washington, and will help inform state and local risk communication and decision-making during future wildfire smoke events.

Annie Doubleday is a Master's in Public Health student in the Department of Environmental and Occupational Health Sciences at the University of Washington. She studies the health effects associated with wildfire smoke exposure, as well as other health impacts associated with disasters and climate change.

Email: doublededa@uw.edu

Wildfire Smoke Risk Communication Efficacy: Using the Extended Parallel Process Model to Summarize Washington State's 2018 Statewide Smoke Event Public Health Messaging

Exposure to wildfire smoke has been linked to adverse health outcomes. Effectively communicating these effects and the interventions used to reduce exposure is important for reducing adverse health outcomes during smoke events. We conducted a content analysis of wildfire smoke risk information communicated by local and state government organizations and by mainstream media during August 2018's wildfire season. Common messages about interventions, vulnerable populations, and trusted sources of public health information were identified. Government-released messages had a higher percentage of content containing both risk and efficacy information than media-released messages. Information pertaining to vulnerable populations and recommended interventions was consistent between audiences. With these results, we hope LHJs will better understand their wildfire smoke risk message reach and identify ways to improve their standing as trusted sources of information in their communities.

Justine Marecaux is a senior in the Environmental and Occupational Health Department at the University of Washington. Justine is originally from Los Angeles but was drawn to UW's prioritization of research and public health. Justine believes Environmental Health to be one of the most rewarding fields, and strives to represent vulnerable populations and underrepresented communities throughout her academic and professional path. Her passion for exposure science and effective risk communication led to her involvement in this project. At the end of this academic year, she hopes to continue researching environmental toxins and help develop risk management and safety programs throughout her career.

Email: justine.marecaux@gmail.com

UW Environmental Health Internship Program

This poster provides information about the University of Washington's Department of Environmental and Occupational Health Sciences, specifically our undergraduate internship program. Learn about the work our interns do for their host organizations, internship best practices, and the benefits of hiring an intern.

The Department of Environmental and Occupational Health

Sciences is part of the School of Public Health at the University of Washington. Our mission: The Department of Environmental and Occupational Health Sciences aims to create healthy, safe and sustainable communities and

workplaces by: Providing outstanding education to students and professionals, discovering how the environment affects people's health and well-being, conducting research to prevent occupational injury and illness, serving the citizens, workers and employers across Washington state and the Northwest Promoting healthy communities and workplaces locally, nationally, and globally.

Email: hayleyl@uw.edu

Health Space: Evaluating the Digital Inspection System's Impact on our Food Safety Program

In February 2018, Grays Harbor County Environmental Health's Food Safety Program transitioned to a digital inspection reporting system, Health Space. After over a year of implementation, Health Space has increased our ability to conduct food safety inspections efficiently, restructure enforcement policies, provide up-to-date data to the public, and reduce administrative duties of inspectors. Our evaluation reflects the strengths and opportunities of Health Space and how the program continues to evolve within the Environmental Health Division.

Haley Furstenwerth is an Environmental Health Specialist with the Grays Harbor County Environmental Health Division located in Montesano, WA. She has worked in the Food Safety Program for three years. Her work includes inspecting, educating, and enforcing food safety in food establishments throughout the county. Specifically,

she maintains relationships with local and state officials, conducts foodborne illness investigations, improves program development to reflect current county and state regulations, conduct plan reviews of food establishments, and communicates current food safety principles to the community.

Email: hfurstenwerth@co.grays-harbor.wa.us

Health Risk Awareness of Vibrio Vulnificus

DOH and the Washington State Department of Fish and Wildlife advertise beach closures and advisories associated with VP both online and through signage to keep the public well informed of potential health risks. Unfortunately, illnesses from VP continue to increase in Washington. There is also a rising concern that increased ocean temperatures could lead to an increased number of cases of VV, which is more commonly found in the south and southeast US in warmer tropical waters. Cases of VV have been identified sporadically in recent years with one verified case reported in 2018 in Washington State. For the purpose of prevention, I propose planning for potential increase in cases of VV, while also sharing VV awareness to the public. Tina Hudson is a second year Master of Public Health student at Bastyr University in Kenmore, Washington.

Tina received her Bachelor Degree in Nutrition Science at Kaplan University in 2016 prior to her acceptance into Bastyr's Graduate Degree program in 2017. Tina successfully completed her practicum experience at Washington State Department of Health (DOH) last summer and is currently completing her capstone project at DOH.

Email: tina.hudson@bastyr.edu

Arsenic in St. Mary's County Drinking Water

Arsenic is a metalloid that negatively affects the skin, liver, gastrointestinal tract, and respiratory and nervous systems. It is also a human carcinogen and its presence in drinking water is regulated by the Environmental Protection Agency (EPA) to 10 parts per billion (ppb). In St. Mary's County, Maryland, people obtain their

water from aquifers containing arsenic. The goal of this project was to identify locations of naturally occurring high arsenic and to investigate the relationship between well depth and arsenic concentration. We determined arsenic hotspots using the ArcGIS Getis-Ord G_i^* Statistic HotSpot tool. We used SAS software to assess associations between well depth and arsenic concentrations. For the regions identified as hotspots, we recommend that people use either point-of-use or house-wide treatment systems that remove arsenic. In the future, we hope to use ArcGIS mapping to prioritize hotspot areas for testing of existing wells predating the 2001 EPA regulation.

Silvia Rus: I am a fourth-year student in the Department of Environmental and Occupational Health Sciences and in the Interdisciplinary Honors Program. Previously, I participated in the National Environmental Public Health Internship Program, where I used ArcGIS to map arsenic levels in drinking water in St. Mary's County. This experience augmented my interest in the vulnerability of certain demographic groups and I hope to work in a setting where I can collaborate and help such groups.

Email: silvia.antonio96@gmail.com

The Impacts of Sea Level Rise on Septic Systems

Climate change has caused sea level rise throughout the world and this saturation of the soils has increased failure rates of septic systems and caused groundwater contamination. This poster will review the research that has been done regarding this problem and what potential changes we can make in the future to alleviate the impacts this will have on the environment and our health.

Kyla Leyendekker is a Health & Environmental Investigator for the On-site Sewage Systems program at Seattle and King County Public Health. She does permitting for on-site sewage systems throughout King County, which includes new construction, building remodels, and repairs to existing septic systems. She enjoys spending time outdoors and cares about the environment deeply.

The Design, Implementation, and Evaluation of Communication Tools to Improve N95 Mask Fit and Use in Wildfire Smoke Events
N95 respirator masks can be worn to filter out fine particulate matter

from wildfire smoke, helping protect against respiratory health effects. However, as found in a survey of 88 participants in Okanogan County, many are unaware of how to properly fit and use an N95 mask and communication tools are needed to address this concern. Based on previous studies on video-education effectiveness, it was hypothesized that an N95 mask instructional video could help educate the lay-public. Using semi-structured key informant interviews, a video-content needs assessment was conducted to identify content needs for a video. A Knowledge, Attitude, and Practice (KAP) survey, was created to assess the video's knowledge transference, and effect on attitudes and commitment to practicing N95 mask use. The KAP survey results indicate the video enhanced the participants' knowledge and attitudes of increased ease of use and mask effectiveness.

Katie Kern is a co-author of this poster.

Veda Ting is a senior majoring in Environmental Health and Biochemistry at the University of Washington. She is currently working as an Environmental Health Intern at Vishay Transducers, Ltd. in Kent, WA and previously interned at Public Health – Seattle & King County's Preparedness Section as part of the University of Washington's EHREP program last summer.

Email: vedating@uw.edu

Developing Materials to Promote Private Well Water Testing in Latinx Communities

Washington state does not regulate private wells after construction, leaving approximately one million residents responsible for testing and treating their well water. With low rates of well water testing in Latinx communities, effective testing promotion is critical. We aimed to identify effective communication methods for well water quality in Latinx communities and develop messages to promote testing. We conducted four focus groups (n=37, 7-11 per group) in the Lower Yakima Valley, WA in Spanish and English. Participants preferred short, visual materials with strong health messages, and emphasized the importance of avoiding stereotypes. Participants responded positively to data visualizations that were location specific. We created

messages that trigger suspicion of well water, invoke a duty to protect family, and provide action information. These messages were based on our previous research of testing barriers. These conclusions can help promote testing in other Latinx communities.

Kori VanDerGeest is a second-year graduate student at the University of Washington, pursuing her Master of Public Health (MPH) degree in the Department of Environmental and Occupational Health Sciences. Her research interests include disparities in drinking water access, health disparities experienced by Latinx agricultural communities, and community-engaged research. Previously she worked as an environmental engineer, regulating air pollution emissions from petrochemical facilities in Texas. After graduation, VanDerGeest hopes to work in a county or state health department, reducing disparities in environmental health.

Email: kvanderg@uw.edu

Elizabeth Torres is the research coordinator at El Proyecto Bienestar, an environmental and occupational health partnership in the Yakima Valley. She is a bilingual, bicultural Latina woman with a proven record of conducting community-based participatory research. She is interested in working with low-income farm worker communities for the purpose of improving access to health care and raising awareness of preventive measures to reduce the onset of chronic diseases. She has worked in research on pediatric asthma in agricultural communities, sexual harassment of Mexican women farmworkers, and Spanish-language health communication.

Email: etorres@knda.org

Effects of Prenatal Exposure to Domoic Acid on Infant Cognitive Development in a Nonhuman Primate Model

Domoic acid (DA) is an increasingly common marine neurotoxin that can be ingested by humans in contaminated seafood. Regulations have been set in place to prevent single, high dose exposure to DA, but the health impacts from low-level exposures are not well

understood. Although research in adult humans and rodents exposed to DA demonstrate adverse effects on memory and learning, the neurobehavioral effects of exposure on developing infants have not been well studied. Using a highly translatable model, we sought to address this gap in knowledge by testing the cognition of 27 *Macaca fascicularis* infants prenatally exposed to 0, 0.075 and, 0.15 mg/kg/day DA as part of a larger study. Results from learning testing up to one year of age indicate no statistically significant differences between dose groups ($p < 0.05$). Ongoing testing is underway to study the long-term effects of DA exposure on more challenging tests of learning and memory.

Tianai Li is a second year undergraduate student at the University of Washington pursuing a major in environmental health and a minor in philosophy. She joined the Washington National Primate Research Center since November 2017, and has been working with Dr. Thomas Burbacher and Dr. Kimberly Grant on a project to evaluate the effects of prenatal exposure to a neurotoxin (domoic acid) on infants using macaque model.

Email: litianai@uw.edu



AEC PLANNING COMMITTEE

AEC CHAIR: Liz Coleman

AEC Co-CHAIR: Jamie Zorich

AUDIO/VISUAL

Laura Homan, co-chair

Lynn Schneider, co-chair

Gary Holt

FACILITIES

Holly Myers, chair

Jerry Caird

Rob Eastman

Ryan Ibach

INTERNATIONAL HEALTH

Ashlee-Rose Ferguson

PUBLICATIONS

Eric Evans

Dayna Katula

LOGO / BAGS / GOODIES

Dayna Katula

WEB PAGE

Megan McNelly

SPEAKER COMMITTEE

Nancy Bernard, co-chair

Susan Shelton, co-chair

Anna Fretheim

Greg Tanbara

MISCELLANEOUS

Mark Toy

MARKETING

Shawn Ultican, chair

AWARDS

Larry French, chair
Tania Busch Isaksen
James Rivard
Chuck Treser

MODERATOR

Jeremy Simmons, chair
Rob Eastman
Randy Freeby
Tom Kunesh
Chuck Treser

STUDENT COORDINATOR

Tania Busch Isaksen, Chair
Emily Hovis

REGISTRATION

Megan McNelly, chair
Rob Eastman
Dayna Katula

PHOTOGRAPHER

Brian Walsh

SOCIAL

Jodie Holdcroft, chair
Holly Myers
Ryan Ibach

WSEHA

Joe Graham
Tom Kunesh
Mike Young

WSEHA BOARD OF DIRECTORS

PRESIDENT

Mike Young
myoung@snohd.org

PRESIDENT-ELECT

Tom Kunesh
tkunesh@co.whatcom.wa.us

IMMEDIATE PAST PRESIDENT

Joe Graham

REGIONAL VICE PRESIDENTS

CENTRAL REGION

James Rivard
Jriv461@ecy.wa.gov

EASTERN REGION

Chris Skidmore
Chris.Skidmore@co.whitman.wa.us

NORTHWEST REGION

Vacant

SECRETARY

Jennifer Garcelon
jgarcelon@co.clallam.wa.us

TREASURER

Jesse Smith
smithj@co.cowlitz.wa.us

EXECUTIVE SECRETARY

Megan McNelly
megan@wseha.org

NEHA REPRESENTATIVE

Matt Reighter
mreighte@starbucks.com

OLYMPIC REGION

Jodie Holdcroft
Jodie.holdcroft@kitsappublichealth.org

SOUTHWEST REGION

Jeremy Simmons
Jeremy.simmons@doh.wa.gov



2019 WSEHA Conference

Thank you!

www.wseha.org