



June 29, 2021

Jing Chao, PE  
Division of Drinking Water  
State Water Resources Control Board  
1350 Front Street, Room 2050  
San Diego, CA. 92101

**SUBJECT: Confirming Co-Chairs and Members of NWRI Expert Panel**

Dear Jing Chao:

NWRI is pleased to present this roster of experts to support the State Water Board Division of Drinking water in developing the statewide water recycling criteria (regulations) for direct potable reuse (DPR). The purpose of the expert panel is to review the proposed DPR regulations and adopt a finding as to whether, in its expert opinion, the proposed regulations would adequately protect public health.

The panel members are:

- **James (Jim) Crook, PhD, PE (Panel Co-Chair)**, is an environmental engineering consultant with more than 45 years of experience in the state government and consulting engineering arenas, serving public and private sectors in the United States and abroad. He has authored more than 100 publications and is an internationally recognized expert in water reclamation and reuse. Crook spent 15 years directing the California Department of Health Services water reuse program and developed California's first comprehensive water reuse criteria. He is a Water Environment Federation Fellow and was the AAEE 2002 Kappe Lecturer and the WateReuse Association 2005 Person of the Year. Crook has a BS in Civil Engineering from University of Massachusetts and an MS and PhD in Environmental Engineering from University of Cincinnati. He is a registered professional engineer in California and Florida.
- **Adam Olivieri, DrPH, PE, (Panel Co-Chair)**, is Vice President and a principal at EOA, Inc., an environmental consulting firm that specializes in water stewardship. Olivieri has more than 30 years of experience in leading technical and regulatory projects associated with wastewater, water recycling and reuse, groundwater, and stormwater, and is an expert in public health risk assessment. Prior to founding EOA, Olivieri was a staff engineer at the California Regional Water Quality Control Board for the San Francisco Bay Region and as staff specialist with the School of Public Health at University of California,

**Kevin M. Hardy • Executive Director • [khardy@nwri-usa.org](mailto:khardy@nwri-usa.org) • [www.nwri-usa.org](http://www.nwri-usa.org)**

**JPA MEMBERS:** Inland Empire Utilities Agency • Irvine Ranch Water District • Los Angeles Department of Water and Power • Orange County Sanitation District • Orange County Water District • West Basin Municipal Water District



Berkeley. He holds an MS in Civil and Sanitary Engineering from University of Connecticut, an MPH and DrPH in Environmental Health Sciences from University of California, Berkeley, and is a registered engineer in California.

- **Richard (Dick) Bull, PhD**, is a consulting Toxicologist and researcher with MoBull Consulting where he conducts studies on the chemical problems encountered in water for water utilities and for federal, state, and local governments. He is also Professor Emeritus at Washington State University. Bull previously served as a senior staff scientist at the DOE Pacific Northwest National Laboratory; Professor of Pharmacology and Toxicology at Washington State University; and Director of the Toxicology and Microbiology Division in the Cincinnati Laboratories for US EPA. He has served on international scientific working groups of the World Health Organization, and of the International Agency for Research on Cancer addressing carcinogenic activity of a wide number of regarding various environmental contaminants and medical devices. Bull served several terms as a member of the US EPA Science Advisory Board and as Chair of the Drinking Water Committee and served as a member and/chair of several committees convened by the National Academy of Sciences. Bull holds a PhD in Pharmacology from University of California, San Francisco, and a BS in Pharmacy from University of Washington.
- **Jörg Drewes, PhD**, is Chair Professor of Urban Water Systems Engineering at Technical University of Munich (TUM) Germany. Previously, he served as Full Professor of Civil and Environmental Engineering at the Colorado School of Mines and as Director of the National Science Foundation Engineering Research Center on Reinventing the Nation's Urban Water Infrastructure (ReNUWIt). His research includes development of sustainable urban water systems for future generations. These systems include energy recovery from waste streams, membrane hybrid processes, engineered natural treatment systems, groundwater recharge, water recycling, and the fate and transport of emerging trace organic chemicals in the aqueous environment. Drewes has published more than 300 journal papers, book contributions, and conference proceedings. His awards include the AWWA Rocky Mountain Section Outstanding Research Award and the Quentin Mees Research Award. Drewes holds a Dipl.-Ing. and Dr.-Ing. degree in Environmental Engineering from the Technical University of Berlin, Germany.
- **Charles (Chuck) Gerba, PhD**, is Professor of Virology in the Department of Environmental Science at University of Arizona. His recent research encompasses the transmission of pathogens by water, food and fomites; fate of pathogens in land applied wastes; development of new disinfectants; domestic microbiology and microbial risk assessment. He has authored more than 500 articles including several books in environmental microbiology, risk assessment, and pollution science. He is a fellow of the American Academy of Microbiology, American Association for the Advancement of Science, and the International Water Association. He is on the editorial board of the *Journal of Water and Health* and has served on the Science Advisory Board of the US EPA and the Food Advisory Board of the US FDA. Gerba received the A. P. Black Award from the American Water Works Association and the McKee medal from the Water Environment Federation. He holds a PhD in Microbiology from the University of Miami.



- **Charles (Chuck) Haas, PhD**, is LD Betz Professor of Environmental Engineering and Program Head at Drexel University. He has more than 45 years of experience conducting research in water treatment, risk assessment, environmental modeling and statistics, microbiology, and environmental health. Haas previously served on the faculties of Rensselaer Polytechnic Institute and Illinois Institute of Technology. He is a 2021 Member of the National Academy of Engineering and recipient of the 2021 College of Engineering Outstanding Career Research Award. Haas received the 2017 Athalie Richardson Irvine Clarke Prize for leadership in water research, science, and technology. He holds a BS in Biology and an MS in Environmental Engineering from Illinois Institute of Technology, and a PhD in Environmental and Civil Engineering from University of Illinois.
- **Amy Pruden, PhD**, is a University Distinguished Professor in the Department of Civil and Environmental Engineering at Virginia Tech. Her research, funded by The National Science Foundation, US Department of Agriculture, Water Research Foundation, the Alfred P. Sloan Foundation, and the U.S. Centers for Disease Control, focuses on advancing practical means of antibiotic resistance monitoring, mitigation, and risk assessment. She serves on two National Academy of Sciences Engineering and Medicine (NASEM) committees: the Environmental Health Matters Initiative and the One Health Action Collaborative. Recently, she served on the NASEM committee on management of *Legionella* in Water Systems and co-authored a consensus report. She has authored more than 175 peer-reviewed scientific journal articles and is an Associate Editor of *Environmental Science & Technology*. Pruden is the recipient of the Presidential Early Career Award in Science and Engineering, the Paul L. Busch Award for innovation in water research, the ReciPharm International Environmental Award, and is a fellow of the International Water Association. Pruden received a BS in Biology and a PhD in Environmental Science from University of Cincinnati.
- **Joan Rose, PhD**, is Homer Nowlin Endowed Chair for Water Research at Michigan State University. Rose is widely regarded as the world's foremost authority on the microorganism *Cryptosporidium* and was the first person to present a method for detecting this pathogen in water supplies. She examines full-scale water treatment systems for the removal of pathogens. She has focused on protecting public health for more than 20 years and has published more than 300 articles. Rose received the 2001 Athalie Richardson Irvine Clarke Prize for her advances in microbial water quality issues and she is a member of the of the National Academy of Engineering. She chaired the Science Advisory Board for the EPA Drinking Water and serves on the Science Advisory Board for the Great Lakes. Rose received a BS in Microbiology from the University of Arizona, an MS in Microbiology from the University of Wyoming, and a PhD in Microbiology from the University of Arizona.
- **Shane Snyder, PhD**, is Professor in the College of Engineering at the University of Arizona and the Co-Director of the Arizona Laboratory for Emerging Contaminants. His research has focused on the identification, fate, and health relevance of emerging water pollutants. Snyder and his teams have published more than 100 peer-reviewed manuscripts and chapters on emerging contaminant analysis, treatment, and toxicology. Snyder has served two terms on the advisory committee to the US EPA Endocrine Disruptor Screening Program and was an expert panel member for development of the US EPA CCL3. He was a member of the National Academy of Science's National Research Council Committee on



Water Reuse and has served twice on the California Chemicals of Emerging Concern Expert Panels.

Recently, he was appointed to the US EPA Science Advisory Board for drinking water. Snyder is a visiting professor at the National University of Singapore, where he leads research on water reuse technologies and implications for public health. He received a BA in Chemistry from Thiel College and a PhD in Zoology and Environmental Toxicology from Michigan State University.

- **Jacqueline E. Taylor, REHS, MPA**, serves on the National Blue Ribbon Commission for Onsite Non-potable Water Systems. Taylor is a Registered Environmental Health Specialist with more than 30 years of experience in the field of environmental health, including managing and directing programs for County of Los Angeles Public Health, which is one of the largest, most diverse, and progressive environmental health departments in the nation. Her experience has involved policy development and regulatory oversight of food and housing protection, water and wastewater resource management, recreational water and beach monitoring, cross connections and water pollution control, land use planning, solid waste management, radiation management, lead poisoning prevention, staff development, and program planning.
- **George Tchobanoglous, PhD, PE**, is Professor Emeritus of Civil and Environmental Engineering at University of California, Davis. For more than 35 years he taught courses on water and wastewater treatment and solid waste management. Tchobanoglous has authored or coauthored more than 550 publications, including 23 textbooks and eight engineering reference books. Along with coauthors, he has written extensively on water reuse, including the textbook *Water Reuse: Issues, Technologies, and Applications*; the WaterReuse report *Direct Potable Reuse: A Path Forward*; and the NWRI White Paper *Direct Potable Reuse: Benefits for Public Water Supplies, Agriculture, the Environment, and Energy Conservation*. Tchobanoglous received the Athalie Richardson Irvine Clarke Prize in 2003, and is a member of the National Academy of Engineers. He holds a BS in Civil Engineering from the University of the Pacific, an MS in Sanitary Engineering from University of California, Berkeley, and a PhD in Environmental Engineering from Stanford University.
- **Michael (Mike) P. Wehner, MPA**, is a consultant with 40 years of experience in water quality control and water resources management. He served 20 years with the Orange County Health Care Agency and then became assistant general manager for the Orange County Water District (OCWD), which operates the largest indirect potable reuse project in the United States. He also managed OCWD's 8-year Santa Ana River Water Quality and Health Study, which evaluated the use of effluent-dominated river waters for groundwater recharge. Wehner received an MPA from California State University Long Beach and a BS in Biological Sciences from the University of California, Irvine

We appreciate the opportunity to support the Division of Drinking Water with this project. Please contact Suzanne Sharkey at [ssharkey@nwri-usa.org](mailto:ssharkey@nwri-usa.org) or (949) 258-2093 with any questions.

Sincerely,

NATIONAL WATER RESEARCH INSTITUTE



NWRI Panel for California Statewide Water Recycling Criteria: Expert Profiles

A handwritten signature in blue ink, appearing to read 'Kevin M. Hardy', is written over a faint horizontal line.

Kevin M. Hardy  
Executive Director