PORTLAND WATER BUREAU
FROM FOREST TO FAUCET

Mingus Mapps, Commissioner
Gabriel Solmer, Director

1120 SW Fifth Avenue, Room 405
Portland, Oregon 97204-1926
Information: 503-823-7404
portlandoregon.gov/water

June 25, 2024

OESAC CEU Committee
PO Box 577
Canby, OR 97013-0577

Dear members of the CEU Committee:

Please consider this request for your approval of the American Water Works Association (AWWA) Spring 2024 Webcasts for 0.9 CEU's.

DATE	AWWA Spring 2024 Webcasts	CEU's: 0.9
4/3/24	AI Series, Part 2: Safeguarding Tomorrow: Unraveling the Risks of Artificial Intelligence	0.1
4/10/24	Microplastics 2024: Practical State-of-the-Science in Drinking Water	0.1
4/17/24	Optimizing Water Resources: Tools for Water Optimization and Energy Efficiency	0.1
5/1/24	Cybersecurity and Per-and Polyfluoroalkyl Substance Regulations	0.1
5/7/24	Laboratory QC Improvements: More Efficient Media and Method Checks	0.1
5/8/24	Part 1: Distribution Systems Unregulated Inorganics and Why You Should Monitor Them	0.1
5/15/24	Part 2: Distribution Systems Unregulated Inorganics and Why You Should Monitor Them	0.1
5/22/24	Regional Water Distribution Models - What, Why, and How?	0.1
6/5/24	AI Series, Part 3: Intelligent Water Systems: Navigating the Waters of Tomorrow	0.1

Thank you in advance for your consideration.

Respectfully,

Brooke E. Gardner

Brooke Gardner
Portland Water Bureau
brooke.e.gardner@portlandoregon.gov

Enclosures:
1. Letter of request to review
2. AWWA Webcast Summaries and Speaker Bios

AWWA Webinar - AI Series, Part 2: Safeguarding Tomorrow: Unraveling the Risks of Artificial Intelligence
April 3, 2024

Overview:
In an era where the boundaries between the digital and physical worlds blur, understanding and mitigating the risks associated with artificial intelligence is paramount to protecting our critical infrastructure. Join us for this enlightening webinar where thought leaders and experts will provide insights to navigate the complexities of AI risks and empower you to embrace the transformative power of AI responsibly.

Embarking on the frontier of artificial intelligence (AI) promises boundless innovation, but it comes with a set of unprecedented risks. This webinar is a crucial exploration of the multifaceted challenges and potential pitfalls that arise as we integrate AI into our utilities. Learn how cybersecurity safeguards are advancing with the help of AI to protect against attacks that are increasing in frequency and complexity due to AI.

Introduction to AI Risks
Security Vulnerabilities in AI Systems
Transparency in AI
Adversarial Attacks and AI
AI in Critical Systems: Risks and Consequences
Regulatory Landscape
Mitigating AI Risks: Best Practices and Strategies
Futureproofing Against AI Risks

Learning Objectives:
1. Outline the risks and consequences of artificial intelligence-based applications within the water sector.
2. Give examples of how to develop an improved cybersecurity plan to protect a utility from the increasing severity and number of attacks that threaten the sector.
3. Analyze the existing regulatory landscape to ensure utilities remain in compliance and protected from cyberattacks and evaluate the potential for future regulatory intervention and vulnerabilities.

Presenter Biography Information

Kevin Morley, PhD, Manager of Federal Relations, AWWA

Kevin is Manager, Federal Relations for the American Water Works Association. He works closely with multiple organizations to advance the security and preparedness of the water sector. This includes supporting the development of several ANSI/AWWA standards that represent minimum best practice for water sector risk and resilience management, including cybersecurity guidance. He is a leading expert on Section 2013 of America's Water Infrastructure Act of 2018 and multiple resources that enable water

system to advance their security and preparedness to all-hazards. Dr. Morley has been appointed to the President's National Infrastructure Advisory Council.

Kevin Owens, Founder/CEO, CyberStorm Defense, LLC
Kevin has more than 25 years of experience in control systems and cybersecurity, in both the commercial industry and government sector (Department of Defense). He is uniquely qualified to examine a network from the adversary's point-of-view. Kevin has traveled globally responding to security incidents and performing cyber and physical security assessments creating more defensible network postures, increasing the customers' ability to detect and respond to an attack by closing vulnerabilities and significantly enhancing security. He has coordinated with several government agencies, law enforcement, national intelligence entities, private sector, and international constituents on cybersecurity issues and events. Kevin has collaborated with AWWA in the creation of the cybersecurity assessment tool and sits on several AWWA standards boards and committees.

S**atish Tripathi, PE, Managing Engineer – Water Infrastructure Planning (WIP), Houston Water, City of Houston**
Mr. Tripathi has more than 15 years of experience in hydraulic modeling, Water/wastewater System evaluation and Master Planning. He has BE in Civil engineering, M.SC in Water Resource Engineering and On-going PhD in Water Engineering from Texas A&M University. He is serving as a managing engineer in water planning group in Houston Water and is a committee member of AWWA's Digital Twin and Engineering & Modeling Committee. He is a known leader in process automation and adopting new technology (Machine Learning/ AI, Digital Twin) in Water Utility.

Judith Germano, Founding Member, Germano Law, LLC
Judith is an internationally recognized thought leader on cybersecurity governance and privacy issues. After serving as the Chief of Economic Crimes at the U.S. Attorney's Office for the District of New Jersey, and a federal prosecutor for 11 years, Judi founded Germano Law LLC to provide client-focused advice and representation to companies and individuals.

AWWA Webinar Program: Microplastics 2024: Practical State-of-the-Science in Drinking Water
April 10, 2024

Overview:
This webinar will provide attendees with a practical briefing on the most up-to-date information on microplastics in drinking water, including occurrence/monitoring, treatment, and health effects.

- Characterizing Microplastics in Drinking Water Supplies
- Understanding the Health Impact of Microplastics via a Drinking Water Vector
- Navigating the Complex Landscape of Microplastics Treatment

Learning Objectives:

1. Analyze the potential for microplastics monitoring (required or voluntary).
2. Assess the ability of a variety of treatment process for removal microplastics from drinking water.
3. Engage with customers on microplastics issues and outline the most up-to-date information available.

Presenter Biography Information

Brent Alspach, Vice President & Director of Applied Research, Arcadis
Brent holds both BS and MS degrees in Civil & Environmental Engineering from Cornell University. He joined Arcadis in 1997 and serves as a Vice President and the company's Director of Applied Research. He is past Chair of the AWWA Water Quality & Technology Division Board of Trustees and a current member of the Technical & Education Council, also serving on the advisory/ editorial boards for Journal AWWA, Opflow, and AWWA Water Science.

Nicole Fahrenfeld, PhD, Associate Professor, Rutgers, The State University of New Jersey
Dr. Fahrenfeld is an Associate Professor of Civil & Environmental Engineering at Rutgers, where her team works on applied environmental microbiology and organic chemistry. Her lab's microplastics research has been funded by NJ Sea Grant, NOAA, NSF, and WRF and includes water, environment, and food chain uptake focus areas.

Robert Andrews, PhD, Professor and Senior Chairholder in Drinking Water Research, University of Toronto, Drinking Water Research Group
Professor Andrews has over 25 years of experience in the field of drinking water treatment, both as an academic researcher as well as a consultant. He holds a Natural Science and Engineering Research Council (NSERC) Senior Industrial Chair in Drinking Water Research at the University of Toronto, Department of Civil and Mineral Engineering. He regularly collaborates with researchers across Canada, the United States and internationally regarding emerging drinking water related issues.

AWWA Webinar Program: Get Optimized: Tools for One Water Optimization
April 17, 2024

Overview:
Optimizing utility performance for the protection of public health and the environment plays a key role in maintaining public trust. This webinar will guide you through a variety of One Water self-assessment and optimization tools and strategies, so you can create an action plan and improve utility operations and performance. For almost 30 years the Partnership programs have leveraged our partnership of six of the most prestigious water associations to help improve utility operations and strive for optimization. Utilizing the latest research and projects

from the Water Research Foundation and highlighting Partnership for Safe Water and Partnership for Clean Water utility success stories, we will provide tools and techniques to optimize operations and performance, with the potential to reduce utility energy consumption, time, and costs.

Using the Partnership for Safe Water and Partnership for Clean Water framework, the learner will walk away with tools and optimization solution examples for wastewater treatment, water reuse, and source water protection. The Water Research Foundation will outline its guidelines for optimizing nutrient removal performance (project #4973), as well as its framework for energy optimization (project #5091). Beaufort Jasper Water & Sewer Authority will highlight how the Partnership for Clean Water self-assessment framework has helped to optimize wastewater treatment plant performance for water reuse applications. Bringing it all together at the intersection of water and wastewater, West Virginia American Water will highlight best practices in source water protection, as an essential component of the Partnership for Safe Water's treatment plant optimization program.

Learning Objectives:

1. Access tools and research to put together a successful optimization action plan.
2. Learn about One Water optimization tools, techniques, and solutions to improve operations and performance.
3. Access the most recent guidelines, framework, and research on optimization from the Water Research Foundation.
4. Learn about the Partnership programs framework to optimization, and how its resources have been applied at Partnership utilities across the US.
5. Recognize that optimization efforts lead to public health benefits, greater environmental stewardship, and enhanced public trust.

Presenter Biography Information

Kevin Linder, Advanced Water Treatment Superintendent, Aurora Water

Kevin Linder is the Advanced Water Treatment Superintendent for Aurora Water at the Binney Water Purification Facility. Kevin was the Senior Water Utility Supervisor at the Binney Water Purification and the Wemlinger Water Treatment Plant prior to that. Kevin has been a Partnership for SafeWater PEAC volunteer since 2004, a PEAC Vice-Chair since 2010, the Treatment Chair for the PEAC since 2016 and currently the PSW Steering Committee Chair. In 2016, the Binney Water Purification Facility achieved the Partnership for Safe Water Phase IV Excellence in Treatment Award. Kevin has led treatment and optimization efforts for more than 25 years and received the Rocky Mountain Section AWWA Ralph R. Leidholt Operator of the Year Award in 2007. Kevin holds a Class "A" Treatment Plant Operator license and a Distribution 4 license for the state of Colorado.

Ashwin Dhanasekar, Research Program Manager, Water Research Foundation

Ashwin Dhanasekar serves as a Research Program Manager at WRF. He leads the Energy Efficiency and Optimization WRF Research Area, as well as research topics related to

carbon management and biosolids. Ashwin has a BS in Chemical Engineering from Anna University, India, and an MS in Environmental Engineering from Colorado State University. Areas of Expertise: Energy, Resource Recovery, Biosolids, Microplastics, Reuse.

Tricia Kilgore, Director of Technology and Innovation, Beaufort Jasper Water and Sewer Authority (BJWSA)
Tricia H. Kilgore, PE, is the Director of Technology and Innovation at Beaufort-Jasper Water & Sewer Authority in South Carolina. She started her engineering career as a drinking water regulator then worked as a consultant before joining the utility side in 2008. At BJWSA, Tricia has worked in engineering, capital projects management, and operations. In her present role, she is focused on sustainability, emergency preparedness, regulatory compliance (lead and copper rule), research, and innovation. Tricia has engineering degrees from Virginia Tech and Loughborough University in the UK.

Erica Pauken, Manager – Compliance American Water (West Virginia)
Erica Pauken is the Operational Compliance Manager for American Water. She has over 12 years of experience in environmental compliance, stakeholder engagement, and risk mitigation for water and wastewater utilities. She leads the development and implementation of strategies, processes and tactics focused on ensuring compliance with key regulatory requirements for West Virginia American Water. She is also a current Trustee of the American Water Works Association (AWWA) – Water Resources Sustainability Division.

AWWA Webinar Program: Cybersecurity and Per-and Polyfluoroalkyl Substance Regulations
May 1, 2024

<u>Overview:</u>
Who's Watching Washington? Essential policy updates from AWWA Government Affairs

Learning Objectives:

Presenter Biography Information

Steve Via, Director of Federal Relations, American Water Works Association
Steve Via is Director of Federal Relations for the American Water Works Association (AWWA) working in AWWA's Washington, D.C., office. Mr. Via's primary responsibilities are two-fold. First, working with the Environmental Protection Agency (EPA) and other federal agencies on the development of policy and regulations that affect the water sector, and communicating the basis and substance of federal policy and regulations to the water sector. Mr. Via has 31 years' professional experience in environmental regulatory compliance assistance related to federal and state drinking water, wastewater, and solid/hazardous waste regulations. His work experience includes

supporting communities engaged in planning, financing, and managing infrastructure improvements.

Kevin Morley, PhD, Manager of Federal Relations, AWWA
Kevin M. Morley, PhD, is Manager, Federal Relations for the American Water Works Association (AWWA). He works closely with multiple organizations to advance the security and preparedness of the water sector. This includes supporting the development of several ANSI/AWWA standards that represent minimum best practice for water sector risk and resilience management, including cybersecurity guidance. He is a leading expert on Section 2013 of America's Water Infrastructure Act (AWIA) of 2018 and multiple resources that enable water system to advance their security and preparedness to all-hazards. Dr. Morley has been appointed to the President's National Infrastructure Advisory Council.

Chris Moody, Regulatory Technical Manager, AWWA
Chris Moody is the Regulatory Technical Manager for the American Water Works Association's Government Affairs office. He is a professional engineer and has 10 years of experience in environmental engineering spanning drinking water, municipal and industrial wastewater, environmental remediation, and solid waste management infrastructure. Drawing on this experience, he helps manage a portfolio of emerging water issues like PFAS under not only the Safe Drinking Water Act but other environmental statues like TSCA, RCRA, and CERCLA.

AWWA Webinar: Laboratory QC Improvements: More Efficient Media and Method Checks
May 7, 2024

Overview:
Positive and negative culture controls are an essential but seldom discussed aspect of an environmental laboratory's quality system. There are several different ways water testing laboratories can implement these controls, and this webcast will detail how labs can save both time and money by adopting a standardized, proven approach. This webinar is for water testing laboratory personnel, especially laboratory managers, quality managers, or laboratory technicians. Attendees will learn the different approaches to positive and negative culture controls, and how an updated approach to these controls may save time and money.

Learning objectives for the webinar include understanding the definition, purpose, and importance of positive and negative culture controls, the different options available to laboratories that need to implement these controls, and the benefits and drawbacks of each approach. Attendees should be able to increase laboratory efficiency, reduce risk, and save money by updating their approach to these controls as a result of attending this webinar.

Key Takeaways

- Understand the definition, purpose, and importance of positive and negative culture controls in a water testing laboratory.

- Be able to identify the various approaches to positive and negative controls that are available to water testing laboratories.
- Hear about the benefits and drawbacks associated with each approach to culture controls and identify opportunities to improve efficiency or save money in the laboratory.

Expert Panel

Patsy Root, Senior Government Affairs Manager, IDEXX Water
Patsy received her M.S. in Biochemistry from University of Maine, Orono. Patsy has over 13 years' experience in water microbiology, water-related regulations and environmental laboratory accreditation. She has worked with a variety of regulatory agencies worldwide in attaining regulatory approval for IDEXX methods and on Validation/verification of methods. She has worked on several large-scale method validation studies including those with the European Commission and in the US with the EPA under the Alternative Test Protocol (ATP). Patsy is a long-time participant in various standards development organizations including with TNI, Standard Methods for the Examination of Water and Wastewater and ASHRAE.

Shawn Dubois, Senior Scientist, IDEXX Water
Shawn is a Senior Scientist with IDEXX Laboratories. He has been a part of the Water business for 21 years working in research and development and in his current role managing the product support group. In addition, Shawn manages the ISO 17025:2017 accreditation for the Water Quality Control lab. Shawn has a BA in Biology and a BS in Environmental Science. Shawn is a participant in several standards development organizations, including *Standard Methods for the Examination of Water and Wastewater*.

AWWA Webinar: Part 1: Distribution Systems Unregulated Inorganics and Why You Should Monitor Them
May 8, 2024

<u>Overview:</u>
This webinar series will examine the issues that occur with unregulated inorganics in terms of asset management, risk to public health and customer satisfaction with water quality. Unregulated inorganics in the distribution system may be a cause for customer complaints and an asset management nightmare for utilities. This two-part webinar series will explain the science, emerging health concerns, monitoring and mitigation to improve water quality.

Part 1: Inorganics 101, Material Accumulation and Mitigation
Panelists will set the stage with an introductory talk on the issues with inorganics followed by a discussion on the chemistry of certain key metals.

Learning objectives:

- Identify several inorganic contaminants which have a detrimental effect upon distribution system water quality.
- Analyze the composition of solids in the distribution system and recall that accumulated contaminants have the potential to be released back to the drinking water.
- Identify the monitoring tools required to assess maintenance practices.
- Describe watermain cleaning efforts to respond to different inorganics.
- Outline the theory of material accumulation and mobilization.
- Give examples of monitoring and mitigation as well as the benefits and limitations of monitoring and main cleaning strategies.

Presenter Biography Information

Javier Locsin, Moderator

Javier is an environmental engineer with CDM Smith. His work focuses on distribution system water quality, water and wastewater treatment processes and optimization, and lead and copper corrosion control. He enjoys combining environmental chemistry, simulation, and public engagement to provide practical, long-term solutions to engineering problems.

Phil Brandhuber, Owner, Brandhuber Water Quality & Treatment LLC

Phil has extensive experience in management of inorganic contaminants including lead, copper, arsenic, chromium, manganese, and perchlorate. He has been the principal or co-principal investigator for numerous research projects sponsored by the Water Research Foundation (WRF) and other agencies. Phil is participating in the AWWA effort to develop a training program for completing corrosion control treatment (CCT) evaluations in compliance with the revised Lead and Copper Rule *LCRR). He also developed AWWA training materials for small system compliance with the LCRR. Phil is the current chair of the AEWWA Inorganic Contaminates Committee and Manganese Subcommittee. Phil has 20 years ‘experience as a consultant, working for McGuire Environmental and HDR Engineering, where he was named an HDR Fellow. He is currently owner of Brandhuber Water Quality & Treatment LLC.

Laura Meteer, Drinking Water Quality Group, Queen’s University

After 17 years in the water industry, Laura has returned to school to pursue her Master’s degree with the drinking Water Quality Group at Queen’s University. Her research focus areas are biostability, distribution system water quality, chlorine and chloramines residuals and operational monitoring. Laura is an active member of various AWWA committees and is currently volunteering on multiple manual revisions. Locally, she is a member of the OWWA Distribution Committee and a past member of the Ontario Drinking Water Advisory Council.

Andrew Hill, Senior Project Manager, Confluence Engineering Group

Andrew Hill is a Senior Project Manager at Confluence with 22 years of expertise in process engineering, reaction chemistry, resource integration and mitigation of legacy pipe deposits. Andrew leads our Main Cleaning Optimization program and has published

numerous reports and peer-reviewed manuscripts on water quality and asset management, distribution system best practices for water quality control, and distribution main cleaning.

Dr. Andrea M. Dietrich, Professor of Civil and Environmental Engineering, Virginia Tech
Dr. Dietrich is a Professor of Civil and Environmental Engineering and Adjunct Professor of Food Science and Technology, at Virginia Tech. She has over 25 years of experience in teaching, research, and consulting within the interdisciplinary field of environmental engineering and sciences. Her areas of expertise are drinking water treatment, aesthetic issues – taste, odor, color, drinking water, water quality, fate and transport of organic and inorganic chemicals. She has authored over 100 journal articles, reports, and book chapters, plus provided lectures and workshops on taste and odors in water throughout the globe. She is the past chair of the AWWA's Taste and Odor Committee and the incoming chair for the International Water Association's Specialist Group on Off-Flavours in the Aquatic Environment.

AWWA Webinar: Part 2: Sensory Diagnostics, pH Impacts and Inorganic Chloramines
May 15, 2024

Overview:
Panelists will begin with a talk on diagnosing issues and customer complaints with fabulously updated taste, odor, and color charts. Next will be a discussion on the unintended consequences of pH adjustment and the potential impacts to metals and complexes in a distribution system. And, while perhaps not traditionally thought of as an inorganic, the next speaker will explain inorganic chloramines and highlight how to monitor and what interferences to be aware of while monitoring. Lastly, a case study involving pH, metals and disinfection will conclude the webinar.

Learning Objectives:

- Recognize the impacts of pH change to water chemistry in the distribution system.
- Outline the procedure for completing accurate and appropriate chemical analysis to assist with proper control of the chloramination process and to help control nitrification.
- Identify best practices for online WQ monitoring on the example of chloramination control.

Panel Biography Information

Darren Lytle, Environmental Engineer, EPA Office Research and Development
Dr. Darren A. Lytle is an environmental engineer for the Water Infrastructure Division (WID) of the U.S. Environmental Protection Agency's (EPA's) Center for Environmental Solutions and Emergency Response (CESER) in Cincinnati, Ohio. Since beginning work at EPA in 1991, Darren's primary goal has been to research the quality of drinking water. Over the years, he has investigated and published works on drinking water systems, including work on distribution system corrosion control and water quality (e.g., red water control, lead and copper corrosion control); filtration (emphasis on removal of

particles, and microbial contaminants and pathogens from water); biological water treatment; and iron and arsenic removal. He holds a B.S. in civil engineering from the University of Akron (1990), a M.S. in environmental engineering from the University of Cincinnati (1991), and a Ph.D. in environmental engineering from the University of Illinois (2005). Darren has participated on many AWWA committees and most recently served as a trustee on the Water Quality and Technology Division.

Corinne Bertoia, Engineering Specialist, Denver Water
Corinne Bertoia is a Process Optimization Engineering Specialist with Denver Water. She received her BS degree in Biotechnology and Cell and Systems Biology in 2015 and her MASc in Civil Engineering in 2018, both from the University of Toronto. Her graduate work investigated the removal of nitrogenous disinfection by-products using drinking water biofilters. After obtaining her MASc, Corinne joined the American Water Works Association as a water quality engineer. She has her Colorado Water Treatment A certification.

Kate Hollander, Engineering Specialist, Denver Water
Kate Hollander graduated from the University of Denver in 2020 with a degree in mechanical engineering. She is the engineering specialist for the Lead Reduction Program at Denver Water. She has been involved in the Lead Reduction Program since 2021.

Chris Caitlin, Operations Specialist, Jacobs Engineering
Chris has over 30 years of experience in municipal drinking water including design, start up, optimization and operations/management. Chris has managed several water systems that use chloramine disinfection and has worked extensively in controlling nitrification in chloramine systems.

Vadim Malkov, Principal Product Applications Manager, HACH Co.
Dr. Vadim Malkov is a chemist and has been working in water industry since 2002. His experience includes studies of water quality in municipal and industrial applications, participation in development of process analyzers, reagents, and applications. Vadim has published dozens of papers and presented many talks on water analysis technologies at the US and international forums. He now works for Hach as a Principal Product Applications Manager covering drinking water, all things disinfection and beyond.

AWWA Webinar: Regional Water Distribution Models - What, Why, and How?
May 22, 2024

<u>Overview:</u>
This webinar will discuss challenges associated with creating regional water distribution models, unique aspects of regional transmission models, and advantages regional models can provide for resiliency, emergency supply, and comprehensive water quality analysis.

This program is intended for regional water suppliers, water utilities who need to evaluate interties between water supply systems, and their consultants. Traditionally, the information about flows and pressures/hydraulic grade line (HGL) at the intertie between systems was based either on the metered data for active connections or anecdotal evidence for emergency connections. Both datasets are inadequate when the interties are evaluated for future planned conditions. An example of this includes a proposed pump station that would deliver water from a higher HGL to a lower one because the HGL in the source zone was too low during an observed emergency or an emergency connection that cannot supply water due to the HGL difference.

Today most distribution system utilities have a hydraulic model. These hydraulic models can be easily integrated into a regional model that can accurately predict flows and HGL at the intertie. Regional models, created by integrating individual utility distribution system models, provide unique challenges and opportunities. The first challenge when creating a regional model relates to the modeling software platform used for constituent models. Often EPANET exports from constituent models must be used to create the regional modeling in the selected modeling platform. The next step includes reconciling different simulation options, modeling time steps, and controls. Actual system differences, such as how the water is treated, may also need to be considered.

Speakers will highlight examples of utilities that resolved these challenges and present attendees with the tools and tips they would need to create a regional model.

Learning Objectives:

- Learn how to define a regional model and the key characteristics that differentiate a regional model from a large model that may serve many clients over an extensive area.
- Troubleshoot integrated regional models in EPS mode to resolve control conflicts.
- Use regional models to evaluate interconnected system reliability targets and emergency supply scenarios.
- Understand how to use hydraulic modeling for regional water system evaluation, interfacing results between wholesaler and retailer hydraulic models.

Panel Biography Information

Matthew Huang, Principal Planning Engineer, Associate Vice President, Carollo Engineers

Matt is a professional engineer with over 20 years performing hydraulic models across the United States and in seven foreign countries.

Sasa Tomic, PhD, PE, Digital Water Lead, Burns & McDonnell Engineering Co.Inc.

Sasa provides over 30 years of experience in digital water and hydraulic modeling. He offers a unique blend of practical, theoretical, and software development skills perfected as an early adopter of AI in the water industry, the lead designer of hydraulic modeling platforms, and an internationally recognized digital water authority. Sasa is an active

AWWA, SWAN, and WEF committees member and serves on the Board of Advisors for Qatium.

Nima Najafi, Program Manager, Water System Modelling & Data Analytics, Metro Vancouver
Nima has over 20 years of experience in utility infrastructure planning, design, and operation support. He is a visionary advocate for leveraging the power of data and digital tools in organizations and their digital transformation journey. He has been a collaborative member of complex and cross-functional private and public sector organizations, where his leadership, vision, and technical competence were instrumental.

Heather Ripley, Senior Project Manager, Kimley-Horn and Associates
Heather Ripley is a professional engineer that has more than 15 years of water and wastewater experience in planning, evaluating and designing distribution, collection and transmission systems and treatment facilities. Heather believes water needs to be understood, planned for and managed to be maintained as a healthy viable resource. She works and resides in SW FL for her love of the beach, and she is passionate about working on projects that benefit her community. In addition to volunteering on local AWWA and WEF committee leadership boards, Heather also volunteers for state and association AWWA and WEF organizations and is actively serving as vice chair and elected trustee on the AWWA Distribution and Plant Operations Division, a member of the Engineering Modeling Applications Committee, and chair of the Florida Section AWWA Distribution Division.

AWWA Webinar: AI Series, Part 3: Intelligent Water Systems: Navigating the Waters of Tomorrow
June 5, 2024

Overview:
Emerging technologies compel water utilities to improve everyday practices. Advancements in instrumentation for water production, transmission, distribution, wastewater collection, and consumer endpoints allow for the optimization of water networks. While these innovations offer enhanced efficiency and reliability for water networks, the multitude of options available necessitates expert advice on the most valuable technologies and their optimal implementation strategies for utilities.

An intelligent water system has a lot of benefits outside of the technological space, such as fostering equity, positively impacting public trust, increasing efficiency, and steering utilities toward a circular water economy.

Implementation of multiple technologies, including AI/ML are central to improving resource management and optimization. This panel will discuss drivers, challenges, and opportunities of

leveraging digital technologies and operationalizing data analytics including the application of AI/ML for better data-driven decision making.

Panel biography information:

James (Jim) Cooper, PE, CWO, ENV SP, Global Director – Water Optimization, Arcadis
Mr. Cooper serves as the global director for water optimization at Arcadis with 19 years of experience as a certified operator, professional engineer, and utility manager. Jim brings a passion for people enabled by technology, with an education and research background in Civil Engineering and Artificial Intelligence. He brings deep industry relationships as Chair of the AWWA Engineering & Construction Division, Inaugural Chair of the AWWA Digital Twins Committee, Advisory Board Member of BAYWORK, past co-chair of the Digital Twin Lifecycle Subgroup for SWAN, and Chair of the Intelligent Water Infrastructure Committee for the Sustainable Water Infrastructure Management Center at Virginia Tech University.

Robert Bornhofen, Director of Innovation, DC Water
As the Innovation Leader for the District of Columbia Water and Sewer Authority ("DC Water"), Dr. Robert Bornhofen is tasked with formulating and executing a comprehensive strategy across the entire organization. As an academic, Dr. Robert teaches innovation strategy at Cornell University. He also teaches the MBA Capstone course at the University of Maryland. His past industry experience includes such well-known companies as IBM, Citibank, & Delta Air Lines. Robert holds two U.S. Patents for original & patentable technologies. Experienced in leading change initiatives, Robert embraces the creative spirit that goes into innovation, where smart people come together to address key challenges, where great ideas get transformed into extraordinary outcomes.

Stephanie LeBlanc, Senior Manager Information & Technology Services, Halifax Water
Stephanie LeBlanc of Fletchers Lake, Nova Scotia is the Sr. Manager of Information & Technology Services at Halifax Water. She is responsible for strategy, delivery via a project management office & operations for Cybersecurity, Architecture, Infrastructure, Data & Analytics, Automation and Artificial Intelligence, Enterprise & Business Applications, Operational Technology, and Innovation including Drones, Digital Twin and Metaverse. Stephanie's team are dedicated to Xperience inspiring Transformation at Halifax Water ensuring a Total Experience for customers and employees. Stephanie has spent the former half of her career in IT consulting and latter half in the Public Sector building effective teams, client relationships and developing strategy and service delivery models in Canada, United States, and Ireland. Her areas of business expertise include Utilities, Health Care, Defense, Security & Aerospace, Public Sector, Telecommunications, and Finance industries.

Frank King, GISP, ITIL, Manager – Data, Analytics & Visualization, Halifax Water
Frank King of Halifax, Nova Scotia is the Manager of Data, Analytics & Visualization at Halifax Water. His team provides services in analytics, reporting, mapping, integration,

automation, artificial intelligence, and innovation. Frank has 25 years of experience working in utilities, municipal and provincial governments, and education sectors, with his core value being a trusted partner always aligning with business outcomes.

Amanda Doucette, PMP, ITIL, Manager – Enterprise & Business Applications, Halifax Water

Amanda Doucette is the Manager of Enterprise & Business Applications with Halifax Water. She is responsible for overseeing the development, maintenance, and support of our enterprise application portfolio. Amanda has over 20 years' experience in IT, including public and private sectors. She has valuable technical expertise in various IT domains, such as helpdesk management, infrastructure design, digital design, project management, application management and IT Service Management.

Justin Wilson, Acting Manager of Technical Services, Halifax Water

Justin Wilson of Halifax Nova Scotia is the Acting Manager of Technical Service at Halifax Water. He is responsible for OT Cybersecurity, electrical equipment, instrumentation, SCADA system, process data aggregation. Justin's team keeps the Halifax Water's infrastructure operational and provides the capabilities and data to help the business make informed decisions. Justin has both a Bachelor of Technology and a Diploma in Electrical Engineering Technology. He has 15 years of progressive experience working in Operational Technology at Halifax Water focused on building and maintaining resilient Industrial Control Systems.