

## **WRF Webinar: WRF Mapping Climate Exposure and Climate Information Needs to Water Utility Business Functions**

**July 20<sup>th</sup>, 2021**

### **Webcast Summary:**

#### Overview:

Are you a utility manager seeking to understand, assess, and incorporate climate-related risks and opportunities into your strategic planning, funding, and investment decisions? Join us for a webcast based on the project Mapping Climate-related Risks and Opportunities to Water Utility Business Functions (5056). This project updated a 2020 framework and guidebook based on real-world insights from Denver Water and the San Francisco Public Utilities Commission. The framework is adaptive and flexible to help water utilities define their focus for a climate-related risk and opportunity assessment, ask key climate questions, map climate impacts relative to mission-critical business functions, and pinpoint risks and opportunities across those business functions. Utilities may utilize the framework and supplemental guidebook to establish a solid foundation to mainstream climate considerations across the enterprise.

#### **Presenter Biography Information**

##### **Alexis Dufour, PE – Water Resources Engineer, San Francisco Public Utilities Commission**

Mr. Alexis Dufour is a water resources engineer at the San Francisco Public Utilities Commission Water Enterprise. He is a licensed professional civil engineer with over 18 years of experience in hydrology, reservoir system operation and water resources planning. In recent years, he worked at the intersection of engineering and policy. He is leading an effort on long-term vulnerability assessment and adaptation planning for the SFPUC regional water system. He represents SFPUC at the Water Utilities Climate Alliance and is member of the American Meteorological Society Water Resources Committee.

##### **Laurna Kaatz – Climate Program Director, Denver Water**

Laurna Kaatz directs Denver Water's climate science, policy, and adaptation program. Her primary responsibility is to lead climate investigations and implement findings to inform planning, policy, and research. Laurna's work incorporates many areas of water resource planning, including climate and drought planning, operational and water rights analysis, and long-range integrated resource planning. As past chair of the Water Utility Climate Alliance and lead practitioner of the Decision Making under Deep Uncertainty Society, Laurna is extensively engaged in climate adaptation, resilience, and long-range planning. Before her career at Denver Water, Laurna was a Professor of Physics at Sweet Briar College and went on to work as a climate scientist with Aurora Water. Laurna has a master's degree in physics and a Bachelor's in physics and mathematics.

##### **Emily Wasley – Corporate Climate Risk, Adaptation, and Resilience Practice Leader, WSP USA**

Emily Wasley is a practice leader with WSP USA experienced in climate change, sustainability, adaptation, and all-hazards resilience, with more than 15 years of experience. She is a nationally recognized expert having supported a variety of private, nonprofit, academic, and government organizations on domestic and international climate change research, policy, and strategy. She leads WSP's corporate climate risk, adaptation, and resilience practice in the United States assessing and managing the physical risks of climate change and the risks and opportunities associated with transitioning to a low carbon economy consistent with the guidance provided by the Task Force on Climate-related Financial Disclosures (TCFD). Emily serves as principle investigator on a climate risk and resilience project with several US-based water utilities to design

and conduct tabletop exercises to enhance climate resilience across critical water utility business functions. Lastly, she serves as a west coast Future Ready Advisor.

#### **WRF Webinar: Piloting of Emerging Technologies**

**July 29<sup>th</sup>, 2021**

#### **Webcast Summary:**

##### Overview:

The Water Research Foundation (WRF) and the U.S. Department of Energy (DOE) highlighted a select group of advanced water resource recovery system projects recently awarded by DOE totaling \$27.5 million.

These projects are led by teams from universities, water utilities, manufacturers, national laboratories, and small and minority-owned businesses, and will help provide sustainable water sources and affordable treatment options to industry, municipalities, agriculture, utilities, and the oil and gas sector.

#### **Presenter Biography Information**

**Melissa Klembara** — Senior Technical Advisor (acting), Advanced Manufacturing Office, U.S. Department of Energy

Melissa Klembara is currently acting as a Senior Technical Advisor in the U.S. Department of Energy's Advanced Manufacturing Office, where she manages over \$200 million in RD&D investments in the areas of energy-water nexus and the circular economy of plastics. Specifically, Melissa is leading DOE's National Alliance for Water Innovations (NAWI), a \$110 million desalination R&D consortium. Melissa is also co-leading a jointly funded R&D effort in AMO with the Bioenergy Technology Office (BETO) on the circular economy of plastics. Before joining AMO, Melissa served as a Chief of Staff for both the Deputy Assistant Secretary of Energy Efficiency and the Deputy Assistant Secretary of Renewable Power and worked for several years in BETO. Before joining the federal government, Melissa was a process engineer at International Paper Company. She holds a B.S. in Chemical Engineer from the University of Maryland as well as two master's degrees from Heriot-Watt University in Edinburgh, Scotland.

**Stephanie Klaus** — Treatment Process Engineer Hampton Roads Sanitation District

Stephanie Klaus is a Treatment Process Engineer at Hampton Roads Sanitation District. She received her PhD and masters from Virginia Tech in Civil Engineering. She has researched a variety of topics pertaining to sidestream and mainstream shortcut nitrogen removal.

**Blair Wisdom** — Director of Technology and Innovation Metro Wastewater Reclamation District

Blair is a wastewater design and process engineer with 9 years of experience as a consultant engineer and 5 years at the Metro District in Denver, Colorado, where she is currently serving as Director of Technology and Innovation. She has been involved in pilot activities to support the Phosphorus Initiative, the thermal hydrolysis biosolids intensification pilot, and the full plant demonstration of Peracetic acid disinfection.

**George Wells** — Associate Professor, Department of Civil and Environmental Engineering Northwestern University

George Wells is an Associate Professor in the Department of Civil and Environmental Engineering at

Northwestern University, where he directs the Environmental Biotechnology and Microbial Ecology Laboratory. The goal of his research is to deepen knowledge of the microbial world so as to inspire innovative microbial community management strategies to clean water, generate energy, and recover resources from societal waste streams. George received his B.S. in Chemical Engineering and B.A. in Environmental Engineering from Rice University in 2004, and MS (2006) and PhD (2011) in environmental engineering at Stanford University. He subsequently was a postdoctoral scholar at EAWAG- the Swiss Federal Institute of Aquatic Science and Technology for 2.5 years before joining Northwestern in 2013. George has authored >50 peer reviewed journal articles and serves on the leadership committees of the International Water Association (IWA) Microbial Ecology and Water Engineering Specialist Group and the IWA Nutrient Removal and Recovery Specialist Group.

**Tanja Rauch-Williams, PhD** — National Wastewater Process and Innovation Lead and Principal Technologist Carollo Engineers

Dr. Tanja Rauch-Williams serves as Carollo's National Wastewater Process and Innovation Lead and Principal Technologist with more than 20 years of experience in wastewater treatment, treatment and energy optimization, and resource recovery. She has served as principal investigator on past research projects in the area of innovative wastewater technologies, codigestion, advanced process control and water reuse. Tanja is the second vice-chair of WEF's Municipal Resource Recovery Design Committee, and founding member of the Rocky Mountain Innovative Water Technologies Committee under RMWEA. She will serve as the PI for the selected DOE pilot project.

**Nancy G. Love, PhD** — Borchardt and Glysson Collegiate Professor of Civil and Environmental Engineering University of Michigan

Dr. Nancy G. Love is the Borchardt and Glysson Collegiate Professor of Civil and Environmental Engineering at the University of Michigan. She has advised over 70 graduate students and post-doctoral research associates. In collaboration with her students, Dr. Love works at the interface of water, infrastructure, and public health in both domestic and global settings. The group advances public and environmental health using chemical, biological, and computational approaches applied to water systems, and co-design methods in partnership with communities. The Love group's core work is centered on identifying and translating fundamental understanding into practical solutions for water utilities and communities.

**Jeff Moeller, PE** — Research Unit Leader, The Water Research Foundation

Jeff Moeller serves as a Research Unit Leader at WRF where he directs one of three Foundation research units. Jeff has over 25 years of experience leading research in the areas of wastewater treatment, stormwater, decentralized systems, and integrated water management. He has also served as the WRF Director of Water Technologies. He specializes in managing R&D, demonstration, and deployment of new water and wastewater processes and technologies. He is currently the Principal Investigator for a DOE grant funded project focused on developing data-driven process controls for maximization of energy and resource efficiency in water resource recovery facilities (award pending). Jeff has a BS in civil engineering from North Carolina State University and an MS in civil and environmental engineering from M.I.T.

**Christobel Ferguson, PhD** — Chief Innovation Officer, The Water Research Foundation

Christobel has a Biomedical Science degree and a Master of Science from the University of Technology Sydney and a PhD from the University of New South Wales. Christobel worked as a Microbiologist in the

water, environment, biotechnology and pharmaceuticals sectors for Sydney Water, Burns Philp, Reckitt and Colman, Tecra Diagnostics and Sydney Catchment Authority. She has experience as a Project Director and Project Manager leading a water science consulting team for Ecowise Environmental, ALS Water Resources and GHD. She spent several years managing a portfolio of Research and Development projects for water utilities, addressing emerging issues of concern and developing new methods, products, and technologies. More recently her focus has been the management of interdisciplinary technical teams to solve complex problems in water information, policy, and planning for NSW government. Her vision is to bring research and technology innovations to the water sector to achieve sustainable and productive outcomes from the management of natural resources. Christobel was a Director of the Australian Water Association from 2005 to 2009 and has recently joined The Water Research Foundation as their Chief Innovation Officer.

**WRF Webinar: Constituents of Emerging Concern and the Emerging Technologies to Treat Them: Past, Present, and Future**  
**August 2<sup>nd</sup>, 2021**

**Webcast Summary:**

Overview:

The Water Research Foundation continued the webcast series for a Moment of Science celebrating the 20th Anniversary of the Paul L. Busch (PLB) Award! This award recognizes innovative research in the field of water quality and the water environment. During this webcast, six past Paul L. Busch Award winners discussed the evolution of constituents of emerging concern and emerging treatment technologies over the past twenty years, how these developments have impacted water industry practices, and what changes they foresee over the next twenty years.

**Presenter Biography Information**

**Nancy Love, PhD** — Borchardt and Glysson Collegiate Professor of Civil and Environmental Engineering, University of Michigan (2001 PLB Winner)

Dr. Nancy G. Love is the Borchardt and Glysson Collegiate Professor of Civil and Environmental Engineering at the University Michigan, and an adjunct Professor at the Institute of Biotechnology at Addis Ababa University. She has B.S. and M.S. degrees in Civil Engineering with an emphasis on Environmental Engineering from the University of Illinois, Urbana-Champaign, and a Ph.D. degree in Environmental System Engineering from Clemson University.

She has advised over 70 graduate students and post-doctoral research associates. In collaboration with her students, Dr. Love works at the interface of water, infrastructure, and both public and environmental health in both domestic and global settings. They focus on assessing and advancing public and environmental health using chemical, biological, and analytical approaches applied to water systems using both physical experiments and computational models. Specifically, they: evaluate the fate of chemicals, pathogens, and contaminants of emerging concern in water with relevance to public health and the

environment; use technologies to sense and remove these constituents; and advance technologies that recover useful resources from water.

Dr. Love is the Principal Investigator for the NSF grant award: Advancing Technologies and Improving Communication of Urine-Derived Fertilizers for Food Production within a Risk-Based Framework.

**Andy Schuler, PhD** — Associate Professor, Department of Civil Engineering, University of New Mexico (2008 PLB Winner)

with a focus on improving water quality. Removal of nutrients and trace organic chemicals, such as hormones and pharmaceuticals, are critical to protecting sensitive receiving waters.

Dr. Schuler is currently working on methods to improve biological treatment of such chemicals using biofilm systems, assessment of mass transfer in these systems, development of improved anode and cathode materials in microbial fuel cells, bacterial population dynamics and factors affecting competition in wastewater reactors, novel strategies to improve solids separation, microbial storage products, employment of molecular methods, such as next generation sequencing, for the study of these systems, and development and application of agent-based models of microbial populations.

He is an advisor for the UNM Engineers Without Borders Student Chapter, and has worked with EWB projects in Uganda and Bolivia.

Dr. Schuler has received numerous awards recognizing his research and teaching, including the Paul Busch Award from the Water Environment Research Foundation (WERF), a National Science Foundation CAREER Award, an Environmental Protection Agency STAR Award, the Association of Environmental Engineering and Science Professors (AEESP)/CH2M HILL Outstanding Doctoral Dissertation Award, a Junior Faculty Teaching Excellence Award, and a Grand Prize for Award for Connecting Professional Practice and Education from the National Council of Examiners for Engineering and Surveying.

**Jaehong Kim, PhD** — Henry P. Becton Sr. Professor of Engineering and Chair of Department of Chemical and Environmental Engineering, Yale University (2009 PLB Winner)

Jaehong Kim is currently Henry P. Becton Sr. Professor of Engineering and Department Chair of Chemical and Environmental Engineering in School of Engineering and Applied Science at Yale University. His areas of interest include: 1) environmental application of nanomaterials; 2) development of photoluminescence / photocatalysis technology for environmental and energy application; and 3) membrane process and materials development. Kim received B.S. and M.S. degrees in chemical and biological engineering from Seoul National University in Korea in 1995 and 1997, respectively, and a Ph.D. degree in environmental engineering from the University of Illinois at Urbana-Champaign in 2002. After graduation, he joined the School of Civil and Environmental Engineering at Georgia Institute of Technology where he later held the title of Georgia Power Distinguished Professor and Associate Chair for Undergraduate Programs. He then moved to Yale University in 2013 as Barton L. Weller Endowed Professor. He has taught undergraduate courses such as Water Quality Engineering, Environmental Technology in the Developing World, and Environmental Engineering Laboratory, and graduate courses such as Physicochemical Processes and Design of Drinking Water Treatment Facilities. He is a recipient

of various awards including Ackerman Award for Teaching and Mentoring from Yale University (2017), Bill Shultz Junior Faculty Teaching Award from School of Civil and Environmental Engineering (2013), Walter L. Huber Civil Engineering Research Prize from American Society of Civil Engineers (2013), Top Environmental Technology Paper Award from American Chemical Society (2012), Paul L. Busch Award from Water Environment Research Foundation (2009), Excellence in Research Award from Georgia Institute of Technology (2009), and CETL/BP Junior Faculty Teaching Excellence Award from Georgia Institute of Technology (2007).

**Shaily Mahendra, PhD** — Professor and Samueli Fellow, Environmental Engineering, University of California Los Angeles (2017 PLB Winner)

As an Associate Professor at the University of California, Mahendra holds a Ph.D. from UCLA, a M.S. from Syracuse University, and a B.Tech. from Indian Institute of Technology. Mahendra's extensive knowledge and research on molecular biology and microbial interactions has proclaimed her an expert on issues of pollution and bacteria and made her one of ten Nanotechnology Researchers in 2010. As a result of her research and extensive experiments, Mahendra has been honored with countless awards such as the Excellence in Review Award, the CH2M-Hill/AEESP Outstanding Doctoral Dissertation Award and the Best Technical Presentation Award.

Similar to her work, Shaily Mahendra's speeches suggest strategic and alternative ways to combat, reverse and measure toxicity and pollution occurring in natural environments.

**WRF Webinar: Virtual Congressional Briefing: Preparing for and Responding to Historic Drought and Wildfires**  
**August 3<sup>rd</sup>, 2021**

### **Webcast Summary:**

#### Overview

The Water Research Foundation convened a panel of leading global water experts to highlight the extraordinary effect drought and wildfires have on water resources and local communities. Water research plays an essential role in developing solutions and strategies that help communities protect and maintain access to water resources during extreme and unprecedented weather events. We invited you to attend this important virtual briefing to discuss the lasting impacts drought has on critical watersheds, including what is necessary for the successful management of water infrastructure when faced with cataclysmic wildfires.

The presenters offered valuable insights based on their experiences with these issues as the world continues to prepare for and respond to historic drought and wildfires. The United States is currently facing unprecedented drought and communities in Nevada and California are taking collaborative and historic steps to protect water resources in a rapidly changing environment. The General Managers of the Southern Nevada Water Authority and the Orange County Water District will illustrate the essential role that

water research plays in ensuring that water services remain resilient in the face of extreme events. The 2019-20 Australian bushfire season, colloquially known as Black Summer, was a period of unusually intense bushfires in many parts of Australia. North East Water's experience during these bushfires provides U.S. water managers with an important case study on lessons learned and response strategies. Dr. Christobel Ferguson of The Water Research Foundation moderated the panel to focus on the importance of helping communities prepare for and respond to historic drought and wildfires.

### **Presenter Biography Information**

**Peter Grevatt, PhD** — Chief Executive Officer, The Water Research Foundation

Peter Grevatt, PhD is CEO of The Water Research Foundation, a 501(c)(3) not-for-profit organization.

Dr. Grevatt has over 30 years of experience leading the implementation of public health and environmental protection programs including significant national leadership experience in the water sector. Most recently, he served as Director of EPA's Office of Ground Water and Drinking Water (OGWDW) where he was responsible for ensuring the safety of the nation's drinking water supply through the development and implementation of national drinking water standards, oversight and funding of state drinking water programs, and the implementation of source water protection and underground injection control programs. Prior to joining OGWDW in 2012, Dr. Grevatt served as Director of the Office of Children's Health Protection and as Senior Advisor to EPA's Administrator for Children's Environmental Health. In addition, Dr. Grevatt has held leadership roles in EPA's national hazardous waste and water quality programs. He received his MS and PhD degrees in Basic Medical Sciences from New York University Medical Center and earned his bachelor's degree in Biology from Earlham College in Richmond, Indiana.

**John J. Entsminger** — General Manager Las Vegas Valley Water District

John Entsminger is the general manager of the Las Vegas Valley Water District, which serves nearly 380,000 customer accounts, and the Southern Nevada Water Authority, which is responsible for providing water to local agencies that collectively serve 2 million residents and 40 million annual visitors. Prior to taking the helm of these agencies in early 2014, Entsminger was instrumental in the development of several groundbreaking regional and international water agreements. He has been appointed by Governor Sandoval to serve as Nevada's lead negotiator on Colorado River matters. Active in several national water associations, Entsminger is Vice President of the Association of Metropolitan Water Agencies and is a trustee of the Water Research Foundation and the Desert Research Institute Foundation.

**John Day** — Executive Operations North East Water (Australia)

As Executive Operations, John oversees the critical functions of water and wastewater treatment and delivery. Two other portfolios under his control are asset maintenance and control, and systems optimization which cover the environmental and drinking water quality management systems.

John has more than 25 years of experience in water and wastewater operational and asset management roles, both in the water and manufacturing industries. Additionally, John is a former Director of the

Water Industry Operators Association and is a member of the Institute of Water Administration and Australian Water Association.

**Mike Markus — General Manager, Orange County Water District**

Mike Markus is the general manager of the Orange County Water District. With more than 38 years of experience, Mike is well known for his expertise in large project implementation and water resource management. Mike obtained a Bachelor of Science degree in Civil Engineering from California State Polytechnic University at Pomona and a Master of Science degree in Civil Engineering from the University of Southern California. He is also a registered Civil Engineer in the State of California. During his 28-year career at the District, Mike was responsible for managing the implementation of the \$480 million Groundwater Replenishment System program. This program included a \$35 million design effort and the construction of seven individual projects, which amounted to approximately \$400 million. The largest of the projects was the \$300 million, 70 million gallons per day, Advanced Water Purification Facility. This project is the largest planned indirect potable reuse project in the world and has won many awards including the 2008 Stockholm Industry Water Award, 2009 ASCE Outstanding Civil Engineering Achievement Award, 2014 U.S. Water Prize and the 2014 Lee Kuan Yew Prize. Mike also currently serves on the Board of Directors of the American Academy of Water Resource Engineers, and the WaterReuse Association.

**Christobel Ferguson, PhD — Chief Innovation Officer, The Water Research Foundation**

Christobel has a Biomedical Science degree and a Master of Science from the University of Technology Sydney and a PhD from the University of New South Wales. Christobel worked as a Microbiologist in the water, environment, biotechnology and pharmaceuticals sectors for Sydney Water, Burns Philp, Reckitt and Colman, Tecra Diagnostics and Sydney Catchment Authority. She has experience as a Project Director and Project Manager leading a water science consulting team for Ecowise Environmental, ALS Water Resources and GHD. She spent several years managing a portfolio of Research and Development projects for water utilities, addressing emerging issues of concern and developing new methods, products, and technologies. More recently her focus has been the management of interdisciplinary technical teams to solve complex problems in water information, policy, and planning for NSW government. Her vision is to bring research and technology innovations to the water sector to achieve sustainable and productive outcomes from the management of natural resources. Christobel was a Director of the Australian Water Association from 2005 to 2009 and has recently joined The Water Research Foundation as their Chief Innovation Officer.

**WRF Webinar: Research and Development for Emerging Technologies: Part 1  
August 12<sup>th</sup>, 2021**

**Webcast Summary:**

Overview:

The Water Research Foundation (WRF) and the U.S. Department of Energy (DOE) will be highlighting a select group of advanced water resource recovery system projects recently awarded by DOE totaling \$27.5 million. These projects are led by teams from universities, water utilities, manufacturers, national laboratories, and small and minority-owned businesses, and will help provide sustainable water sources and affordable treatment options to industry, municipalities, agriculture, utilities, and the oil and gas sector.

**Presenter Biography Information**

**Ganesh Rajagopalan, PhD, PE, BCEE — Vice President/Applied Research Group Manager/Resource**

#### Recovery Practice Leader

Dr. Ganesh Rajagopalan is the Manager of the Applied Research Group for Kennedy/Jenks Consultants. He has nearly 25 years of experience in biosolids, wastewater treatment planning, design, and research. He is the Co-PI of the ongoing WRF study to characterize biogas quality during co-digestion. He was the co-PI for the recently completed WERF study to investigate unintended consequences of co-digestion. He holds a patent for the use of Nanoscale Particles with cationic polymers to improve sludge dewatering. He received his B.S in Civil Engineering from India, M.S. in Environmental Engineering from Virginia Tech and Ph.D. in Environmental Engineering from the University of Tennessee.

#### **Melissa Klembara** — Senior Technical Advisor (acting), Advanced Manufacturing Office U.S. Department of Energy

Melissa Klembara is currently acting as a Senior Technical Advisor in the U.S. Department of Energy's Advanced Manufacturing Office, where she manages over \$200 million in RD&D investments in the areas of energy-water nexus and the circular economy of plastics. Specifically, Melissa is leading DOE's National Alliance for Water Innovations (NAWI), a \$110 million desalination R&D consortium. Melissa is also co-leading a jointly funded R&D effort in AMO with the Bioenergy Technology Office (BETO) on the circular economy of plastics. Before joining AMO, Melissa served as a Chief of Staff for both the Deputy Assistant Secretary of Energy Efficiency and the Deputy Assistant Secretary of Renewable Power and worked for several years in BETO. Before joining the federal government, Melissa was a process engineer at International Paper Company. She holds a B.S. in Chemical Engineer from the University of Maryland as well as two master's degrees from Heriot-Watt University in Edinburgh, Scotland.

#### **Benjamin Bostick** — Associate Research Professor Columbia University

Benjamin Carlos Bostick is a professor of geochemistry at the Lamont-Doherty Earth Observatory of Columbia University. Dr. Bostick received his PhD from Stanford University. Since then, he has actively been involved in studying environmental systems at the molecular scale, and applying that research to address critical issues in environmental science and public health. He actively teaches courses in environmental policy, environmental research methods, physical and quantum chemistry, and public health. In his project, he will be developing improved methods of water treatment to address arsenic and uranium contamination that is widespread in Native American communities in the Great Plains and Southwest.

#### **David Jassby, PhD** — Associate Professor University of California, Los Angeles

David Jassby is an associate professor in the Department of Civil and Environmental Engineering at UCLA. He received his Ph.D. in Civil and Environmental Engineering from Duke University (2011), an M.S. in Civil and Environmental Engineering from UC Davis (2005), and a B.Sc. in Biology from Hebrew University (2002). David's research is primarily concerned with membrane separations, environmental electrochemistry, water treatment technologies, and CO<sub>2</sub> sequestration. His lab is currently engaged in research concerning membrane development, desalination, industrial wastewater treatment, oil/water separations, and the electrochemical treatment of contaminated water. He holds several patents on various electrochemical processes, and has published more than 60 peer-reviewed manuscripts in peer-reviewed journals.

#### **Haiqing Lin, PhD** — University at Buffalo, The State University of New York Department of Chemical and Biological Engineering

Dr. Haiqing Lin is a Professor at University at Buffalo (UB), The State University of New York. He received his Ph.D. in Chemical Engineering from the University of Texas at Austin in 2005 and then was dedicated to membrane product development at Membrane Technology and Research, Inc. (MTR). He joined UB as an assistant professor in 2013 and was promoted to full professor in 2021. His research focuses on

advanced membrane materials for gas separations (such as carbon capture from flue gas and air) and water purification. He has over 100 SCI tracked journal publications (citations: >7200 @Google Scholar in July 2021), and he is also a co-inventor of 10 patents/applications for novel membranes and processes. He serves as board directors of North American Membrane Society (NAMS) and AIChE Separation Division. He is a recipient of NSF CAREER award in 2016, AIChE Separation Division Innovation Award in 2020, and UB's Exceptional Scholar: Sustained Achievement Award in 2021.

**Jeffrey McCutcheon, PhD — Professor, Chemical & Biomolecular Engineering Department University of Connecticut**

Jeffrey McCutcheon is a Professor in the Chemical & Biomolecular Engineering Department at the University of Connecticut. He received a B.S. in Chemical Engineering from the University of Dayton and his Ph.D. in Chemical Engineering from Yale University. Since his appointment in Fall of 2008, he has established a research laboratory focused on membrane separations. He has raised over \$7M to support research in the areas of forward osmosis, membrane distillation, nanofiltration, reverse osmosis, pervaporation, vapor permeation, organic solvent nanofiltration and additive manufacturing for membranes. He has published over 85 refereed publications, 3 book chapters, and several patents on membrane technology. He has served the separations community as a Director for both the AIChE Separations Division and the North American Membrane Society (NAMS) and recently served as President of NAMS. He has received numerous awards including the 3M Nontenured Faculty Award, the Solvay Advanced Polymers Young Faculty Award, The DuPont Young Faculty Award, and the FRI/John G. Kunesh Award from the AIChE Separations Division. He recently was the winner of the 2019 Global Water Summit Water Technology Idol competition for his work on 3D printed membranes and was named a quarter- and semi-finalist of the American Made Challenges Solar Desalination Prize from the Department of Energy for his work on ceramic membranes for solar-driven membrane distillation. He was inducted into the Connecticut Academy of Science and Engineering in 2021. In 2017, he was named the Executive Director of Fraunhofer USA Center for Energy Innovation and served for 3 years before taking the Center to its now independent status as the Connecticut Center for Applied Separations Technologies (CCAST). CCAST is dedicated to applied research in the membrane technology and separations space and is charged to interact directly with industries in need of solutions to separations challenges.

**Jose Bolorinos, PhD — Student Stanford University**

Jose Bolorinos is a PhD candidate in Civil and Environmental Engineering and an MS student in Statistics. Jose's research focuses on data-driven, systems-level strategies for coordinating urban water and energy supply infrastructure. As part of this work, he has investigated policy approaches that better understand and manage the lifecycle impacts of the energy sector on watersheds, air quality, and carbon emissions. Jose has also developed closed-loop customer monitoring and segmentation tools that allow water and electricity utilities to quickly track the responses of their customers to demand shocks inside and outside of their service areas. Currently, he is developing data-driven methods for optimal design and operation of energy storage in the wastewater treatment sector. His work has been featured at the California Data Collaborative, Stanford's Big Earth Water Hackathon, and AI for Climate Change Initiative. Prior to coming to Stanford, Jose worked as a data scientist for a healthcare consultancy subcontracted by the federal government to manage its Medicare and Medicaid claims databases. He received a BA in Economics from UC Berkeley and an MS in Environmental Engineering and Science from Stanford University. He was part of the start-up operations team at the Bill & Cloy Resource Recovery Center, an

experimental, pilot-scale wastewater treatment facility launched recently on the Stanford campus to accelerate innovative approaches to wastewater treatment.

## **WRF Webinar: Research and Development for Emerging Technologies: Part 2**

**August 12<sup>th</sup>, 2021**

### **Webcast Summary:**

#### Overview:

The Water Research Foundation (WRF) and the U.S. Department of Energy (DOE) are highlighting a select group of advanced water resource recovery system projects recently awarded by DOE totaling \$27.5 million.

These projects are led by teams from universities, water utilities, manufacturers, national laboratories, and small and minority-owned businesses, and will help provide sustainable water sources and affordable treatment options to industry, municipalities, agriculture, utilities, and the oil and gas sector.

### **Presenter Biography Information**

#### **Damilola Daramola, PhD** — Assistant Professor Ohio University

Dr. Damilola Daramola is currently an Assistant Professor in Department of Chemical and Biomolecular Engineering and Assistant Director for Research at the Institute for Sustainable Energy and the Environment both at Ohio University. In these roles, Dr. Daramola conducts research in wastewater remediation, polymer upcycling, thermoset composites, and computational surface science with 12 years of experience in these areas. Dr. Daramola is the lead investigator on a state and federal grant on resource recovery from animal and human waste and he is a published author on 9 peer-reviewed journal articles and 1 book chapter in these research areas. He is a 2-time Ohio University alumnus with a B.S. in Chemical Engineering received in 2004 and a Ph.D. in Chemical Engineering received in 2011 under Professor Gerardine Botte

#### **Prathap Parameswaran, PhD** — Associate Professor Kansas State University

Anmol Vishwakarma is a PhD student in Civil Engineering at Virginia Tech. His doctoral research investigates the risks and lifecycle economics of water pipeline infrastructure systems using advanced mathematical modeling techniques. Anmol also holds a B.E. degree in Environmental Engineering from the Delhi Technological University, India, and an M.S. degree in Environmental Engineering from Virginia Tech. He aspires to advance the state of research of water infrastructure management using artificial intelligence techniques.

#### **Taeyoung Kim, PhD** — Assistant Professor Clarkson University

Taeyoung Kim is an assistant professor at Clarkson University with a joint appointment to the Department of Chemical and Biomolecular Engineering and Institute for a Sustainable Environment (ISE). Dr. Kim received a doctorate in the School of Chemical and Biological Engineering from Seoul National University in 2015, and was a postdoctoral scholar in the Department of Civil and Environmental Engineering at The Pennsylvania State University before joining Clarkson in 2018. His research focuses on the application of electrochemical principles and technologies to address environmental and

sustainability challenges in water and energy systems. Specific research topics include water desalination and resource recovery from wastewater.

**Junhong Chen, PhD** — Crown Family Professor University of Chicago

Junhong Chen is currently Crown Family Professor of Pritzker School of Molecular Engineering at the University of Chicago and Lead Water Strategist & Senior Scientist at Argonne National Laboratory. Prior to coming to Chicago, Dr. Chen served as a program director for the Engineering Research Centers program of the US National Science Foundation (NSF) and the director of NSF Industry-University Cooperative Research Center (I/UCRC) on Water Equipment & Policy (WEP). He founded NanoAffix Science LLC to commercialize real-time water sensors based on 2D nanomaterials. His current research focuses on nanomaterial innovation for sustainable energy and environment. Dr. Chen has published over 250 journal papers and has been listed as a highly cited researcher (top 1%) in materials science/cross-field by Clarivate Analytics over the last four years. He is an elected fellow of National Academy of Inventors and the American Society of Mechanical Engineers (ASME).

**Melissa Klembara** — Senior Technical Advisor (acting) Advanced Manufacturing Office U.S. Department of Energy

Melissa Klembara is currently acting as a Senior Technical Advisor in the U.S. Department of Energy's Advanced Manufacturing Office, where she manages over \$200 million in RD&D investments in the areas of energy-water nexus and the circular economy of plastics. Specifically, Melissa is leading DOE's National Alliance for Water Innovations (NAWI), a \$110 million desalination R&D consortium. Melissa is also co-leading a jointly funded R&D effort in AMO with the Bioenergy Technology Office (BETO) on the circular economy of plastics. Before joining AMO, Melissa served as a Chief of Staff for both the Deputy Assistant Secretary of Energy Efficiency and the Deputy Assistant Secretary of Renewable Power and worked for several years in BETO. Before joining the federal government, Melissa was a process engineer at International Paper Company. She holds a B.S. in Chemical Engineer from the University of Maryland as well as two master's degrees from Heriot-Watt University in Edinburgh, Scotland.

**Sankar Nair, PhD** — Professor Georgia Institute of Technology

Sankar Nair is a Professor, Associate Chair, and Simmons Faculty Fellow in the School of Chemical & Biomolecular Engineering at Georgia Tech. His research interests are in the science and engineering of nanoporous materials for the development of sustainable chemical processes. His current work targets nanoporous membrane and adsorption-based separation systems and processes that can enable new technological paths in biorefining, plastics upcycling, and industrial water management.