

National
Water
Research
Institute

Research Advisory Board 2009

NATIONAL WATER RESEARCH INSTITUTE

Research Advisory Board

The National Water Research Institute (NWRI) was founded in 1991 by a group of Southern California water agencies in partnership with the Joan Irvine Smith & Athalie R. Clarke Foundation to sponsor research projects and programs focused on ensuring safe, reliable sources of water now and for future generations.

NWRI is one of a few public-private partnerships devoted to water research. Its success rests on its Research Advisory Board (RAB), which not only reviews and evaluates proposed and ongoing research projects that are supported by NWRI, but also guides and enhances NWRI's research goals, whether it be through providing expertise for Independent Advisory Panels, assisting in reports and publications, or recommending students for fellowships and awards.

The RAB represents water-science expertise from across the nation, including prominent engineers, microbiologists, hydrologists, geologists, political scientists, public health specialists, and others who play a significant role in guiding and expanding NWRI's research program.

NATIONAL WATER RESEARCH INSTITUTE

Creating New Sources of Water through Research and Technology and Protecting the Freshwater and Marine Environments

Since its founding in 1991, the National Water Research Institute has collaborated with over 100 partners around the world to fund efforts in water research, education, and outreach. Major activities include:

- Funding and guiding scientific research projects.
- Supporting graduate fellowships and other water-related educational programs.
- Developing outreach material, such as reports and videos.
- Holding workshops and conferences to promote new issues and technologies.
- Providing peer-review panel services for local and state water agencies.
- Managing projects or programs for water agencies and others.
- Awarding scholarly and practical achievements in water research with a national prize.

NWRI is supported by the NWRI Member Agencies and the Joan Irvine Smith and Athalie R. Clarke Foundation. To leverage funding, strategic partnerships are arranged with leading organizations in the water and wastewater industries.

To date, NWRI has invested over \$17 million in research funding to support projects focused on exploratory research, treatment and monitoring, water quality and assessment, and knowledge management.

TAKASHI ASANO, PH.D., P.E.

*Professor Emeritus, Department of Civil and Environmental Engineering
University of California, Davis (Davis, California)*

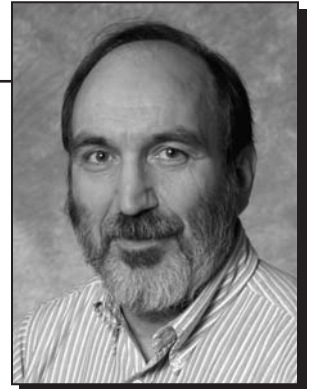
Tak Asano has over 35 years of professional and academic experience in environmental and water resources engineering. His areas of specialization include water reuse and advanced water and wastewater treatment, water resources impacts, and health risk analysis. Among his honors, he was awarded the Stockholm Water Prize, presented by King Carl XVI Gustaf of Sweden, in 2001. He received an honorary doctorate from Hokkaido University, Sapporo, Japan in 2004 and Doctor Honoris Causa from the University of Cadiz, Spain in 2008. Asano received a B.S. in Agricultural Chemistry from Hokkaido University in Sapporo, Japan, an M.S.E. in Sanitary and Civil Engineering from the University of California, Berkeley, and a Ph.D. in Environmental and Water Resources Engineering from the University of Michigan in Ann Arbor.



ROBERT K. BASTIAN

*Senior Environmental Scientist, Office of Wastewater Management
U.S. Environmental Protection Agency (Washington D.C.)*

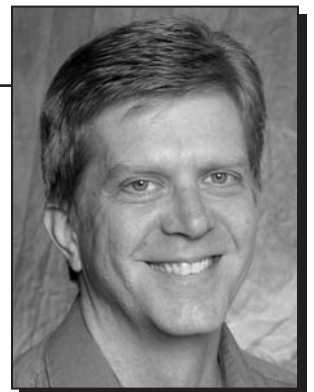
For over 30 years, Bob Bastian has coordinated the development of numerous technical studies and guidance documents on the management of municipal wastewater and biosolids for the U.S. Environmental Protection Agency (EPA). One of his most notable documents was the EPA's *Guidelines for Water Reuse and Progress in Water Quality: An Evaluation of the National Investment in Municipal Water Treatment*. Bastian deals with issues such as wastewater reuse and disinfection, natural biological waste treatment technologies (land treatment, constructed wetlands, ponds, etc.), on-site/decentralized treatment technologies, and efforts to address on-site energy production, conservation and recovery, nutrient management, and control of toxics and emerging contaminants, among others. He also represents the EPA on several interagency and advisory groups. Bastian received both a B.S. and M.S. in Biology, Mathematics, and Environmental Sciences at Bowling Green State University in Ohio.



WILLIAM A. BLOMQUIST, PH.D.

*Dean, School of Liberal Arts
Indiana University-Purdue University Indianapolis (Indianapolis, Indiana)*

Bill Blomquist is a Professor of Political Science and Dean of the School of Liberal Arts at Indiana University-Purdue University Indianapolis. His water-research interests concern water institutions and water policy, particularly in the western U.S., and recent projects have involved a comparative analysis of river basin management institutions around the world and a study of the political and governmental dimensions of watershed management in the U.S. With support from NWRI, Blomquist recently authored *Water 2010: A "Near-Sighted" Program of Water Resource Management*. He also helped create NWRI's Knowledge Management Program and developed the 2-year project, "Focus on Orange County's Water Future," co-sponsored by NWRI and the Municipal Water District of Orange County (California). Blomquist received a B.S. in Economics, M.A. in Political Science, and Graduate Certificate in Public Administration from Ohio University, and a Ph.D. in Political Science from Indiana University, Bloomington.





ROBERT P. CARNAHAN, PH.D., P.E., D.E.E.

Senior Technology Advisor

Farm Pilot Project Coordination, Inc. (Tampa, Florida)

Bob Carnahan is a member of the Board of Directors for Farm Pilot Project Coordination (FFPC), a non-profit organization geared towards promoting innovative treatment technology systems that reduce the nutrient content of waste streams from animal feeding operations. Prior to joining FFPC, Carnahan served as the Associate Dean for Research at the University of South Florida for 15 years. His research interests include the application of membrane filtration in water treatment, wastewater and industrial waste treatment, and biological and physical/chemical treatment of wastewaters and industrial waste. Among his honors, he was named a Diplomat in the American Academy of Environmental Engineers in 1987 and was elected to the American Desalting Association's Hall of Fame in 1998. Carnahan received a B.C.E. in Civil Engineering from the University of Florida, an M.S. in Sanitary Engineering from the University of North Carolina, and a Ph.D. in Environmental Systems Engineering from Clemson University.



MARK M. CLARK, PH.D.

Emeritus Professor of Civil and Environmental Engineering

University of Illinois at Urbana-Champaign (Urbana, Illinois)

Adjunct Professor of Civil and Environmental Engineering

Northwestern University (Evanston, Illinois)

Mark Clark has taught environmental engineering since 1987. His research interests include the surface properties of membranes, membrane fouling by fresh and sea waters, and the development of new materials for the sorption of microcontaminants. His research has been supported by the U.S. Environmental Protection Agency, National Science Foundation, Bureau of Reclamation, American Water Works Association Research Foundation, and NWRI. He is also the author of the textbook, *Transport Modeling for Environmental Engineers and Scientists (2nd Edition)*. In addition, he has consulted on membrane technology projects for MWH, NSF International, U.S. Army Construction Engineering Research Laboratory, and Savannah River Technology Center in South Carolina. Clark received both a B.S. and M.S. in Civil Engineering from the University of Missouri-Columbia and Ph.D. in Environmental Engineering from The Johns Hopkins University.



HARVEY F. COLLINS, PH.D., P.E.

Environmental Engineer Consultant (Sacramento, California)

Harvey Collins has over 30 years of experience in California state government, working in all fields of sanitary/environmental engineering and environmental health. He served as Deputy Director of Public Health at the California Department of Health Services, and was Chief of the Division of Drinking Water and Environmental Management when he retired in 1995. Since then, he has consulted on various water and wastewater engineering projects and has served on several NWRI Independent Advisory Panels. He also has received numerous awards, including a Rudolf Hering Medal of the American Society of Civil Engineers and the Walter F. Synder Award from the National Environmental Health Association and NSF International. Collins received a B.S. in Civil Engineering from Oregon State University, an M.S. in Sanitary Engineering from the University of Missouri, Columbia, and a Ph.D. in Sanitary Engineering from the University of California, Berkeley.

WILLIAM J. COOPER, PH.D.

*Director, Urban Water Research Center
University of California, Irvine (Irvine, California)*

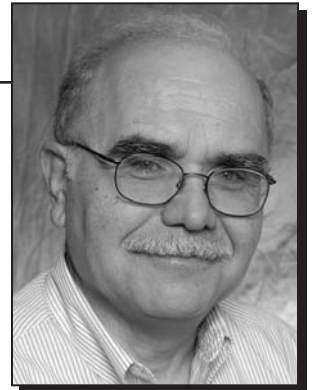
For over 35 years, Bill Cooper has worked in research and education focusing on drinking water quality, water reuse, and water pollution. At present, he serves as a Professor in the Department of Civil and Environmental Engineering and Director of the Urban Water Research Center at the University of California, Irvine (UCI). His research interests have included the analytical chemistry of chlorine residuals, disinfection byproducts, trace organics analysis, aquatic photochemistry, and free radical chemistry of advanced oxidation processes. Prior to joining UCI, Cooper served as Chair of the Department of Chemistry at University of North Carolina Wilmington and Director of the Drinking Water Research Center at Florida International University. Cooper received a B.S. in Chemistry from Allegheny College, an M.S. in Fuel Science and Organic Geochemistry from Pennsylvania State University, and a Ph.D. in Marine and Atmospheric Chemistry from the University of Miami.



JOSEPH A. COTRUVO, PH.D.

*President
Joseph Cotruvo & Associates, LLC (Washington, D.C.)*

Joe Cotruvo is President of an environmental and public health consulting firm and is active in the World Health Organization (WHO)/NSF International Collaborating Centre for Drinking Water Safety and Treatment. Previously, he served as Director of the Criteria and Standards Division of the U.S. Environmental Protection Agency (EPA) Office of Drinking Water, Director of EPA's Risk Assessment Division, and Vice President at NSF International. At present, he is a member of WHO Drinking Water Guidelines development committees and a manager of WHO's Desalination Guidance project. He is also engaged in studies on antiterrorism and water supplies through the Water Research Foundation (formerly AwwaRF) and in studies of presystemic metabolism of bromate. Recently, he was appointed to the Board of Directors of the District of Columbia Water and Sewer Authority. Cotruvo received a B.S. in Chemistry from the University of Toledo and a Ph.D. in Physical Organic Chemistry from Ohio State University.



JAMES CROOK, PH.D., P.E.

Environmental Engineering Consultant (Boston, Massachusetts)

Jim Crook is an environmental engineer with more than 35 years of experience in state government and consulting engineering. An internationally recognized expert in water reclamation and reuse, he has been involved in numerous projects and research activities regarding public health, regulations, 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. 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.





SHANNON CUNNIFF

*Director, Emerging Contaminants
Office of the Deputy Under Secretary of Defense (Installations and Environment)
U.S. Department of Defense (Washington, D.C.)*

As Director of Emerging Contaminants at the Office of the Deputy Under Secretary of Defense at the U.S. Department of Defense (DoD), Shannon Cunniff draws upon her varied experiences in water resources, environmental science, and technology to facilitate the DoD's initiatives addressing emerging contaminants. Prior to joining the DoD, Cunniff served as Director of Research and Development for the U.S. Department of the Interior, Bureau of Reclamation, where she focused on ensuring that new science and technology was developed and applied to the growing water management challenges of the Western U.S. Her water-resources experience includes working at the U.S. Environmental Protection Agency and U.S. Army Corps of Engineers on Federal water-resources activities, such as water supply, floodplain management, river restoration, wetlands, and watershed approaches. Cunniff received both a B.A. in Biology and M.A. in Geography from the University of California, Los Angeles.



RULA A. DEEB, PH.D.

*Senior Associate
Technology and Applied Research Leader, Federal/Industrial Program
Malcolm Pirnie, Inc. (Emeryville, California)*

Rula Deeb is a Senior Associate at the consulting firm, Malcolm Pirnie, Inc. A distinguished leader in environmental engineering, she has prepared over 30 peer-reviewed technical publications and was invited to participate in the National Academy of Engineering's 2007 U.S. Frontiers of Engineering Symposium. Other honors include being selected as a National Science Foundation Engineering Education Scholar for Excellence in Engineering Education in 1998, receiving the Paul Busch Prize in 2003 (Malcolm Pirnie's highest honor), and receiving the Berkeley Engineering Innovation Young Outstanding Leader Award in 2007. Prior to joining Malcolm Pirnie, she taught environmental engineering at Stanford University and worked as a program coordinator at the United Nations. Deeb received a B.A. in Chemistry and Mathematics from Warren Wilson College, and both an M.S. and a Ph.D. in Civil and Environmental Engineering from the University of California, Berkeley.



JACK DEMARCO

*Former Superintendent of Water Quality and Treatment
Greater Cincinnati Water Works (Cincinnati, Ohio)*

Jack DeMarco has over 45 years experience as an environmental engineer in public and private service, with expertise in water supply treatment, solid waste management, and stormwater and sewage treatment plant design. As the former Superintendent of Water Quality and Treatment at the Greater Cincinnati Water Works, he was responsible for water quality and treatment at two major treatment plants and water quality contract operations serving about 1-million people. He is also the author of numerous publications on water supply and solid waste management, and has received several honors, such as the American Water Works Association's (AWWA) George W. Fuller Award and Honorary Award, and American Society of Civil Engineers' Professional Accomplishments Award. He also serves on boards and councils for organizations such as AWWA and Water Research Foundation (formerly AwwaRF). DeMarco received both a B.S. in Civil Engineering and M.S. in Sanitary Engineering from the University of Cincinnati.

LEONARD L. DUEKER, P.E.

President

DCI, Inc. (Mesa, Arizona)

Leonard Dueker has over 50 years experience with the public and private sectors, having formed and operated private water and sewer companies in Arizona, California, and New Jersey (the master plan of each of these utilities included the use of effluent for golf course irrigation and recharge). In 1988, he became General Manager of the Water Resources Department of the City of Scottsdale in Arizona. In this position, he obtained the voters' approval of a bond issue to construct the portion of his water master plan, which included the construction of the "Water Campus" and a 14-mile pipeline to transport 20-million gallons per day of effluent to 20 golf courses (in the fall, winter, and spring, the irrigation needs are reduced and the effluent is then treated at the Water Campus, using microfiltration and reverse osmosis, followed by recharge for recovery and use as potable water). Currently, Dueker is President of DCI, Inc. He received a B.S. in Civil Engineering from Iowa State University.



STEVEN J. DURANCEAU, PH.D., P.E.

*Associate Professor, Department of Civil, Environmental, and Construction Engineering
University of Central Florida (Orlando, Florida)*

Steven Duranceau is an Associate Professor at the University of Central Florida (UCF), where he teaches and conducts research focused on water quality, treatment, and distribution, with an emphasis on advanced water treatment processes, disinfection, stabilization, and corrosion control. Prior to joining UCF, Duranceau served as Vice President and Director for a national design engineering firm. He is a member of the Board of Directors for the American Membrane Technologies Association, as well as a founding member of both the Southeast Desalting Association and Southwest Membrane Operators Association. He has been an active member of the American Water Works Association, where recently served as Chair of the Water Desalting Committee. Duranceau received a B.S. in Chemistry from Florida State University, and both an M.S. in Industrial Chemistry and Ph.D. in Environmental Engineering from the University of Central Florida.



JAMES S. DUSENBURY, PH.D.

Team Leader, Water Technology Team

U.S. Army Tank Automotive Research, Development & Engineering Center (Warren, Michigan)

Since 1997, Jay Dusenbury has been a Research Engineer for the Petroleum and Water Business Area at the U.S. Army Tank Automotive Research, Development & Engineering Center, as well as the Department of Defense Executive Agent for ground-based water treatment. As Team Leader for the Water Technology Team, he is responsible for managing the Army's Water Technology Research and Development Program to develop novel energy-efficient, lightweight compact water-purification technology, and to develop new concepts and technology to generate water from non-traditional sources, such as atmospheric humidity and engine exhaust. He also manages projects in the areas of water monitoring and the evaluation of contaminant removal by military systems. Dusenbury received a B.S. in Chemical Engineering from Worcester Polytechnic Institute in Massachusetts and both an M.S. and Ph.D. in Environmental Engineering from Pennsylvania State University.





DAVID H. FURUKAWA, P.E.

*President
Separation Consultants, Inc. (Poway, California)*

David Furukawa has over 40 years of desalination technology experience in both public and private sectors, and is an acknowledged expert on the field of reverse osmosis. He has authored more than 60 publications and is patented in the field. Since 1988, his desalination consulting company, Separation Consultants, Inc., has provided technical, management, and strategic assistance to institutions, communities, municipalities, nations, and private companies. Furukawa served as past President and Director of the International Desalination Association and past President of the American Desalting Association. Currently, he serves as Chair of the Research Advisory Board for NWRI and Vice-Moderator of the Research Advisory Council for the Middle East Desalination Research Center. He was also author of the 2008 NWRI project report, *A Global Perspective of Low Pressure Membranes*. Furukawa received a B.S. in Chemical Engineering from the University of Colorado.



DOUGLAS R. LLOYD, PH.D.

*Professor, Department of Chemical Engineering
The University of Texas at Austin (Austin, Texas)*

Doug Lloyd has taught and conducted research at The University of Texas at Austin since 1981. Among his positions, he served as Associate Dean of the College of Engineering and Associate Chair of the Department of Chemical Engineering. He is the author or co-author of more than 140 publications and three books on membrane science and engineering, and is currently on the Editorial Board of the *Journal of Porous Materials*. He also served as both President and member of the Board of Directors of the North American Membrane Society, which he co-founded in 1985. Recently, with support from NWRI, Lloyd's research group obtained a patent on ZeoTIPS membranes, highly selective membranes that can remove salt and other minerals from water to produce freshwater. Lloyd received a B.A.Sc., M.A.Sc., and Ph.D in Chemical Engineering from the University of Waterloo in Ontario, Canada, and was honored as a Distinguished Alumnus in 1995.



BRUCE A. MACLER, PH.D.

*National Microbial Risk Assessment Expert
U.S. Environmental Protection Agency (San Francisco, California)*

Bruce Macler has provided toxicology and risk assessment expertise on environmental water issues for the U.S. Environmental Protection Agency (EPA) since 1989. He manages regulatory workgroups and an extensive research program on drinking-water treatment, as well as is involved in public outreach and communication. Prior to joining the EPA, he held academic and research positions at NASA, the University of California, Berkeley, and State University of New York at Stonybrook. Macler has authored more than 90 articles and research publications on biotechnology, microbial risk assessment, and drinking-water regulations, and teaches and lectures widely. Among his honors, he received both the George A. Elliott Award (2000) and George W. Fuller Award (2003) from the American Water Works Association. Macler received both a B.A. and Ph.D. in Biochemistry from the University of California, Berkeley.

PERRY McCARTY, Sc.D.

*Silas H. Palmer Professor of Civil Engineering, Emeritus
Stanford University (Stanford, California)*

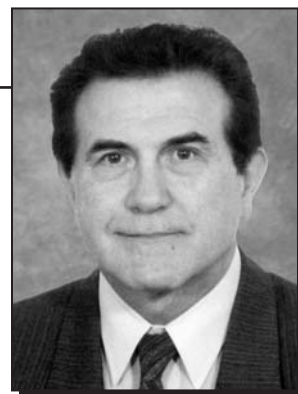
Perry McCarty is universally recognized for his research on understanding contaminant behavior in groundwater aquifers and sediments, and has significantly contributed to the areas of water treatment, reclamation, recharge, and water chemistry and microbiology. He has been published over 300 times and is co-author of the textbooks, *Chemistry for Environmental Engineering and Science* and *Environmental Biotechnology: Principles and Application*. McCarty has also received numerous honors, such as being elected to both the National Academy of Engineering and American Academy of Arts and Sciences, as well as receiving an honorary doctorate from Colorado School of Mines. He was also awarded the 1992 John and Alice Tyler Prize for Environmental Achievement, 1997 NWRI Athalie Richardson Irvine Clarke Prize, and 2007 Stockholm Water Prize. McCarty received a B.S. in Civil Engineering from Wayne State University and an S.M. and Sc.D. in Sanitary Engineering from Massachusetts Institute of Technology.



MOHSEN MEHRAN, Ph.D.

*Chief Executive Officer and Principal Hydrologist
Rubicon Engineering Corporation (Irvine, California)*

Mohsen Mehran is Chief Executive Officer and Principal Hydrologist at Rubicon Engineering, an environmental, civil, and structural engineering firm. At Rubicon, Mehran is responsible for developing and directing site characterization and remediation projects. He also provides environmental consulting services related to cost allocation and recovery and expert witness testimony cases. For the past 30 years, his research has focused on groundwater flow and migration of chemical constituents in fractured/porous media, with particular emphasis on site restoration, water-resources management, and groundwater/contaminant transport modeling. He has published more than 50 articles related to soil and groundwater investigation/remediation, and has been a faculty member at both the University of California, Davis, and University of California, Berkeley. Mehran received a B.S. in Agricultural Engineering from Tehran University and an M.S. in Soil Physics and Ph.D. in Civil Engineering from the University of California, Davis.



Patricia L. Meinhardt, M.D., MPH, M.A.

*Executive Medical Director, Center for Occupational and Environmental Medicine
Arnot Ogdan Medical Center (Elmira, New York)*

Patricia Meinhardt provides medical expertise in the recognition, treatment, and prevention of water-related disease resulting from the contamination of drinking and recreational waters. An occupational and environmental medicine specialist, she provides technical assistance and medical consultation to advisory boards and committees targeting environmental health issues, with recent emphasis on waterborne diseases resulting from pollution and terrorism. Currently, Meinhardt is Executive Medical Director of the Center for Occupational and Environmental Medicine, where she directs a national program to educate medical and public health practitioners concerning the diagnosis and treatment of waterborne disease resulting from biological, chemical, and radiologic contamination. Meinhardt received both a B.A. in Biological Sciences and an M.A. in Botany from the University of Montana, an M.D. from the Medical College of Pennsylvania, and a MPH in Epidemiology from The Johns Hopkins University.





JAMES E.T. MONCUR, PH.D.

*Professor of Economics and Director
University of Hawaii Water Resources Research Center (Honolulu, Hawaii)*

James Moncur joined the University of Hawaii at Manoa in 1969, and has been Professor of Economics and Director of its Water Resources Research Center since 1999. He regularly teaches environmental economics courses, and conducts research in the areas of water pricing and financing, the economic effects of water law and property rights in water, and the economics of desalination, among other topics. One of his current projects involves overseeing a 5-year biological and sediment monitoring program on marine communities near an ocean sewer outfall in Honolulu, Hawaii. In addition to his work at the University, Moncur was also President of the National Institutes for Water Resources, a national organization of state water research institute directors, from 2003-2005. Moncur received both a B.A. and M.A. in Economics from the University of Wyoming and a Ph.D. in Economics from Washington State University.



H.S. MURALIDHARA, PH.D.

*Vice President, Corp. Plant Operations and Manager, Process Technology
Cargill, Inc. (Savage, Minnesota)*

“Murali” Muralidhara has over 28 years of industrial experience in chemical, food processing, and environmental engineering. At Cargill, Inc., he specializes in developing separations technology and research applications in membrane technologies and membrane fouling research, the separation/purification of natural products, and other water-related processes. He has also edited two books on advances in solid/liquid separation, has over 24 patents, and has received numerous awards and honors, including being inducted into the Chemical Engineering Academy of West Virginia University. Recently, he was recognized as Distinguished Alumni of the Year at Southern Illinois University. Muralidhara received both a B.S. in Physics and Chemistry and an M.S. in Chemistry at the University of Bangalore, an M. Tech in Chemical Technology at the University of Nagpur, an M.S. in Thermal and Environmental Engineering at Southern Illinois University, and a Ph.D. in Chemical Engineering at West Virginia University.



CHARLES I. NOSS, SC.D.

*National Program Director for Water Quality, Office of Research and Development
U.S. Environmental Protection Agency (Raleigh, North Carolina)*

Chuck Noss currently oversees the water quality research program within the U.S. Environmental Protection Agency (EPA). Prior to joining the EPA, he served as Director for Research and as Deputy Executive Director of the Water Environment Research Foundation (WERF), a nonprofit organization that provides research services to the water-quality industry, where he was responsible for developing and implementing WERF’s research and development plan. He also served as an Associate Professor at the University of South Florida’s College of Public Health, where he developed and taught courses in Environmental Health and Engineering. He was also an Environmental Research Scientist for the U.S. Army Medical Bioengineering Research and Development Laboratory at Fort Detrick in Frederick, Maryland. Noss received a B.A. in Biology from Shippensburg State College in Pennsylvania and both a Sc.M. and Sc.D. in Environmental Health Engineering from The Johns Hopkins University.

PANKAJ PAREKH, D.ENV

*Director, Water Quality Compliance
Los Angeles Department of Water and Power (Los Angeles, California)*

At the Los Angeles Department of Water and Power, Pankaj Parekh is responsible for monitoring and securing compliance with Federal and State drinking water/wastewater permits and standards. He is also engaged in the research and management of emerging issues regarding the provision of safe water. In addition, Parekh chairs a task force addressing emerging issues related to consumer tap water safety in public water supplies; he has also been involved with water security research and taken a leadership role on risk management strategies for drinking water contaminants. Prior, he was co-leader of a delegation sent to Liberia on behalf of the U.S. Agency for International Development to assess Liberia's health sector and provide recommendations on bilateral aid programs (Parekh was responsible for the provision of environmental and preventive services in two hospitals and 42 health clinics). Parekh received a B.S., MPH, and Doctorate in Environmental Science and Engineering from the University of California, Los Angeles.



J. ROBERT PATEREK, PH.D.

Consultant (Naperville, Illinois)

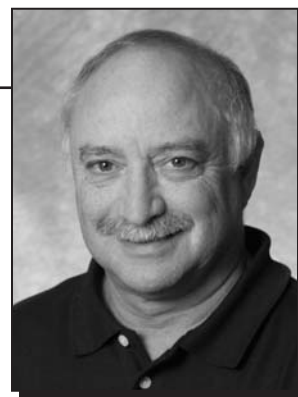
Bob Paterek has more than 20 years experience in the fields of microbial biotechnology and environmental chemistry. This experience includes tenure as a Senior Analytical Chemist with a pharmaceutical company in South Carolina, Director of Microbiology with a commercial research and development firm in New Jersey, Vice President/Lab Director/Co-Owner of an environmental analysis lab and bioremediation lab in New Orleans, and Manager of an environmental microbiology research group in San Diego. Until recently, he was Manager of Environmental Biotechnology in the Bioenergy Department at the Gas Technology Institute, a non-profit research and technology development organization that focuses on the production, delivery, use, and environmental aspects of natural gas. Paterek received both a B.S. and M.S. in Microbiology from Clemson University and a Ph.D. from the Microbiology and Cell Science Department at the University of Florida.



STANLEY L. PONCE, PH.D., P.H.

*Regional Executive, South Central Area
U.S. Geological Survey (Frederick, Maryland)*

Stan Ponce has been involved in the management of Federal land and water resources for nearly 30 years. His primary fields of expertise are water quality, land-use hydrology, and water law. Recently, he has worked on ecosystem restoration along the Gulf of Mexico, water availability in south-central U.S., and the science of emerging contaminants. Prior to joining the U.S. Geological Survey, he served as Special Assistant to the Secretary of the Interior, the Director of Research and Science Advisor for the Bureau of Reclamation, Chief of Water Resources for the National Park Service, Leader of the Watershed Systems Development Group for the U.S. Forest Service, and Professor of Earth Resources at Colorado State University. Ponce received a B.S. in Forestry and Natural Resources from the University of Missouri, an M.S. in Watershed Science and Forest Engineering from Oregon State University, and a Ph.D. in Civil and Environmental Engineering from Utah State University.





ROBERT L. RILEY

President

Separation Systems Technology, Inc. (San Diego, California)

Bob Riley has over 40 years experience in the development of synthetic polymeric membranes, separation devices, processes for water desalination, water purification, and membrane filtration. Since 1986, he has been President of Separation Systems Technology, which is engaged in membrane research and associated process development in the fields of reverse osmosis, microfiltration, and gas separation. In addition, he maintains a private consulting firm, Separation Systems International, which provides technical services in the fields of membrane science and engineering. He is also the author or co-author of numerous publications and patents in the area of polymers, synthetic membranes, and separation processes, and was inducted into the American Membrane Technology Association Hall of Fame in 2006. Riley received a B.S. in Chemistry from Regis College in Denver, Colorado, and continued his graduate studies at Texas Christian University, San Diego State University, and the University of California, Los Angeles.



JOAN B. ROSE, PH.D.

Homer Nowlin Endowed Chair for Water Research

Michigan State University (East Lansing, Michigan)

Joan Rose has made groundbreaking advances in understanding water quality and protecting public health for more than 20 years. She is widely regarded as the world's foremost authority on *Cryptosporidium* and was the first to present a method for detecting this pathogen in water supplies. The author of over 200 articles, Rose received the NWRI Athalie Richardson Irvine Clarke Prize in 2001 for her advances in microbial water-quality issues. Currently, she serves as Chair of the Science Advisory Board for the U.S. Environmental Protection Agency's Drinking Water Committee and as 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 an M.S. in Microbiology from the University of Wyoming and both a B.S. and Ph.D. in Microbiology from the University of Arizona.



RICHARD H. SAKAJI, PH.D., P.E.

Manager of Planning and Analysis for Water Quality

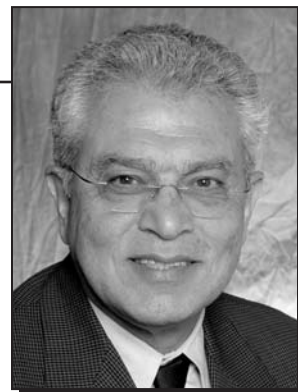
East Bay Municipal Utility District (Oakland, California)

Rick Sakaji is a key player in developing public policy to ensure safe public water supplies. Currently, at East Bay Municipal Utility District, he helps develop policy by pooling research and putting findings into practical applications. Prior, Sakaji worked for the California Department of Health Services, where he provided regulatory oversight of California's public drinking water system and enforcement of the Federal and State Safe Drinking Water Acts. Sakaji's background in research and regulatory affairs has allowed him to bring a public-health perspective towards public health, water quality, and water-treatment issues surrounding drinking water and wastewater reclamation. He has served on committees for the Water Research Foundation (formerly AwwaRF), Water Environment Research Foundation, and U.S. Environmental Protection Agency. Sakaji received an A.B. in Marine Biological Studies and both an M.S. and Ph.D. in Environmental Engineering from the University of California, Berkeley.

BAHMAN SHEIKH, PH.D., P.E.

Water Reuse Consultant (San Francisco, California)

Bahman Sheikh is active in research, planning, and implementing water reclamation and reuse projects. His research has focused on media filtration and agricultural uses of recycled water, and he studies the impacts of recycled water on public health, crops, soil properties, and public acceptance. He is a consultant to public and private clients primarily in California, the Caribbean, India, and several countries in the Middle East. He is the author or co-author of numerous publications, including the NWRI report, *The Value of Water*, and he is currently working on a collaborative research project with the University of California, Berkeley, with the objective of evaluating increasing filter loading rates for the production of tertiary recycled water. Sheikh received a B.Sc. in Agriculture from the American University of Beirut, Lebanon, and both a M.S. in Irrigation (Water Science and Engineering) and Ph.D. in Soil Physics from the University of California, Davis.



JOANN SILVERSTEIN, PH.D., P.E.

*Professor of Civil and Environmental Engineering
University of Colorado, Boulder (Boulder, Colorado)*

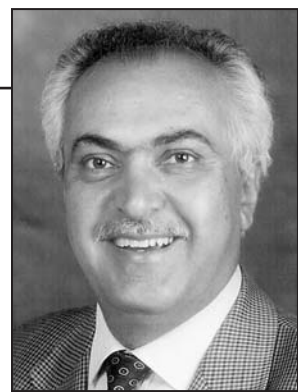
JoAnn Silverstein has been a Professor at the University of Colorado, Boulder, since 1982. Her teaching interests include environmental engineering (biological process analysis, design, and wastewater and water treatment) and thermodynamics. Her research projects involve the application of biological processes to water treatment, including: nitrogen transformation, bioremediation of acid mine drainage, wastewater recycling, and nitrate removal from drinking water. Silverstein is also interested in research to develop and demonstrate novel water treatment technologies so that they can be deployed in operating facilities. In 2001, the College of Engineering at the University of Colorado honored her with both the Clarence Eckel Faculty Achievement Award and the Outstanding Faculty Award. Silverstein received a B.A. in Psychology from Stanford University and a B.S., M.S., and Ph.D. in Civil Engineering from the University of California, Davis.

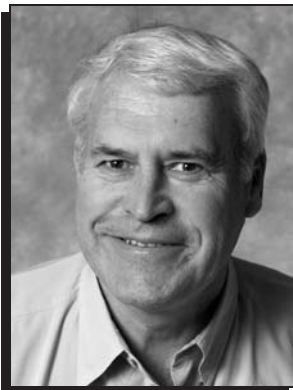


SOROOSH SOROOSHIAN, PH.D.

*Distinguished Professor, Department of Civil & Environmental Engineering
and Department of Earth System Science
Director, Center for Hydrometeorology and Remote Sensing
University of California, Irvine (Irvine, California)*

Soroosh Sorooshian's areas of interest include surface hydrology, hydroclimate modeling, remote sensing application in hydrology, rainfall-runoff modeling, flood forecasting and control, and water resources systems analysis and management. Among his honors, he was awarded the 2005 Distinguished Public Service Award from NASA, 2006 Robert E. Horton Memorial Leadership Award from the American Meteorological Society, and 2006 Fellow Award from the Japan Society for the Promotion of Science. He also accepted the 2007 United Nations' Great Man-Made River International Water Prize on behalf of his research team at the Center for Hydrometeorology and Remote Sensing at the University of California, Irvine, which won the Prize with the Center for the Sustainability of Semi-Arid Hydrology and Riparian Areas (University of Arizona). Sorooshian received a B.S. in Mechanical Engineering from California State Polytechnic University, San Luis Obispo, and an M.S. in Operations Research and Ph.D. in both Systems Engineering and Engineering from the University of California, Los Angeles.





ROY F. SPALDING, PH.D.

*Professor of Agronomy and Horticulture
University of Nebraska, Lincoln (Lincoln, Nebraska)*

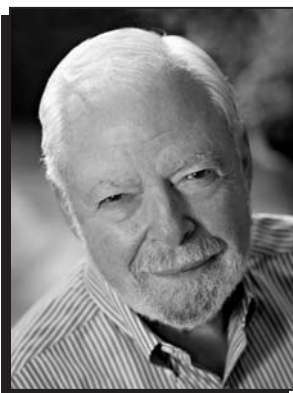
Roy Spalding is Professor in the Department of Agronomy and Horticulture at the University of Nebraska, Lincoln (UNL), where he founded the UNL Water Sciences Laboratory and served as its Director for 13 years (from 1988 to 2001). Spalding has taught for over 30 years and is nationally known for the development of innovative techniques for the interpretation, source identification, protection, and remediation of surface and groundwater quality problems. His research interests include the fate and transport of agrichemicals and industrial solvents and the pragmatic use of radioactive and stable isotopes in environmental applications. In addition, he has been the President of Hydro-Trace, Inc., an environmental consulting firm, since 1981. Spalding received a B.A. in Chemistry at Kenyon College, an M.S.P.H. in Environmental Science and Engineering at the University of North Carolina, and a Ph.D. in Oceanography (Geochemistry) at Texas A&M University.



MICHAEL K. STENSTROM, PH.D., P.E., D.E.E.

*Distinguished Professor of Civil and Environmental Engineering
University of California, Los Angeles (Los Angeles, California)*

Michael Stenstrom teaches courses in water and wastewater treatment, mathematical modeling of environmental systems, and laboratory analysis at the University of California, Los Angeles. He has also served as Department Chair and Associate Dean of the Henry Samueli School of Engineering and Applied Science. His current research interests include stormwater management, developing Best Management Practices for stormwater in highly urbanized environments, and improving oxygen transfer at wastewater treatment plants. Stenstrom also serves as a Board Member of Heal the Bay, and has received such honors as the Harrison Prescott Eddy Research Award, the Science Coalition's Great Advances in Scientific Discovery Award, and the 2005 Water Quality Improvement Award from the California Water Resources Control Board. Stenstrom received a B.S. in Electrical and Computer Engineering and both an M.S. and Ph.D. in Environmental Systems Engineering at Clemson University.



GEORGE TCHOBANOGLIOUS, PH.D., P.E.

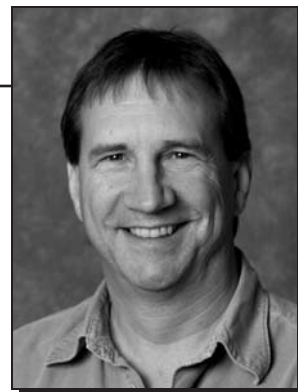
*Professor Emeritus
University of California, Davis (Davis, California)*

For over 35 years, wastewater expert George Tchobanoglous has taught courses on water and wastewater treatment and solid waste management at the University of California, Davis, where he is Professor Emeritus in the Department of Civil and Environmental Engineering. He has authored or coauthored over 375 publications, including 14 textbooks and five engineering reference books. Tchobanoglous has been past President of the Association of Environmental Engineering and Science Professors and currently serves as a national and international consultant to both government agencies and private concerns. Among his honors, he received the Athalie Richardson Irvine Clarke Prize from NWRI in 2003, was inducted to the National Academy of Engineers in 2004, received an Honorary Doctor of Engineering degree from the Colorado School of Mines in 2005, and was awarded the Frederick George Pohland Medal from AAEE and AEESP. Tchobanoglous received a B.S. in Civil Engineering from the University of the Pacific, an M.S. in Sanitary Engineering from the University of California, Berkeley, and a Ph.D. in Environmental Engineering from Stanford University.

MARK A. THOMPSON

*VP Engineering, General Manager
AquaNano Technologies (Williamsburg, Virginia)*

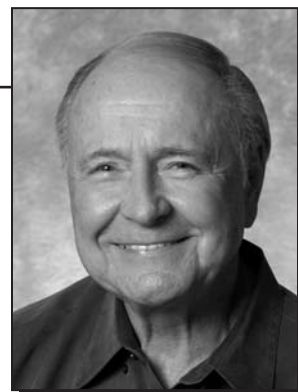
Mark Thompson has over 29 years of experience in the operation, management, and design of both conventional and membrane water treatment facilities. He has a broad background in water utility operations and management and worked over 10 years as a senior public utility manager and 9 years as a water treatment expert with a national environmental engineering firm before starting his own company, Advanced Membrane Systems, Inc. Thompson now works for AquaNano Technologies, a start-up company that is working with an advanced water treatment technology developed at the California Institute of Technology. He is also active in several professional organizations, including the American Membrane Technology Association, where he served as past President and Director, and the American Water Works Association and International Water Association, where he has served on committees on advanced water treatment. Thompson received a B.S. in Chemistry from Duquesne University.



WALTER J. WEBER, JR., PH.D., P.E., D.E.E.

*The Gordon M. Fair and Earnest Boyce Distinguished University Professor
University of Michigan, Ann Arbor (Ann Arbor, Michigan)*

Walter Weber is internationally renowned for his seminal work in technologies and concepts for sustainable water supplies. Since joining the University of Michigan in 1963, he has founded and directed several of its major environmental academic programs and research centers. He has also authored four books and over 450 peer-reviewed journal papers. The International Science Index identified him as the fifteenth most cited environmental expert in the world and seventh most cited in the U.S. Among his honors, Weber was named a Diplomat in the American Academy of Environmental Engineers, elected to the National Academy of Engineering, and received the 1996 NWRI Athalie Richardson Irvine Clarke Prize. In 2008, the American Institute of Chemical Engineers selected him as one of the 100 individuals having had the greatest influence on that field over the past 50 years. Weber received a Sc.B. in Chemical Engineering from Brown University, M.S.E. in Civil Engineering from Rutgers, and an A.M. in Aquatic Chemistry and Ph.D. in Water Resources Engineering from Harvard University.



DAVID W. YORK, PH.D., P.E.

*President
York Water Circle (Tallahassee, Florida)*

David York is the Founder and President of York Water Circle, a water consulting agency. Prior, he worked with the Florida Department of Environmental Protection for over 25 years, serving 18 of those years as the Water Reuse Coordinator. Among his responsibilities, he coordinated the development of state rules governing water reuse, provided technical assistance and outreach related to reuse and disinfection, and coordinated agency activities for water reuse. He also provides consulting expertise in the areas of environmental planning and assessment, water-quality analysis, and systems analysis. Currently, he serves as a member of committees for the Water Environment Federation and Florida Water Environment Association, and is active in the Water Reuse Association. York received a B.S. in Civil Engineering from Case Western Reserve University, an M.S. in Sanitary Engineering from the University of Tennessee, and a Ph.D. in Environmental Systems Engineering from Clemson University.

