

APPENDIX A: PANEL BIOGRAPHIES

JAMES CROOK, Ph.D., P.E.

Environmental Engineering Consultant (Boston, Massachusetts)

Jim Crook is an environmental engineer with more than 37 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 Public Health's 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 has served on several advisory Panels and committees convened by the National Academy of Sciences, NWRI, and others. Among his honors, he was selected as the American Academy of Environmental Engineers' 2002 Kappe Lecturer and the WaterReuse 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. He is a registered professional engineer in California and Florida.

RICHARD BULL, Ph.D.

Consulting Toxicologist

MoBull Consulting (Richland, Washington)

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 retired Professor of Pharmacology/Toxicology from 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.

JEAN-FRANÇOIS DEBROUX, Ph.D.

*Director, Advanced Technologies Group
Kennedy/Jenks Consultants (San Francisco, CA)*

At Kennedy/Jenks Consultants, Jean Debroux serves as Director of the Advanced Technologies Group, which was formed to solve technologically challenging problems. Part of this effort includes performing pilot and field studies for regulated and emerging contaminants and evaluates the cost impacts of complying with Safe Drinking Water Act regulations. A water quality expert, Debroux has extensive experience and expertise working with water utilities and research organizations in water treatment and water reuse issues, and is an active member of the WaterReuse Foundation, where he serves on the Research Advisory Committee. Debroux received a B.S. in Chemical Engineering from the University of South Florida, and both an M.S. in Environmental Engineering and Ph.D. in Civil Engineering from the University of Colorado, Boulder. In addition, he attended the Environmental Management Institute at Tufts University and has served as a Post-Doctoral Research Fellow and Lecturer at Stanford University and as a Research Fellow at Université de Poitiers, France.

DR.-ING. JÖRG E. DREWES (Panel Chair)

*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.

PETER FOX, Ph.D.

*Professor, School of Sustainable Engineering and the Built Environment
Arizona State University (Tempe, AZ)*

Peter Fox is a Professor in the School of Sustainable Engineering and the Built Environment at Arizona State University (ASU) and serves as the coordinator of Environmental Engineering at ASU. He previously served as Director of the National Center for Sustainable Water Supply, which researched indirect potable reuse at numerous field sites in both Arizona and California. His professional interests include water reuse, biological treatment processes, and combined biological/adsorptive systems. For the last 14 years, he has focused his work on natural treatment systems and water reuse; recently, he has begun to expand his expertise on sustainable water systems to include desalination. Fox served as an Associate Editor of the American Society of Civil Engineering *Journal of Environmental Engineering*, and has published over 100 papers and presentations. He has also served on the National Academy of Science ad-hoc committee to assess Sustainable Underground Storage and was an executive committee member for the development of the national roadmap for desalination and water purification. Fox also authored the groundwater recharge chapter of the Metcalf and Eddy textbook, *Water Reuse*. Fox received a B.S. Chemical Engineering and both an M.S. and Ph.D. in Civil and Environmental Engineering from the University of Illinois.

SHANE SNYDER, Ph.D.

*Professor, College of Engineering
Co-Director, Arizona Laboratory for Emerging Contaminants
The University of Arizona (Tucson, AZ)*

Shane Snyder joined the University of Arizona faculty in 2010, where he is a Professor in the College of Engineering. He is also the Co-Director of the Arizona Laboratory for Emerging Contaminants. For over 15 years, his research has focused on the identification, fate, and health relevance of emerging water pollutants. In 2000, he became the first R&D Project Manager at the Southern Nevada Water Authority (SNWA) and was a founding member of SNWA's Applied R&D Center. In 2008, he was one of six experts invited to testify before the U.S. Senate regarding pharmaceuticals in U.S. waters. He has since been invited to brief the U.S. Congress three additional times. Snyder has served two terms on the federal advisory committee to EPA's Endocrine Disruptor Screening Program and was an invited expert Panel member for the development of EPA's CCL3. He is also a member of the National Research Council's Committee on Water Reuse and has served two appointments on the California Chemicals of Emerging Concern Expert Panels. Snyder received a B.A. in Chemistry from Thiel College and a Ph.D. in Zoology and Environmental Toxicology from Michigan State University.

DENNIS E. WILLIAMS, PH.D., P.G., CHG

*President
GEOSCIENCE Support Services, Inc. (Claremont, CA)*

Dennis Williams is founder and president of GEOSCIENCE Support Services, Inc., which focuses on groundwater supply, development, management, and protection. He has over 35 years of experience in groundwater hydrology, specializing in groundwater planning, development, and management, with specific emphasis on the groundwater basins of Southern California. In particular, he has consulted to most of the major water districts and agencies in the Southern California area, as well as clients in South America, Europe, and the Middle and Far East. The author of numerous publications on groundwater, Williams is also a part-time research professor at the University of Southern California, where he has taught graduate level courses in geohydrology and groundwater modeling since 1980. Williams received a B.S. in Geology from the University of Redlands and both an M.S. and Ph.D. in Groundwater Hydrology from the New Mexico Institute of Mining and Technology. He is a registered California geologist, a certified hydrogeologist with the State of California, and a certified groundwater hydrologist with the American Institute of Hydrology.