

Waterworks School 2019



Water....Protect it! Respect it!

Session Schedule and Descriptions

OESAC Approved #3923

June 18-20, 2019



American Water Works Association
Pacific Northwest Section
Northwest Oregon Subsection

**Tour of
Lake Oswego Treatment Plant
Tuesday, June 18, 2019
8am-12pm**

Pre-registration required for the tour

Sign up at registration desk in Community Center ~Fireside Lounge

Meet at turn around in front of Neimeyer Center

Vendor's Day

Wednesday, June 19, 2019

*****Building Change*****

Gregory Forum

9am-3pm

Meet vendors

Learn about new & exciting products

Win prizes

Earn CEUS

Participate in the Equipment Rodeo!

The Equipment Rodeo will be stationed in the parking lot near Gregory Forum.

Show your skills in using excavators and back hoes!



Tuesday, June 18, 2019

| TIME | SESSION | Section 1 Supervision & Leadership McLoughlin Auditorium | Section 2 Water Quality & Treatment P132 | Section 3 Distribution & Maintenance P101 | Section 4 Basic Waterworks Training Pauling Center P131 |
|-------------|--|--|--|--|---|
| 7:00-8:30 | REGISTRATION Community Center, Fireside Lounge - Coffee, muffins, donuts and fruit | | | | |
| 8:30-9:00 | OPENING CERMEONY | | | | |
| 9:00-10:00 | 1 | KEYNOTE SPEAKER Chief Mike Duyck~Tualatin Valley Fire & Rescue Hit by the Stupid Truck LOCATION: Neimeyer Center—Osterman Theater | | | |
| 10:00-10:20 | BREAK - Coffee/Tea/Soda - Donuts, fruit & coffee –Community Center | | | | |
| 10:20-11:20 | 2 | *Active Shooter Emergency Response Training Part 1 <i>Ray Johnson City of The Dalles</i> | Active Shooter Emergency Response Training Part 1 <i>Ray Johnson City of The Dalles</i> | Drinking Water Regulations and Basics <i>Michelle Byrd Oregon Health Authority</i> | *Pump Parts & Terminology <i>Ron Aceto Cornell Pump</i> |
| 11:25-12:25 | 3 | *Active Shooter Emergency Response Training Part 2 <i>Ray Johnson City of The Dalles</i> | Active Shooter Emergency Response Training Part 2 <i>Ray Johnson City of The Dalles</i> | Water Quality Basics <i>KT Labadie Portland Water Bureau</i> | *How to Read a Pump Curve <i>Ron Aceto Cornell Pump</i> |
| 12:25-1:10 | LUNCH – COMMUNITY CENTER | | | | |
| 1:10-2:10 | 4 | Planned Assessment and Rehabilitation of Water Systems <i>Gregory Howells Mueller Co.</i> | Blue Green Algae Control from Source to Tap <i>Lee Odell Jacobs</i> | Progressive Design Build <i>Nick Agustus Tualatin Valley Water District</i> | Basic Hydraulics <i>Ron Aceto Cornell Pump</i> |
| 2:15-3:15 | 5 | Preparedness for Water Providers <i>Greg Ramirez Clackamas Fire District #1</i> | Coagulation Theory & Jar Testing Practicum – Part 1 <i>Anthony Greville Mark Carey Jennifer Edlund Waterhouse Environmental Services Corporation Vancouver, BC</i> | Skyview Acres DBP Conundrum <i>David Jacob Hydra Engineering</i> | Pump Installation & Care <i>Dave Young Cornell Pump</i> |
| 3:15-3:30 | BREAK - Coffee/Tea/Soda - Community Center | | | | |
| 3:30-4:30 | 6 | Emergency Preparedness "Don't Forget the Water" <i>Donn Bunyard Clackamas River Water</i> | Coagulation Theory & Jar Testing Practicum – Part 2 <i>Anthony Greville Mark Carey Jennifer Edlund Waterhouse Environmental Services Corporation Vancouver, BC</i> | Rhododendron and the Surface Water Treatment Rule <i>David Jacob Hydra Engineering</i> | *VFD's <i>Jim Joyce PumpTech</i> |

*OESAC Approved for Wastewater CEUs

Wednesday, June 19, 2019

| TIME | SESSION | Section 1 Supervision & Leadership McLoughlin Auditorium | Section 2 Water Quality & Treatment Gregory Forum C | Section 3 Distribution & Maintenance Gregory Forum A & B | Section 4 Basic Waterworks Training Pauling Center P131 |
|-------------|---|--|--|--|---|
| 8:00-9:00 | 7 | It's Time to Get Your Kits Together (and Other Projects of the Regional Water Providers Consortium) <i>Bonny Cushman Regional Water Providers Consortium</i> | *pH 101 Monitoring and Reporting <i>Frank Spevak Emerson Automation Solutions</i> | Water System Surveys <i>Michelle Byrd Oregon Health Authority</i> | Last Call at the Oasis <i>Movie</i> |
| 9:05-10:05 | 8 | Vendor Display | Reagentless Free Chlorine Analysis <i>Frank Spevak Emerson Automation Solutions</i> | Pressure Regulators <i>Ron Kemper Tualatin Valley Water District</i> | On-site Hypochlorite Generation as an Alternative to Bulk Hypo <i>Thomas Gazdik TMG Services</i> |
| 10:05-10:20 | <i>BREAK - Coffee/Tea/Soda - Donuts, fruit & coffee - Gregory Forum</i> | | | | |
| 10:20-11:20 | 9 | Chloramine Conversion <i>Lee Odell Jacobs</i> | Vendor Display | Complicated Shut Downs <i>Ryan Smith Tualatin Valley Water District</i> | *Math for Operators <i>Jim Nurmi Clackamas Community College</i> |
| 11:25-12:25 | 10 | Global Drinking Water Technologist <i>Lee Odell Jacobs</i> | PWB Filtration Pilot Study <i>Mac Gifford Portland Water Bureau</i> | Vendor Display | Preparing for AMI <i>Pat Hart Ferguson</i> |
| 12:25-1:10 | <i>LUNCH - Gregory Forum</i> | | | | |
| 1:10-2:10 | 11 | Listening for Life <i>Dennis Morrow Janus Youth Program</i> | Theory, Applications and Troubleshooting of UV Systems <i>Tyler Kane Carollo</i> | The Missing Valve <i>Peter Boone Tualatin Valley Water District</i> | Vendor Display |
| 2:15-3:15 | 12 | Gender in the Workplace <i>Dennis Morrow Janus Youth Program</i> | Emerging Water Treatment Practices <i>Tyler Kane Carollo</i> | The Willamette Water Supply Program's Approach to Project Safety and Health <i>Mike Jacobs Tualatin Valley Water District & Willamette Water Supply Program</i> | *CCC Environmental Learning Center Tour 1 <i>Jim Nurmi Clackamas Community College Limited to 15 Registration in Fireside</i> |
| 3:15-3:30 | <i>BREAK - Coffee/Tea/Soda - Gregory Forum</i> | | | | |
| 3:30-4:30 | 13 | Managing Conflict <i>Dennis Morrow Janus Youth Program</i> | *Chemicals in Water and Wastewater Applications <i>Jeff Zachman Cascade Columbia</i> | Operator Safety and Rescue: What to Expect When You Have to Call 911 <i>Peter Boone Tualatin Valley Fire & Rescue Mike Jacobs Tualatin Valley Water District</i> | Importance of PPE <i>Greg McDonald Ritz Safety</i> |

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Thursday, June 20, 2019

| TIME | SESSION | Section 1 Supervision & Leadership McLoughlin Auditorium | Section 2 Water Quality & Treatment Gregory Forum C | Section 3 Distribution & Maintenance Gregory Forum A & B | Section 4 Basic Waterworks Training Pauling Center P131 |
|-------------|---|---|---|---|---|
| 8:00-9:00 | 14 | Developing Water Utility "Betterment" Skills in the 21st Century: What's on the Horizon? <i>John Goodrich City of Tigard</i> | Optimizing a Sub-Fluidized Backwash Process <i>Evan Hofeld Oregon Health Authority</i> | Public Agency Work Zone Traffic Control <i>Tony Jobanek Oregon Department of Transportation</i> | Lab in a Box <i>Jim Nurmi Clackamas Community College</i> |
| 9:05-10:05 | 15 | How to Plan for Retirement, What I've Learned <i>Judy Ranton Retired Portland Water Bureau</i> | Fluoridation Basics <i>James Nusrala Oregon Health Authority</i> | | *Confined Space Safety <i>Eric Fullan City of Hillsboro</i> |
| 10:05-10:20 | <i>BREAK - Coffee/Tea/Soda - Donuts, fruit & coffee -Community Center</i> | | | | |
| 10:20-11:20 | 16 | Leadership and Team Building <i>Andrew Degner City of Gresham</i> | Joint Water Commission <i>Zach Bertz And/or Chris Wilson Joint Water Commission - City of Hillsboro</i> | Public Agency Work Zone Traffic Control <i>Continued</i> | *Confined Space Safety <i>Eric Fullan City of Hillsboro</i> |
| 11:25-12:25 | 17 | Commercial and Residential Assessments: Another Asset in a Comprehensive Water Management Portfolio~The Lake Oswego Experience <i>Kevin McCaleb City of Lake Oswego</i> | What is UPW (Ultrapure Water)? <i>Gregory Carr Clackamas Community College</i> | | *CCC Environmental Learning Center Tour 2 <i>Jim Nurmi Clackamas Community College Limited to 15 Registration in Fireside</i> |
| 12:25-1:10 | <i>LUNCH - Community Center</i> | | | | |
| 1:10-2:10 | 18 | Construction Communications <i>Marlys Mock TVWD Kimi Sloop Barney & Worth, Inc.</i> | Impacts of Water Quality on UPW <i>Gregory Carr Clackamas Community College</i> | Public Agency Work Zone Traffic Control <i>Continued</i> | CCC Tunnel Tour Group 1 <i>Rodney Osterhoudt Clackamas Community College Limited to 15 Registration in Fireside</i> |
| 2:15-3:15 | 19 | Why is a Cross Connection Control (CCC) Program Important? <i>Tina Dolan TVWD</i> | Regulatory Perspective of Cyanotoxins in Oregon <i>Gregg Baird Oregon Health Authority</i> | Seismic Stuff re: Willamette Water Supply Program (WWSP) <i>Mike Britch Willamette Water Supply Program</i> | CCC Tunnel Tour Group 2 <i>Rodney Osterhoudt Clackamas Community College Limited to 15 Registration in Fireside</i> |
| 3:15-3:30 | <i>BREAK - Coffee/Tea/Soda - Community Center</i> | | | | |
| 3:30-4:30 | 20 | Oregon's First Public Water System Algal Toxin Advisory - Lessons Learned <i>Lacey Goeres City of Salem</i> | Water System Disinfectant Conversion - Chlorine Gas to On-site Sodium Hypochlorite Generation <i>Patrick Craney City of Vancouver</i> | City of Fairview's AMR <i>Derrick Yates BMI</i> | Cyanotoxins and the Clackamas and Mckenzie Rivers <i>Kurt Carpenter USGS</i> |

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Section 1

Supervision & Leadership

Tuesday - June 18, 2019

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|----|-------------|--|
| #1 | 9:00-10:00 | <p>KEYNOTE SPEAKER Hit by the Stupid Truck <i>Chief Mike Duyck – Tualatin Valley Fire & Rescue</i></p> <p>If you've ever watched in agony as a colleague self-destructs publicly from their own behavior, you must wonder...what were they thinking? Were they hit by the stupid truck? Fire Chief Mike Duyck will delve into the causes that underlie self-destructive conduct that seems to belie reason and rational thinking - but in the end, hurts all of us even remotely affiliated with our respective professions. While painfully humorous, you will learn to spot at-risk patterns of conduct and gain insight into the difference between a lone event and symptomatic behaviors.</p> |
| #2 | 10:20-11:20 | <p>Active Shooter Emergency Response Training Part 1 <i>Ray Johnson ~ City of The Dalles</i></p> <p>Seventy-one percent of active shooter events happen in the workplace. Today you are 18 more times likely to encounter work place violence than a fire at work. Preparedness through planning, training and practice can save lives.OSHA regulations require all U.S. employers without exception to create an Emergency Action Plan for all hazards. Every management has the duty of care to keep personnel safe in any emergency. This training will cover how to assess your facilities security, the need for a written Active Shooter Emergency Plan, the elements included in the plan and how to train employees to follow the plan. The training will also include what to expect when first responders show up, how to establish reunification sites, conduct head counts and post incident responsibilities.</p> |
| #3 | 11:25-12:25 | <p>Active Shooter Emergency Response Training Part 2 <i>Continued</i></p> |
| #4 | 1:10-2:10 | <p>Planned Assessment and Rehabilitation of Water Systems <i>Gregory Howells ~ Mueller Co.</i></p> <p>This class is designed to help a water system manager understand the asset value for water distribution systems. Teaches how to use the historical information available to develop an assessment and management plan for a water system. This is an asset management approach to funding and managing a water system in a planned approach verse a reactionary style driven by system failures.</p> |
| #5 | 2:15-3:15 | <p>Preparedness for Water Providers <i>Greg Ramirez ~Clackamas Fire District #1</i></p> <p>Preparedness for Water Providers - Emergency Planning, NIMS Compliance and Integration of ICS into our day jobs, Grant Funding, Emergency Communications, and practical preparedness at home.</p> |
| #6 | 3:30-4:30 | <p>Emergency Preparedness – Don't Forget the Water <i>Don Bunyard ~ Clackamas River Water</i></p> <p>Preparedness for Water Providers - Incident Command System and integration into our day jobs, Emergency Equipment & Grant Funding, Emergency Communications, Emergency Planning, Risk & Resilience Assessments Components</p> |

Wednesday, June 19, 2019

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| #7 | 8:00-9:00 | <p>It's Time to Get Your Kits Together (and Other Projects of the Regional Water Providers Consortium) <i>Bonny Cushman ~ Regional Water Providers</i></p> <p>The Regional Water Providers Consortium and its members have been working collaboratively since 1997 to ensure the region has a long term, reliable, efficient, and safe water supply. The Consortium's programs focus on conservation emergency preparedness, and regional coordination. Consortium members provide about 85 percent of the Portland metropolitan area's drinking water. This presentation will give background information about the consortium and its work including public outreach, media campaigns equipment exercises and drills our interconnections geodatabase, and more.</p> |
| #8 | 9:05-10:05 | <p>VENDOR DISPLAY</p> |
| #9 | 10:20-11:20 | <p>Chloramine Conversion <i>Lee Odell ~ Jacobs</i></p> <p>Discussion of the conversion of distribution system disinfection from chlorine to chloramine and considerations for water quality, corrosion control, scale disruption and discoloration. A case study will be presented from Hilton Head SC.</p> |

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| #10 | 11:25-12:25 | Global Drinking Water Technologist <i>Lee Odell ~ Jacobs</i> Technology advances in manganese removal, arsenic removal and nitrate removal processes along with other less common groundwater treatment needs. Case studies from Clark Public Utilities, Prineville, OR, Cadiz, CA, and Hanford, WA will be presented. |
| #11 | 1:10-2:10 | Listening for Life <i>Dennis Morrow ~ Janus Youth Programs</i> Listening can be defined simply as “The unnatural act of verbally demonstrating to another person that he/she has been heard”. The good news: Listening skills are easy to define, easy to learn, and extraordinarily effective in both personal and professional relationships. The bad news, without training and practice, most of us go through life believing we are far better at listening than we truly are. This workshop will provide a simple, highly usable framework to increase the listening skills of participants. |
| #12 | 2:15-3:15 | Gender in the Workplace <i>Dennis Morrow ~ Janus Youth Programs</i> Fasten your seatbelts for the wildest ride in the park. This workshop will look at both biological and brain differences between males and females and how these differences impact on everything from parenting to school to marriage to work. Find out why boys are more like monkeys than they are like girls, and why the simple nod of the head can lead to massive communication issues at work. Guaranteed to challenge, educate, and entertain. |
| #13 | 3:30-4:30 | Managing Conflict <i>Dennis Morrow ~ Janus Youth Programs</i> Conflict between humans is natural but conflict resolution is not. This workshop will examine the origins of conflict, the conflict process, and strategies to facilitate successful resolution. Practical information that reaches beyond the workplace to friends, parents, and marriage. |
| Thursday, June 20, 2019 | | |
| #14 | 8:00-9:00 | Developing Water Utility “Betterment” Skills in the 21st Century: What’s on the Horizon? <i>John Goodrich ~ City of Tigard</i> This topic will cover some of the issues facing water utility workers as they develop for future career opportunities within the water utility agencies serving the needs of the public. The goal of this session is to answer questions relating to “how can I prepare?” to meet these challenges. Certification, College studies, technical advancement, public service, on-the-job projects and other opportunities all provide challenges regarding life balance, actual opportunity, and career professionalism. Come explore some of the “betterment” opportunities that may be on the horizon regarding our water utility future in asset management, supervisory, and managerial roles. Are some of the opportunities of the past no longer viable? Along the way, we will provide the “informational” resources for those that wish to expand their knowledge and horizons on what are core competencies, an effective utility management culture, and what is the overall objective of delivering best service related to drinking water. |
| #15 | 9:05-10:05 | How to Plan For Retirement, What I've Learned <i>Judi Ranton ~ Retired ~ Portland Water Bureau</i> Preparing for retirement in these uncertain times can be difficult. How will you meet all of your financial obligations, especially ever growing medical costs, which seems to be the biggest impediment to retirement for people before Medicare kicks in, and even after. Judi Ranton planned for her retirement and will share strategies to prepare for the next adventure, making post career times enriching and doable. |
| #16 | 10:20-11:20 | Leadership and Team Building <i>Andrew Degner ~ City of Gresham</i> A practical case study demonstrating how a supervisor who is joining a new organization can immediately position themselves as a leader and begin the team building process using a few simple supervisory techniques. |
| #17 | 11:25-12:25 | Commercial and Residential Assessments: Another Asset In a Comprehensive Water Management Portfolio~The Lake Oswego Experience <i>Kevin McCaleb ~ City of Lake Oswego</i> Incorporating broad spectrum best management practices into conservation programs. Connecting water and energy, non-point source pollution education and tips to help customers become better stewards of water. |
| #18 | 1:10-2:10 | Construction Communications <i>Marlys Mock ~ TVWD & Kimi Sloop ~ Barney & Worth, Inc.</i> The presentation will cover outreach and communication leading up to and during construction. Emphasis will be placed on the importance of honesty, consistent messaging, and realistic timeframes to help neighbors cope and adjust to short and long-term construction activities. |

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| #19 | 2:15-3:15 | <p>Why is a Cross Connection Control (CCC) Program Important? <i>Tina Dolan ~ Tualatin Valley Water District</i> OAR's require backflow assemblies to be tested annually. How and why should the water purveyor work with the testers performing this work. This presentation will include the importance of a CCC program, communication in and outside of your organization, accountability of the tester and importance of accurate reporting to include new technologies to record and manage data.</p> |
| #20 | 3:30-4:30 | <p>Oregon's First Public Water System Algal Toxin Advisory – Lessons Learned <i>Lacey Goeres ~ City of Salem</i> Algal toxins that break through water treatment can significantly disrupt the delivery of drinking water, as Salem, Oregon and Toledo, Ohio have experienced in recent years. Although monitoring for algal toxins is not currently required by the Safe Drinking Water Act, as part of UCMR4 many utilities will be required to sample their finished water for multiple algal toxins. Many water systems in Oregon that serve surface water are also required by a recent Oregon rule to monitor for algal toxins.</p> <p>A comprehensive overview of algal toxin management, including source water management and monitoring, methods of analysis, and treatment options. Real-world experiences from managing the algal toxin events in both Salem, Oregon and Toledo, Ohio will be presented. Guidance on public communication of algal toxin health risks will also be presented.</p> |

Section 2

Water Quality & Treatment

Tuesday, June 18, 2019

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| #1 | 9:00-10:00 | <p>KEYNOTE SPEAKER Hit by the Stupid Truck <i>Chief Mike Duyck – Tualatin Valley Fire & Rescue</i> If you've ever watched in agony as a colleague self-destructs publicly from their own behavior, you must wonder...what were they thinking? Were they hit by the stupid truck? Fire Chief Mike Duyck will delve into the causes that underlie self-destructive conduct that seems to belie reason and rational thinking - but in the end, hurts all of us even remotely affiliated with our respective professions. While painfully humorous, you will learn to spot at-risk patterns of conduct and gain insight into the difference between a lone event and symptomatic behaviors.</p> |
| #2 | 10:20-11:20 | <p>Active Shooter Emergency Response Training Part 1 <i>Ray Johnson ~ City of The Dalles</i> Seventy-one percent of active shooter events happen in the workplace. Today you are 18 more times likely to encounter work place violence than a fire at work. Preparedness through planning, training and practice can save lives.OSHA regulations require all U.S. employers without exception to create an Emergency Action Plan for all hazards. Every management has the duty of care to keep personnel safe in any emergency. This training will cover how to assess your facilities security, the need for a written Active Shooter Emergency Plan, the elements included in the plan and how to train employees to follow the plan. The training will also include what to expect when first responders show up, how to establish reunification sites, conduct head counts and post incident responsibilities.</p> |
| #3 | 11:25-12:25 | <p>Active Shooter Emergency Response Training Part 2</p> |
| #4 | 1:10-2:10 | <p>Blue Green Algae Control from Source to Tap <i>Lee Odell ~ Jacobs</i> This presentation will draw from several algal control projects including Bellingham, WA, Hamilton ON, Twin Oaks, CA and Columbus, OH to show practical plant applications to control algal cells, and algal metabolites including geosmin, MIB and algal toxins. Methods demonstrated will include dissolved air flotation, ozone oxidation, powdered activated carbon adsorption and biological filtration. Source water control using hypolimnetic oxygenation and advanced monitoring techniques will also be presented.</p> |
| #5 | 2:15-3:15 | <p>Coagulation Theory and Jar Testing Practicum - Part 1 <i>Anthony Greville, Mark Carey, Jennifer Edlund</i> <i>Waterhouse Environmental Services Corporation (Vacouver, BC)</i> This course is designed to help operators better understand the coagulation and flocculation processes in their plant. We will discuss the theory and practice behind coagulation in a water plant, including the factors which affect the performance of inorganic coagulants used throughout the industry. An explanation of the difference between coagulant, coagulant aid polymers and flocculants will be examined, along with conditions and processes where they are most effective. A simplified jar test procedure will be reviewed, as well as a quicker "Cheaters" test which is a very helpful tool to be used "on the fly" while your plant is running. Once we have reviewed the theory of coagulation and jar testing, we will have an live jar testing demonstration to show the operators the effect each of these products will have on the final water quality.</p> |
| #6 | 3:30-4:30 | <p>Coagulation Theory and Jar Testing Practicum - Part 2</p> |

Wednesday, June 19, 2019

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| #7 | 8:00-9:00 | <p>pH 101 Monitoring and Reporting <i>Frank Spevak ~ Emerson Automation Solutions</i> The session of "pH 101" will introduce to those in attendance a better understand how in-process type sensors work, the different components in a combination sensor, process conditions that effect a sensor, how to properly calibrate and the effects of buffer solutions. It will also include a live demonstration of a two-point buffer calibration with an explanation of the terms "slope" and "offset".</p> |
| #8 | 9:05-10:05 | <p>Reagentless Free Chlorine Analysis <i>Frank Spevak ~ Emerson Automation Solutions</i> This session of "Reagentless Free Chlorine Analysis" will introduce to those in attendance a fundamental understanding of the different types of chlorine, the different methods to measure each and the effects to each from other variables such as temperature, pH, flow, pressure and contaminants.</p> |

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| #9 | 10:20-11:20 | VENDOR DISPLAY |
| #10 | 11:25-12:25 | PWB Filtration Pilot Study <i>Mac Gifford ~ Portland Water Bureau</i> Intentional management of biologically active filters leads to more fully harvesting its benefits and anticipating its tradeoffs. Pre-oxidation, choice of media, and backwashing procedures are some tools for successfully operating a biologically active filter. Pilot scale and full scale results show increased organics removal and reduced disinfection by product formation. |
| #11 | 1:10-2:10 | Theory, Applications and Troubleshooting of UV Systems <i>Tyler Kane ~ Carollo</i> This presentation will focus on the theory of UV disinfection, its practical use in water systems, and issues related to UV systems from an operational perspective. This discussion will include results from a nation-wide UV system audit and suggested best practices for maintaining UV systems. |
| #12 | 2:15-3:15 | Emerging Water Treatment Practices <i>Tyler Kane ~ Carollo</i> This presentation will detail practices that are being used to treat emerging contaminants, including algal toxins. Ozone, UV/AOP, and GAC will be discussed in their relation to treatment efficiency, operational considerations, and how they fit into the overall treatment process. |
| #13 | 3:30-4:30 | Chemicals in Water and Wastewater Applications <i>Jeff Zachman ~ Cascade Columbia</i> Jeff will discuss some of the various chemicals used in the water treatment process and their applications. Chlorine disinfection, pH control, fluoridation, taste & odor control, iron & manganese control and coagulants/flocculants are some of the topics that will be discussed. |
| Thursday, June 20, 2019 | | |
| #14 | 8:00-9:00 | Surface Water Treatment Optimization <i>Evan Hofeld ~ Oregon Health Authority</i> This presentation will cover tools to optimize backwash processes in rapid rate plants. Topics will include backwash optimization goals, filter-to-waste turbidity monitoring, backwash trough turbidity profiles, and implementing an extended terminal subfluidized wash process. |
| #15 | 9:05-10:05 | Community Water Fluoridation Basics <i>James Nusrala ~ Oregon Health Authority</i> Discuss the health benefits of community water fluoridation, fluoride facts and myths, and safety concerns. The presentation will cover the different options of fluoridation chemicals and feed equipment and pros and cons of each. He will also review the regulatory requirements in terms of maximum levels, monitoring, and reporting. |
| #16 | 10:20-11:20 | Joint Water Commission <i>Zac Bertz and/or Chris Wilson ~ Joint Water Commission ~ City of Hillsboro</i> Water reuse. |
| #17 | 11:25-12:25 | What is UPW (Ultrapure Water)? <i>Gregory Carr ~ Clackamas Community College</i> This talk with focus on the UPW Process that is used throughout the semi-conductor process for wafer and chip making. For this talk, it will focus on the UPW Process at Intel here in Oregon and how the water that is supplied from the drinking water facilities help this end user produce a valuable product. |
| #18 | 1:10-2:10 | Impacts of Water Quality on UPW <i>Gregory Carr ~ Clackamas Community College</i> This talk will focus on how incoming water quality and its many variations from the local water treatment facilities can impact and affect the front-end design and operation of a UPW water process. |
| #19 | 2:15-3:15 | Regulatory Perspective of Cyanotoxins in Oregon <i>Gregg Baird ~ Oregon Health Authority</i> This presentation will provide a background of HABs in Oregon, the development of temporary and permanent cyanotoxin monitoring rules, and review available resources for public water systems. |
| #20 | 3:30-4:30 | Water System Disinfectant Conversion - Chlorine Gas to On-site Sodium Hypochlorite Generation <i>Patrick Craney ~ City of Vancouver</i> The high cost of chlorine gas and safety risks associated with its use spurred many utilities to switch drinking water disinfection methods to sodium hypochlorite. This presentation highlights the City of Vancouver journey along that path. Reducing the safety risk with this switch does not come without a price: increased system complexity, higher operation costs and more maintenance demand. Four recent or planned treatment plant disinfection conversions have built an institutional knowledge that may help others contemplating on-site generation of sodium hypochlorite. |

Section 3 Distribution & Maintenance

Tuesday, June 17, 2019

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| #1 | 9:00-10:00 | <p>KEYNOTE SPEAKER Hit by the Stupid Truck <i>Chief Mike Duyck – Tualatin Valley Fire & Rescue</i> If you've ever watched in agony as a colleague self-destructs publicly from their own behavior, you must wonder...what were they thinking? Were they hit by the stupid truck? Fire Chief Mike Duyck will delve into the causes that underlie self-destructive conduct that seems to belie reason and rational thinking - but in the end, hurts all of us even remotely affiliated with our respective professions. While painfully humorous, you will learn to spot at-risk patterns of conduct and gain insight into the difference between a lone event and symptomatic behaviors.</p> |
| #2 | 10:20-11:20 | <p>Drinking Water Regulations and Basics <i>Michelle Byrd ~ Oregon Health Authority</i> This presentation provides an overview of the drinking water standards and requirements.</p> |
| #3 | 11:25-12:25 | <p>WQ Basics <i>KT Labadie ~ Portland Water Bureau</i> Many customers do not realize that maintaining water quality and pressure is a shared responsibility between water utilities and customers. While some water quality or pressure issues are caused by changes in the distribution system, many common water quality and pressure issues are caused by a customer's home plumbing. This presentation will cover the most common water quality and pressure issues, their causes, and best practices for communicating with customers.</p> |
| #4 | 1:10-2:10 | <p>Progressive Design Build <i>Nick Agustus ~ Tualatin Valley Water District</i> Tualatin Valley Water District is using an alternative project delivery method to deliver what has traditionally been a design, bid, build project. Owners, engineers and contractors should find value in this unique approach and how it might be applied to their organization. Design build is typically used for construction projects with opportunities for innovation which lead to cost savings. TVWD elected to replace an aging 5 million-gallon water tank with a new D-110 reservoir using a progressive design build approach. This presentation will provide an overview of the decision process to use alternative delivery as well as the contractor selection process.</p> |
| #5 | 2:15-3:15 | <p>Skyview Acres DBP Conundrum <i>David Jacob ~ Hydra Engineering</i> Skyview Acres Water Company (SAWC) is a small 80 customer water system. With new water source from City of Sandy's supply from the PWB, two problems occurred: 1. High Disinfection byproducts created by no longer chloraminating the water and 2: Corrosion of pipes due to the water no longer being treated with caustic to increase the pH. A pilot facility was built and tested during the first summer of operations which proved the concept. Installation of the treatment facilities and testing commenced at the rate the budget would allow. This presentation will focus on the design, construction and operation of the new treatment facility designed to reduce DBP treatment formation.</p> |
| #6 | 3:30-4:30 | <p>Rhododendron and the Surface Water Treatment Rule <i>David Jacob ~ Hydra Engineering</i> Rhododendron Water Association is small water system at the foot hills of Mt Hood. It serves 375 connections with a source of Henry Creek. The surface water treatment rule requires removal or inactivation of Giardia and Cryptosporidium. The low-tech solution selected to comply with the surface water treatment rule proved to have high operational costs. Slow sand was discounted in the original treatment selection due to the large land requirements and conventional filtration was discounted due to the high technical operational experience needed. A combination of sub scale slow sand and full scale cartridge allowed for a lower cost of operation while fitting in the current land boundaries. This presentation will review the design, construction and operation of the new treatment facility.</p> |

Wednesday, June 19, 2019

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| #7 | 8:00-9:00 | <p>Water System Surveys <i>Michelle Byrd ~ Oregon Health Authority</i> Water system surveys are required every three to five years to ensure safe drinking water and protect public health. This presentation reviews the essential elements of a water system survey including significant deficiencies, corrective action plans, and criteria to achieve outstanding performance.</p> |
| #8 | 9:05-10:05 | <p>Pressure Regulators <i>Ron Kemper ~ Tualatin Valley Water District</i> Ron Kemper has been a water works operator for over 20 years and specializes in pressure regulating and pressure reducing valves. PRV's are a critical component to any distribution system as they regulate and control water flow. Ron will demonstrate how to breakdown and rebuild a 2" PRV. Attendees will walk away with a better understanding of these mechanical devices.</p> |

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| #9 | 10:20-11:20 | Complicated Shut Downs <i>Ryan Smith ~ Tualatin Valley Water District</i> Practical approaches and lessons learned from large scale or complicated water system shutdowns, working through planned and unplanned events. |
| #10 | 11:25-12:25 | VENDOR DISPLAY |
| #11 | 1:10-2:10 | The Missing Valve <i>Peter Boone ~ Tualatin Valley Water District</i> After some standard work on a 24" pipeline near a reservoir, it was discovered that the pipeline was only allowing water to flow in one direction. This occurred in spring as water demands were increasing, and this issue threatened to have significant impacts on water system operations. The pipeline had very limited access and as-built information, but TVWD engineers and operators worked together to solve the mystery by designing and performing tests to narrow down the potential causes. The solution required even more ingenuity and teamwork between TVWD and several customers. This presentation will provide information to operators, engineers, and water system managers about how to diagnose and correct operational issues in a water system. It will demonstrate how a simple issue of trapped air in a water line can cause strange things to happen in a distribution system and why air relief valves are so important. This will also demonstrate the importance of working quickly and deliberately to diagnose issues before they cause serious impacts to a water system or its customers. |
| #12 | 2:15-3:15 | The Willamette Water Supply Program's Approach to Project Safety and Health <i>Mike Jacobs ~ Tualatin Valley Water District / Willamette Water Supply Program</i> This presentation includes an overview of the efforts by the Willamette Water Supply Program (WWSP) to implement a comprehensive safety and health program for staff, consultants, and contractors. The WWSP developed a project-specific safety and health plan. The plan establishes common expectations and requirements for project management team, provides safety-by-design guidelines that address constructability and on-going operation of facilities and includes enforceable contract requirements for design consultants and construction contractors. |
| #13 | 3:30-4:30 | Operator Safety and Rescue: What to Expect When You Have to Call 911 <i>Peter Boone, Mike Jacobs ~ RVWD, TVF&R</i> Operator safety is one of the primary considerations when planning and executing work. This presentation will review safe work practices for excavation, confined space, and work at heights. It will also describe the rescue process for accidents that occur during these types of work. Recently, TVWD has been partnering with TVF&R to conduct joint training exercises focused on excavation emergencies, trench collapses, confined space rescue and high angle rescue. This session will show footage from these exercises and explain how operators will be involved when a rescue is needed. Attendees will hear real-life stories about actual rescues and the lessons that were learned from these events. If TVFR is available to attend, we may get to see actual rescue tools and equipment. |
| Thursday, June 20, 2019 | | |
| #14 | 8:00-9:00 | Public Agency Work Zone Traffic Control <i>Tony Jobanek ~ Oregon Department of Transportation</i> |
| #15 | 9:05-10:05 | This class covers the basics of temporary traffic control for the protection of maintenance and utility work areas. The program covers Federal and State standards, including the fundamental principles of traffic control from both part VI of the MUTCD and the Oregon Temporary Traffic Control Handbook. 3 year flagger card awarded. (5 hours) Eligible for 0.5 wastewater CEUs. |
| #16 | 10:20-11:20 | |
| #17 | 11:25-12:25 | |
| #18 | 1:10-2:10 | |
| #19 | 2:15-3:15 | Seismic Stuff re: WWSP <i>Mike Britch ~ Willamette Water Supply Program</i> The Willamette Water Supply Program (WWSP) has been working to integrate seismic resiliency into its projects in a variety of ways. Projects include both pipelines and facilities. This resiliency thinking also extends into operational planning as well that is incorporated as part of the design. These types of activities are relatively uncommon in the water industry where constructive seismic standards and guidelines are scarce. This presentation describes how planning for seismic resiliency has been spread through different aspects of a project from initial conception, to design, into construction, and ultimately considered as part of long-term operational planning. |
| #20 | 3:30-4:30 | City of Fairview's AMR <i>Derrick Yates ~ BMI</i> This presentation will look at the City of Fairview's fully fixed-based automatic meter reading (AMR) system and the advantages of using automated metering technology. Their process will be broken down from start to finish detailing lessons learned along the way. |

Section 4 Basics

Tuesday, June 17, 2019

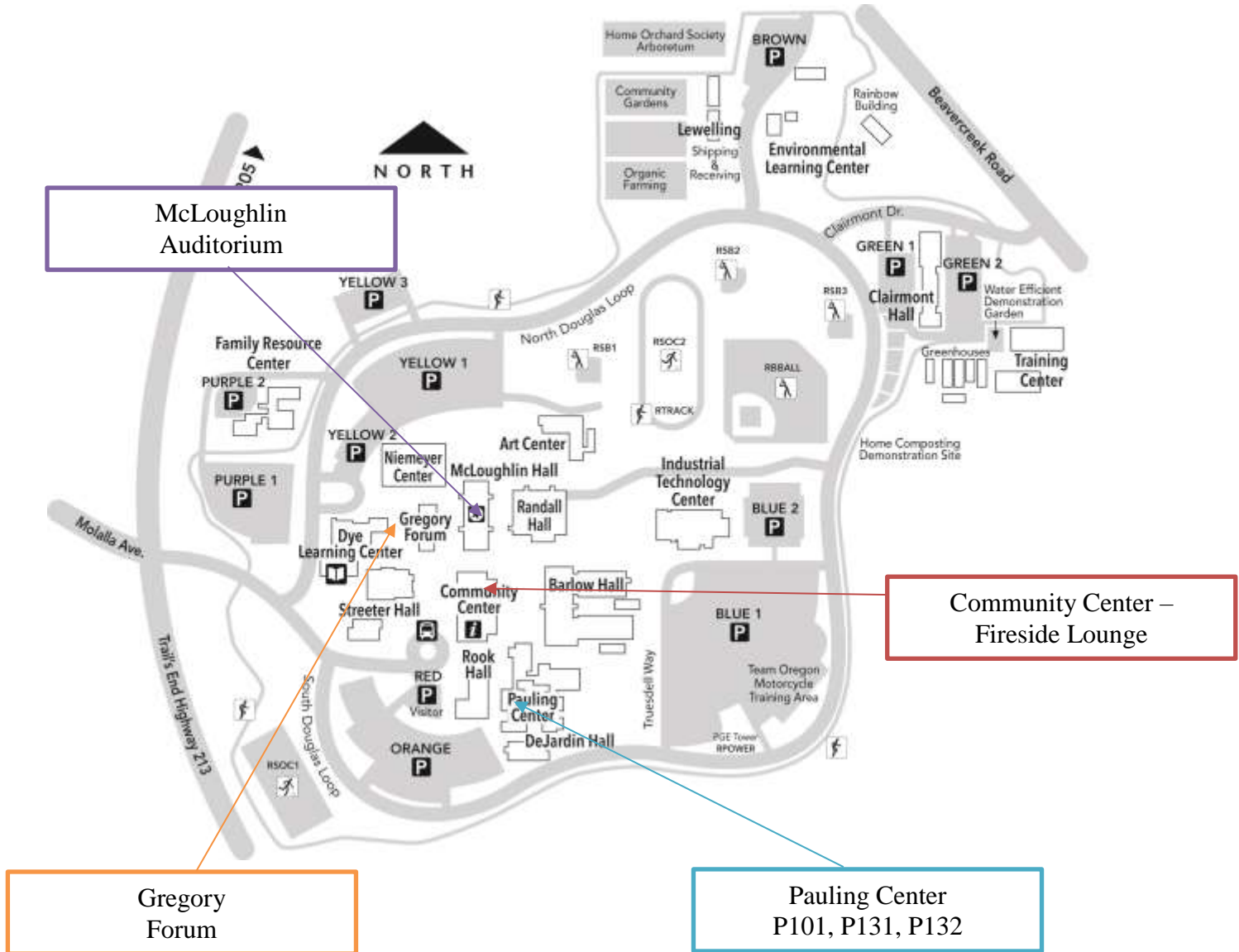
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| #1 | 9:00-10:00 | <p>KEYNOTE SPEAKER Hit by the Stupid Truck <i>Chief Mike Duyck – Tualatin Valley Fire & Rescue</i> If you've ever watched in agony as a colleague self-destructs publicly from their own behavior, you must wonder...what were they thinking? Were they hit by the stupid truck? Fire Chief Mike Duyck will delve into the causes that underlie self-destructive conduct that seems to belie reason and rational thinking - but in the end, hurts all of us even remotely affiliated with our respective professions. While painfully humorous, you will learn to spot at-risk patterns of conduct and gain insight into the difference between a lone event and symptomatic behaviors.</p> |
| #2 | 10:20-11:20 | <p>Pump Parts and Terminology <i>Ron Aceto ~ Cornell Pump</i> Come learn about pump basics! Get the basics on pumps and how they work within the water industry.</p> |
| #3 | 11:25-12:25 | <p>How to Read a Pump Curve <i>Ron Aceto ~ Cornell Pump</i> Learn how to interpret and maximize efficiency with your water pumps using pump curves!</p> |
| #4 | 1:10-2:10 | <p>Basic Hydraulics <i>Ron Aceto ~ Cornell Pump</i> Incorporates materials from Hydraulic Institute basic class; a Cornell PE worked on HI class design. Explains fluid concepts and hits on NPSHr/a.</p> |
| #5 | 2:15-3:15 | <p>Pump Installation and Care <i>Ron Aceto ~ Cornell Pump</i> Shows examples of good installation practice, with diagrams. Also shows photos of things NOT to do.</p> |
| #6 | 3:30-4:30 | <p>VFD's <i>Jim Joyce ~ PumpTech</i> Come learn about Variable Frequency Drive Pumps.</p> |

Wednesday, June 19, 2019

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| #7 | 8:00-9:00 | <p>Last Call at the Oasis <i>Movie</i> Water. It's the earth's most valuable resource. Our cities are powered by it, countless industries depend on it and all living things need it to survive. But it's very possible that in the near future, there won't be enough to sustain life on our planet. This movie sheds light on the vital role water plays in our lives, exposes the defects in the current system, shows communities already struggling with its ill effect and introduces us to individuals who are championing revolutionary solutions.</p> |
| #8 | 9:05-10:05 | <p>On-site Hypochlorite Generation as an Alternative to Bulk Hypo <i>Thomas Gzadik ~ TMG Services</i> This presentation takes a deeper look at the pro's and cons of onsite chlorine generation verses traditional onsite bulk storage.</p> |
| #9 | 10:20-11:20 | <p>Math for Operators <i>Jim Nurmi ~ Clackamas Community College</i> Freshen up your math skills. Learn how to solve math problems without "knowing" the correct equations. we will focus on waterworks math problems and solutions for the level 1 certification tests.</p> |
| #10 | 11:25-12:25 | <p>Preparing for AMI <i>Pat Hart ~ Ferguson</i> A look at factors to consider when looking to deploy an AMI system.</p> |
| #11 | 1:10-2:10 | <p>Vendor Display</p> |
| #12 | 2:15-3:15 | <p>ELC Tour 1 ~~~~You may only attend 1 session. <i>Jim Nurmi ~ Clackamas Community College</i> Come on an informal tour to see how CCC has renovated the Environmental Learning Center in order to improve the overall quality of the areas stormwater. The storm water from Oregon City High School as well as CCC runs through the ELC and is the head waters for Newell creek. Topics will include a discussion of the physical and chemical variables that are measured in regards to the water quality of stormwater. We will also discuss and show you how CCC has improved the overall water quality we are sending into Newell Creek. <i>Limited to 15 people.</i> <i>Sign up at registration – Fireside Lounge.</i></p> |

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| #13 | 3:30-4:30 | Importance of PPE <i>Greg McDonald ~ Ritz Safety</i> A look at the importance of using personal protective equipment. |
| Thursday, June 20, 2019 | | |
| #14 | 8:00-9:00 | Lab in Box <i>Jim Nurmi ~ Clackamas Community College</i> Learn to analyze typical water parameters using current technologies used in the water industry. Come prepared to do some water chemistry! |
| #15 #16 | 9:05-10:05 10:20-11:20 | Confined Space Safety <i>Eric Fullan ~ City of Hillsboro</i> Confined space is a term from labor-safety regulations that refers to an area which is enclosed with limited access which make it dangerous. Come learn about how to work in confined spaces. https://www.clackamas.edu/academics/departments-programs/water-and-environmental-technology-aas |
| #17 | 11:25-12:25 | ELC Tour 2 ~ ~ ~ ~ <i>You may only attend 1 session.</i> <i>Jim Nurmi ~ Clackamas Community College</i> Come on an informal tour to see how CCC has renovated the Environmental Learning Center in order to improve the overall quality of the areas stormwater. The storm water from Oregon City High School as well as CCC runs through the ELC and is the head waters for Newell creek. Topics will include a discussion of the physical and chemical variables that are measured in regards to the water quality of stormwater. We will also discuss and show you how CCC has improved the overall water quality we are sending into Newell Creek. <i>Limited to 15 people.</i> <i>Sign up at registration – Fireside Lounge.</i> |
| #18 | 1:10-2:10 | Tunnel Tour ~ Group 1 ~ ~ ~ <i>You may only attend 1 session.</i> <i>Rodney Osterhoudt ~ Clackamas Community College</i> Take a tour of Clackamas Community College’s underground pipe gallery and tunnels. Learn the history of the campuses water distribution system and how it has changed over time. <i>Limited to 15 people.</i> <i>Sign up at registration – Fireside Lounge.</i> |
| #19 | 2:15-3:15 | Tunnel Tour ~ Group 2 ~ ~ ~ <i>You may only attend 1 session.</i> <i>Rodney Osterhoudt ~ Clackamas Community College</i> Take a tour of Clackamas Community College’s underground pipe gallery and tunnels. Learn the history of the campuses water distribution system and how it has changed over time. <i>Limited to 15 people.</i> <i>Sign up at registration – Fireside Lounge.</i> |
| #20 | 3:30-4:30 | Cyanotoxins and the Clackamas and McKenzie Rivers <i>Kurt Carpenter ~ USGS</i> Focus on cyanotoxins in the Clackamas and McKenzie Rivers, two important drinking water supplies in Oregon, which were sampled in 2016-17. Cyanotoxins are naturally occurring compound produced by cyanobacteria in lakes, reservoirs, rivers and streams, which can be highly toxic to humans, pets, and livestock. Recent documentation of cyanotoxins in rivers and streams in critical water supplies indicates that benthic cyanobacteria may be an important source of these compounds in addition to the blooms that sometimes foul Cascade Range reservoirs. This study included direct testing of cyanobacteria colonies from rock substrates, assessment of cyanotoxins associated with seston (drifting cyanobacteria), and solid-phase algal toxin trackers (SPATTs). |

Clackamas Community College Campus Map



McLoughlin
Auditorium

Gregory
Forum

Pauling Center
P101, P131, P132

Community Center –
Fireside Lounge