

NATIONAL WATER RESEARCH INSTITUTE

Expert Panel on Potable Reuse for the State Water Resource Control Board Division of Drinking Water

PANEL MEMBER BIOGRAPHIES

Adam Olivieri, Ph.D., P.E. (Panel Co-Chair)

Vice President

EOA Inc. (Oakland, CA)

Adam Olivieri has 35 years of experience in the technical and regulatory aspects of water recycling, groundwater contamination by hazardous materials, water quality and public health risk assessments, water quality planning, wastewater facility planning, urban runoff management, and on-site waste treatment systems. He has gained this experience through working as a staff engineer with the California Regional Water Quality Control Board (San Francisco Bay Region), as staff specialist (and Post-doc fellow) with the School of Public Health at the University of California, Berkeley, project manager/researcher for the Public Health Institute, and as a consulting engineer. He is currently the Vice president of EOA, Inc., where he manages a variety of projects, including serving as Santa Clara County Urban Runoff Program's Manager since 1998. Olivieri is also the author or co-author of numerous technical publications and project reports. He received a B.S. in Civil Engineering from the University of Connecticut, an M.S. in Civil and Sanitary Engineering from the University of Connecticut, and both an MPH and Dr.PH in Environmental Health Sciences from University of California, Berkeley.

James Crook, Ph.D., P.E. (Panel Co-Chair)

Water Reuse and Environmental Engineering Consultant (Boston, MA)

Jim Crook is an environmental engineer with more than 35 years of experience in state government and consulting engineering arenas, serving public and private sectors in the U.S. and abroad. He has authored more than 100 publications and is an internationally recognized expert in water reclamation and reuse. He has been involved in numerous projects and research activities involving public health, regulations and permitting, water quality, risk assessment, treatment technology, and all facets of water reuse. Crook spent 15 years directing the California Department of Health Services' water reuse program, during which time he developed California's first comprehensive water reuse criteria. He also spent 15 years with consulting firms overseeing water reuse activities and is now an independent consultant specializing in water reuse. He currently serves on several advisory panels and committees sponsored by NWRI and others. Among his honors, he was selected as the American Academy of Environmental

Engineers' 2002 Kappe Lecturer and the WateReuse Association's 2005 Person of the Year. Crook received a B.S. in Civil Engineering from the University of Massachusetts and both an M.S. and Ph.D. in Environmental Engineering from the University of Cincinnati.

Michael Anderson, Ph.D.

*Professor of Applied Limnology and Environmental Chemistry and Chair
Department of Environmental Sciences
University of California, Riverside (Riverside, California)*

Michael Anderson, a Professor of Applied Limnology and Environmental Chemistry, has taught courses at the University of California, Riverside, since 1990. His research focus includes water and soil sciences, with particular emphasis in applied limnology and lake/reservoir management; surface water quality and modeling; fate of contaminants in waters, soils, and sediments; and environmental chemistry. Current research projects include laboratory, field, and modeling studies in support of the development of species conservation habitat at the Salton Sea, sponsored by the California DWR and DFG, and a survey of organochlorine pesticides and Polychlorinated Biphenyls (PCBs) in McGrath Lake that is funded by the Los Angeles Regional Water Quality Control Board. He and his students also recently completed studies quantifying the abundance and distribution of quagga mussel veligers in the reservoirs of the Colorado River Aqueduct, as well as assessing the ecological and biological conditions at Lake Elsinore. In addition, he has served on various panels and workgroups, including as member of the California Department of Water Resource's Salton Sea Hydrologic Technical Workgroup (2007-2008). Anderson received a B.S. in Biology from Illinois Benedictine College, M.S. in Environmental Studies from Bemidji State University, and Ph.D. in Environmental Chemistry from Virginia Tech.

Richard Bull, Ph.D.

*Consulting Toxicologist
MoBull Consulting (Richland, WA)*

Since 2000, Richard Bull has been a Consulting Toxicologist with MoBull Consulting, where he conducts studies on the chemical problems encountered in water for water utilities, as well as federal, state, and local governments. Bull is a Professor Emeritus at Washington State University, where he maintains Adjunct Professor appointments in the College of Pharmacy and the Department of Environmental Science. Formerly, he served as a senior staff scientist at DOE's Pacific Northwest National Laboratory, Professor of Pharmacology/Toxicology at Washington State University, and Director of the Toxicology and Microbiology Division in the Cincinnati Laboratories for the U.S. Environmental Protection Agency. Bull has published extensively on research on central nervous system effects of heavy metals, the carcinogenic and toxicological effects of disinfectants and disinfection by-products, halogenated solvents,

acrylamide, and other contaminants of drinking water. He has also served on many international scientific committees convened by the National Academy of Sciences, World Health Organization, and International Agency for Research on Cancer regarding various contaminants of drinking water. Bull received a B.S. in Pharmacy from the University of Washington and a Ph.D. in Pharmacology from the University of California, San Francisco.

Dr.-Ing. Jörg E. Drewes

*Professor, Director of Research (NSF Engineering Research Center ReNUWIt)
Colorado School of Mines (Golden, CO)*

Jörg Drewes has taught courses as in the Department of Civil and Environmental Engineering at Colorado School of Mines (CSM) since 2001. Dr. Drewes is the Director of Research for the NSF Engineering Research Center *ReNUWIt*. He also serves as Co-Director of CSM's Advanced Water Technology Center (AQWATEC), which is dedicated to advancing the research and development of novel water treatment processes and hybrid systems to enable sustainable and energy efficient utilization of impaired water sources to provide potable and non-potable water supplies. Drewes is actively involved in research in the areas of water treatment and non-potable and potable water reuse. Current research interests include treatment technologies leading to indirect potable reuse and the fate and transport of persistent organic compounds in these systems. He has published more than 200 journal papers, book contributions, and conference proceedings, and was appointed to the National Research Council Committee on Water Reuse as an Approach for Meeting Future Water Supply Needs. Drewes received a Cand. Ing. (B.S.), Dipl. Ing. (M.S.), and Doctorate (Dr.-Ing.) in Environmental Engineering from the Technical University of Berlin in Germany.

Charles Haas, Ph.D., P.E.

*Department Head, L.D. Betz Professor of Environmental Engineering
Drexel University (Philadelphia, PA)*

Charles Haas is the Department Head of the Civil, Architectural, and Environmental Engineering at Drexel University since 1991. He is also the L.D. Betz Professor of Environmental Engineering and Director of the Drexel Engineering Cities Initiative. Prior to joining Drexel, he served on the faculties of Rensselaer Polytechnic Institute and the Illinois Institute of Technology. Haas specializes in water treatment, risk assessment, environmental modeling and statistics, microbiology, and environmental health. He received a B.S. in Biology and M.S. in Environmental Engineering, both from the Illinois Institute of Technology. He also received a Ph.D. in Environmental Engineering from the University of Illinois at Urbana-Champaign.

Walter Jakubowski

Consultant

WaltJay Consulting (Spokane, Washington)

Walter Jakubowski has degrees in Pharmacy from Brooklyn College of Pharmacy, Long Island University; in microbiology from Oregon State University, and graduate training in epidemiology from the University of Minnesota. He has research publications on hospital pharmacy; on microorganisms in oysters and clams under the federal Shellfish Sanitation Program, and more than 40 peer-reviewed publications on determining the health effects and public health significance of pathogens, especially intestinal protozoa and viruses, in drinking water, waste water and municipal sewage sludge. He has served as a consultant to the World Health Organization on pathogenic intestinal protozoa (for development of the International Drinking Water Guidelines), and to the Pan-American Health Organization on environmental virus methods. He was instrumental in conducting the first international symposium on *Legionella* and Legionnaire's Disease at the Centers for Disease Control. He has more than 48 years of experience working with waterborne pathogens, especially enteric viruses, *Giardia* and *Cryptosporidium*. He initiated landmark studies on the human infectious dose of *Cryptosporidium* and chaired the Joint Task Group on Pathogenic Intestinal Protozoa for *Standard Methods for the Examination of Water and Waste Water* from 1978 to 2005. He was a charter member of U.S. EPA's Pathogen Equivalency Committee and served on that committee until his retirement from the U.S. Public Health Service/Environmental Protection Agency in 1997. Since then, he has been practicing as a private consultant while serving on various professional committees, panels, and boards.

Perry McCarty, Ph.D., P.E.

Silas H. Palmer Professor of Civil and Environmental Engr. Emeritus

Stanford University (Stanford, CA)

Perry McCarty is the Silas H. Palmer Professor of Civil and Environmental Engineering Emeritus at Stanford University. McCarty received the Clarke Prize Award in 1997 for his significant contributions to the areas of water treatment, reclamation, groundwater recharge, and water chemistry and microbiology. He is universally recognized for his research on understanding contaminant behavior in groundwater aquifers and sediments. McCarty has received numerous honors, including being elected to the National Academy of Engineering and American Academy of Arts and Sciences, as well as receiving an honorary doctorate from the Colorado School of Mines. He was also awarded the John and Alice Tyler Prize for Environmental Achievement in 1992 and the Stockholm Water Prize in 2007. McCarty received his B.S. from Wayne State University, and both his M.S. and Sc.D. from Massachusetts Institute of Technology.

Kara Nelson, Ph.D.

Professor

University of California, Berkeley (Berkeley, CA)

Kara Nelson is a Professor in Civil and Environmental Engineering at the University of California, Berkeley. She received her B.A. degree in biophysics from U.C. Berkeley, her M.S.E. degree in environmental engineering from the University of Washington, and her Ph.D. in environmental engineering from U.C. Davis. Her research program addresses critical issues at the intersection of public health and the environment, with a focus on reducing the threat posed by waterborne pathogens by improving our engineering infrastructure to make it more effective, affordable, as well as maximize its environmental benefits. Specific research areas include mechanisms of pathogen inactivation, molecular techniques for pathogen detection, optimizing treatment processes, water reuse, and challenges with providing safe drinking water and sanitation in the developing world. Dr. Nelson has published over 50 articles in peer-reviewed journals, including two invited reviews, and one book chapter. She is the Director of Graduate Education at the National Science Foundation Engineering Research Center for Reinventing our Nation's Urban Water Infrastructure (ReNUWIt), the faculty leader of the Research Thrust Area on Safe Water and Sanitation at Berkeley Water Center. Dr. Nelson was awarded the Presidential Early Career Award for Scientists and Engineers (PECASE) at a ceremony in the White House in 2004. This award is the nation's highest honor for scientists in the early stages of their career.

Joan B. Rose, Ph.D.

Homer Nowlin Endowed Chair for Water Research

Michigan State University (East Lansing, MI)

Joan Rose, a professor at Michigan State University, has made groundbreaking advances in understanding water quality and protecting public health for more than 20 years and has published over 300 articles. She 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. In 2001, she received the Athalie Richardson Irvine Clarke Prize from NWRI for her advances in microbial water-quality issues. She served as the Chair of the Science Advisory Board for the U.S. Environmental Protection Agency's Drinking Water Committee for 4 years, and currently serves on the Science Advisory Board for the Great Lakes. In addition, she is Co-Director of the Center for Water Sciences (which includes work with the Great Lakes and Human Health Center of the National Oceanic & Atmospheric Administration) at Michigan State University, where she is also Director of the Center for Advancing Microbial Risk Assessment. Rose received a B.S. in Microbiology from the University of Arizona, an M.S. in Microbiology from the University of Wyoming, and a Ph.D. in Microbiology from the University of Arizona.

David Sedlak, Ph.D.

*Professor, Department of Civil and Environmental Engineering
University of California, Berkeley (Berkeley, CA)*

David Sedlak is a Professor of Civil and Environmental Engineering at the University of California, Berkeley, and his research focus is on the fate of chemical contaminants, with the long-term goal of developing cost-effective, safe, and sustainable systems to manage water resources. Sedlak's previous experience includes Visiting Academic at the University of Queensland in Australia, Visiting Associate Professor at the Swiss Federal Institute for Environmental Science and Technology in Switzerland, and Staff Scientist at ENVIRON Corporation. He has individually or co-authored over 70 peer-reviewed publications among many other publications and presentations. Sedlak will publish a book in January called "Water 4.0: The Past, Present, and Future of The World's Most Vital Resource" where he points out that most of the population gives little thought to the hidden systems that bring us water and take it away and how these marvels of engineering face challenges that cannot be solved without a fundamental change to our relationship with water. Sedlak received his B.S. in Environmental Science from Cornell University and his Ph.D. in Water Chemistry from the University of Wisconsin.

Tim Wade, Ph.D.

*Epidemiology Branch Chief
United States Environmental Protection Agency (Durham, NC)*

Tim Wade is the Epidemiology Branch Chief at the United States Environmental Protection Agency (U.S. EPA) and Assistant Professor of Epidemiology at the University of North Carolina, Chapel Hill. Wade has been working with the U.S. EPA since 2005, conducting a series of epidemiologic studies to evaluate the health effects of arsenic exposure in well water in Inner Mongolia. As Branch Chief, Wade determines research priorities, directs staff and post-doctoral students, and manages an annual budget of over \$1 million annually. In 2011, Wade received the EPA Office of Water Bronze Medal for his exceptional service to the Office of Water in the development of recreational water quality criteria. He received a B.A. in Biological Science from California Polytechnic at Pomona, a B.A. in Psychobiology from Claremont McKenna College, and both an MPH and Ph.D. in Epidemiology from the University of California at Berkeley.