

**Invitation for Comment on the “Short List” Candidates for the  
EPA Science Advisory Board Environmental Engineering Committee Augmented for the  
Aging Infrastructure Consultation**

**May 14, 2009**

The EPA Science Advisory Board (SAB) Staff Office announced in a *Federal Register* Notice (Volume 74, Number 60, Pages 14553 – 14555) published on March 31, 2009 that it was augmenting expertise on the SAB Environmental Engineering Committee (EEC). The current EEC membership is provided at the following Web site:  
<http://yosemite.epa.gov/sab/sabpeople.nsf/WebCommitteesSubcommittees/Environmental%20Engineering%20Committee>. The augmented EEC will consult with EPA’s Office of Research and Development on its Aging Drinking Water and Wastewater Infrastructure Research Initiative.

To augment the Committee, the SAB Staff Office sought public nominations of nationally and internationally recognized scientists and engineers in multidisciplinary fields including microbiology, environmental science, and chemistry; and civil, environmental, chemical, and mechanical engineering. The SAB Staff Office particularly sought scientists and engineers with specialized expertise in condition assessment, system rehabilitation, and in reducing the cost and improving the effectiveness of operations, maintenance, and replacement of aging and failing drinking water, stormwater, and wastewater treatment and conveyance systems. Also, the SAB Staff Office sought nominations of individuals with experience in applying this expertise towards municipal infrastructure systems. Based on qualifications and interest of the nominees, the SAB Staff Office identified the attached list of candidates and brief biographical sketches of these candidates are listed below.

The SAB Staff Office Director makes the final decision about who will serve on the augmented Committee based on all relevant information. This includes a review of the members and candidates’ confidential disclosure form (EPA Form 3110-48) and information gathered by staff and public comments. For the EPA SAB Staff Office, a balanced committee or panel is characterized by inclusion of candidates who possess the necessary domains of knowledge, the relevant scientific perspectives (which, among other factors, can be influenced by work history and affiliation), and the collective breadth of experience to adequately address the general charge. Specific criteria to be used in evaluating a candidate include: a) scientific and/or technical expertise, knowledge, and experience; b) availability and willingness to serve; c) absence of financial conflicts of interest; d) absence of appearance of a lack of impartiality; e) skills working in committees, subcommittees, and advisory panels; and, for the panel as a whole, f) diversity of, and balance among, scientific expertise, and viewpoints.

We hereby invite comments from members of the public to provide relevant information, analysis, or other documentation that the SAB Staff Office should consider in the formation of the augmented EEC. Comments should be submitted to the attention of Mr. Edward Hanlon, Designated Federal Officer, no later than June 4, 2009. Emailing comments ([hanlon.edward@epa.gov](mailto:hanlon.edward@epa.gov)) is the preferred mode of receipt.

## Candidates for Additional Experts to Augment the Environmental Engineering Committee for the Aging Infrastructure Consultation

### Borgatti, Douglas R.

#### Springfield Water and Sewer Commission, Springfield, MA

Dr. Borgatti is Operations Director for the Springfield Water and Sewer Commission, Springfield, Massachusetts which serves 250,000 customers. He is responsible for a regional 67 million gallon/day (mgd) wastewater treatment plant and a regional 100 mgd water treatment plant including its watershed management program. He holds a B.S. in Civil Engineering from Worcester Polytechnic Institute, Worcester, Mass, an M.E. in Civil Engineering (Environmental Science and Engineering) from Manhattan College, and a Ph.D. in Civil Engineering (Environmental Health) from the University of Notre Dame. Dr. Borgatti is responsible for regulatory compliance including interfacing with federal and state agencies. He has extensive experience participating in advisory committees at the state and national level and is active in several professional societies including the American Public Works Association, the Water Environment Federation (WEF), and New England Water Works Association; among others. Moreover, Dr. Borgatti has written several articles on water and wastewater management and operations. He holds a Drinking Water Supply Distribution License, a Drinking Water Supply Operators License, a Public Sewage Treatment Plant Operators License, and Public Sewage Treatment Plant Collection System License. Dr. Borgatti is also a Qualified Environmental Professional, a Board Certified Environmental Engineer (BCEE), and a Licensed Professional Engineer in N.J. and MA.

### Colbert, John

#### Massachusetts Water Resources Authority

Mr. John Colbert is a Manager, Maintenance for the Massachusetts Water Resources Authority (MWRA). He holds a B.S. in Mechanical Engineering from Tufts University and an M.S. in Mechanical Engineering from Northeastern University. Mr. Colbert previously was the Asset Manager at the MWRA and incorporated best maintenance practices including Reliability Centered Maintenance, optimized use of computerized maintenance management systems, planning and scheduling, condition monitoring techniques, preventive maintenance optimization, operations staff performing light maintenance, maintenance staff cross functionality and maintenance key performance indicators. The implementation of these best practices have resulted in cost savings and have improved facility equipment availability. The MWRA is a leader in the implementation of Reliability Centered Maintenance for water utilities. Mr. Colbert has also participated as a project advisor for the Water Environment Research Foundation (WERF) and American Water Works Association (AWWA) research and has published several papers on asset management. He is a State of Rhode Island Professional Engineer and a Certified Maintenance and Reliability Professional.

### Davis, Allen

#### University of Maryland

Dr. Allen P. Davis is a Professor in the Department of Civil and Environmental Engineering at the University of Maryland. He holds a B.S. degree in Agricultural Engineering (Civil Engineering minor), an MCE, and a Ph.D. in Civil Engineering from the University of Delaware. For over a decade, Dr. Davis has been investigating sources and treatment of pollutants in urban storm water runoff with a focus on nature-based practices, particularly bioretention. His research group has completed some of the first fundamental studies on bioretention as a stormwater management practice. Several of the existing design criteria have been refined by his research group. Hydrologic benefits and treatment functions and fates for a suite of critical urban nonpoint pollutants have been quantified. He is author or co-author of over seventy peer-reviewed journal articles and a recent text on Stormwater Management for Smart Growth (Springer, 2005). His teaching ranges from sophomore-level engineering chemistry to process dynamics and aquatic chemistry at the graduate level. Since 2001, he is also Director of the Maryland Water Resources Research Center. The water resources institutes, one in every state, were established as part of the Federal Water Resources Research Act, reauthorized in 2006, to support water resources research, education, and information dissemination. Since 2004, he is Associate Editor for Chemosphere, Science for Environmental Technology, published by Elsevier. Dr. Davis is a Fellow of the American Society of Civil Engineers and a Licensed Professional Engineer in Maryland.

## **Demond, Avery H.**

### **University of Michigan**

Dr. Avery H. Demond is a professor of Environmental and Water Resources Engineering at the University of Michigan. She holds a B.S. and M.S. in Civil Engineering from Massachusetts Institute of Technology, a B.A. in Biology from Williams College, and a Ph.D. in Environmental Engineering from Stanford University. Dr. Demond's research is in the field of hazardous waste and the rehabilitation of contaminated industrial properties. Current projects include the University of Michigan Dioxin Exposure Study, a widely publicized study (featured on National Public Radio) examining avenues of exposure of the human population to historic contamination in the Midland, Michigan area. As part of her service activities, she served as a coordinator of the Department of Energy's (DOE) Subsurface Science Program's Multiphase Fluid Flow Subprogram for five years. Furthermore, Dr. Demond has served on a number of National Research Council boards and committees, including the Board on Engineering Education and the Committee for the Review of the DOE Environmental Restoration Priority System and has also served as an Associate Editor of Environmental Engineering Science. She is a professional engineer, licensed in the State of Michigan, and also maintains Hazardous Waste Operations and Emergency Response certification. Dr. Demond has published on a variety of topics including the impact of contaminants on soil properties, the transport and migration of contaminants in soil, the leaching of contaminants from aging infrastructure into the water supply, and the impact of historic soil contamination on human health.

## **Ducoste, Joel**

### **North Carolina State University**

Dr. Ducoste is an associate professor in the Civil, Construction, and Environmental Engineering Department at North Carolina State University. He holds a B.S. and M.Eng. in Mechanical Engineering from Rensselaer Polytechnic Institute and a Ph.D. in Environmental Engineering from the University of Illinois at Urbana-Champaign. Dr. Ducoste is a national and international recognized expert in water and wastewater treatment processes, modeling using Computational Fluid Dynamics (CFD), and sewer collection system sustainability. Under sewer collection system sustainability, a major segment of his research involves understanding the formation of fat, oil, and grease (FOG) deposits and the re-growth of plant roots that are responsible for line blockages and potentially sanitary sewer overflows in centralized and decentralized sanitary sewer systems. Dr. Ducoste's research focus in this area includes: characterizing the chemical and physical makeup of FOG deposits as well as identifying the parameters that influence the kinetics of FOG deposit formation; pretreatment technologies that are designed to remove chemical precursors to FOG deposits; characterizing pipe and roots surface characteristics that may influence FOG deposit adhesion; and treatment strategies for reducing the re-growth of plant roots. He also advises food service establishments and municipalities on proper maintenance of grease abatement systems and has developed alternative design methodologies for use by International Association of Plumbing and Mechanical Officials in their uniform plumbing code.

## **Glass, Charles C.**

### **Howard University**

Dr. Glass is an Associate Professor of Civil Engineering at Howard University, Washington DC. He holds a B.S. in Civil Engineering from The Johns Hopkins University, and an M.S. and Ph.D. in Civil Engineering from the University of Colorado, Boulder. Dr. Glass teaches Environmental Engineering, Wastewater Treatment, Environmental Microbiology, Engineering Economics, and Hazardous Waste Treatment. His research interests include nitrification and denitrification in wastewater treatment, nutrient removal in wastewater treatment, environmental security, Best Management Practices for storm water treatment, and nutrient recycling. Dr. Glass has published in several journals on various topics, including: "Inhibition of Denitrification in Activated Sludge by Nitrite," "Nitrogen Recovery during Solid Waste Treatment for Advanced Life Support," "Biogas Production from Steam-Treated Municipal Solid Waste Wastewater," "Evaluation of a Parking Lot Bioretention Cell for Removal of Stormwater Pollutants," and "Decentralized Stormwater Controls for Urban Retrofit and Combined Sewer Overflow Reduction." Dr. Glass continues to work on wastewater and stormwater initiatives that focus on improving the quality of natural water bodies.

## Harris, Rhonda

### Pro-Ops, Inc.

Ms. Harris is President and owner of Professional Operations, Inc., Dallas, Texas, which is an operations management consulting firm focused on providing services for the water, wastewater, storm water and solid waste industries. She holds a B.S. in Civil Engineering from the University of Texas at Arlington, and an MBA with a focus on organizational behavior analysis from Southern Methodist University. Ms. Harris has 35 years experience in the design, construction, management, operations and training for water and wastewater facilities and systems. She served as the President of the Water Environment Federation from 1998-1999, and as the Rapporteur for the Water Associations Worldwide, 1999-2003. Ms. Harris is an Honorary Member of the American Water Works Association, and an elected member of the International Water Academy, #148 in the top 500 water experts worldwide, and has been very active in all aspects of operations and maintenance issues for water and wastewater systems. She is very involved in infrastructure issues for water and wastewater, including ongoing research into applicability of new technologies available for condition assessment and asset management of pipelines and appurtenances. Ms. Harris is a registered professional engineer, licensed water and wastewater operator, and approved operations trainer for both the Sandia National Laboratories and the State of Texas.

## Haskins, Scott

### CH2M Hill, Inc.

Mr. Scott Haskins is Vice President and Director of Technology, Quality and Innovation at CH2M Hill OMI, an environmental engineering company based in Denver. The Technology, Quality and Innovation group provides a strategic focus on growth, processes and business lines across the company, including initiatives related to sustainability, infrastructure development, research, compliance and Operations and Maintenance consulting. He holds a B.S. in Political Science and an M.A. in Public Administration from the University of Washington. Mr. Haskins joined CH2M Hill OMI from CH2M Hill's Water Business Group, where he was a Vice President and Principal Management Consultant, providing expertise on a range of utility management practices. He joined CH2M Hill in 2007 after 33 years with Seattle Public Utilities (SPU), one of the most progressive water utilities in the country, where he held executive positions in resource management, operations and maintenance and utility systems management. As the deputy director of SPU, Mr. Haskins was responsible for utility systems management for drinking water, surface water, wastewater and solid waste functions. He also provided oversight for emergency management, security, asset management and major interdepartmental projects. Before that he was director for finance and administration. He is a respected leader throughout the water community, and is active in industry organizations including the American Water Works Association (AWWA), Water Environment Federation, the Water Research Foundation, Water Environment Research Foundation, International Water Association, Global Water Research Coalition and in projects with the U.S. Environmental Protection Agency, along with serving on their Environmental Finance Advisory Board. Mr. Haskins is the co-author of two AWWA books, has published many papers and journal articles, and holds a professional designation from the Design-Build Institute of America.

## Heaney, James P.

### University of Florida

Dr. Heaney is Professor and Chair of the Department of Environmental Engineering Sciences at the University of Florida, Gainesville. He holds a B.S. in Civil Engineering from Illinois Institute of Technology, and an M.S. and Ph.D. in Civil Engineering from Northwestern University. Dr. Heaney's research interests are in various water related topics such as Urban Water Conservation, Infiltration Stormwater Best Management Practices Evaluation, Airport Stormwater Management, Methods for Evaluating Water Reuse Options, Wastewater Reuse Options, Options for Control of Combined Sewer Overflows, Effects of Upstream Storage on the Effectiveness of Stormwater Treatment Areas, and has published extensively in these topics. Between 1994-2003, Dr. Heaney served as a Professor in the Department of Civil, Environmental, and Architectural Engineering at the University of Colorado, Boulder, and served as Chairman of this Department between 1991-1994. Between 1978-1991, Dr. Heaney served as a Professor of Environmental Engineering Sciences at the University of Florida, Gainesville. Dr. Heaney is a Diplomate of the American Academy of Environmental Engineers and a Diplomate and Board Member of the American Academy of Water Resources Engineers, as well as a member of the American Society of Civil Engineers, American Water Resources Association, Association of Environmental Engineering and Science Professors, Operations Research Society of America, American Water Works Association, and Water Environment Federation, International Water Association Alliance for Water Efficiency (Board Member). He is a Registered Professional Engineer in the State of Florida.

## Hughes, David

### American Water Company

Mr. David M. Hughes is the water distribution infrastructure lead for American Water, the nation's largest private water company. He holds a B.S. in Civil Engineering with a concentration in Environmental Engineering from Carnegie Mellon University. Mr. Hughes' experience in the industry includes work as a manager for a public water utility, water distribution system engineer and consultant for the UK based Water Research Centre (WRc). His research at WRc included the first demonstration of water main epoxy lining in North America. Mr. Hughes is a long standing active member of the American Water Works Association (AWWA) and has participated on numerous AWWA committees involving infrastructure. He is also a member of Utilometrics, International Water Association (IWA), Water Environment Federation (WEF), and the North American Society for Trenchless Technology (NASTT). Mr. Hughes' research for American Water involves the practical identification, promotion and development of new technology to manage the firm's buried assets. He works on pipeline condition assessment techniques, leakage management and pipe rehabilitation alternatives. Mr. Hughes has been leading innovative pilot studies that combine advanced metering infrastructure (AMI) with acoustic leak detection. The innovation has led to other interfacing technologies including customer shutoff valves, backflow monitoring and pressure monitoring now under study. He is presently the principal investigator for two projects for the Water Research Foundation involving AMI and leak detection. Mr. Hughes is also currently involved with several additional Foundation projects as an investigator, project advisor or American Water representative. Projects include the study of dynamic influences on main breaks, the use of nanotechnology for future pipe, assessment technologies for asbestos cement pipe, evaluating cast iron renovation alternatives, developing criteria for optimizing water systems and key definitions for asset management, and evaluating the potential for distribution system backflow.

## Jaworski, Larry

### Black and Veatch, Inc.

Mr. Jaworski is a Vice President of Black & Veatch, a leading global engineering, consulting and construction company, in Gaithersburg, Md. He manages client services for several clients of the company's water business in the East Region and leads the region's Wet Weather Solutions practice. He holds a B.S. and M.S. in Civil/Environmental Engineering from the University of Illinois in Urbana, and currently serves as Vice President on the Board of Directors for its alumni association. Mr. Jaworski has more than 35 years of experience in wastewater collection, treatment and disposal and water treatment and distribution, with emphasis in program management of wet weather solutions. He has been involved in the study, design, construction and operation of a variety of systems including municipal and industrial wastewater treatment facilities. Recently, he has been involved in the preparation of the CSO LTCP for the District of Columbia Water and Sewer Authority and has also assisted several clients in negotiations associated with consent decrees for combined sewer and sanitary sewer systems. Mr. Jaworski served as President of the Water Environment Federation (WEF) in 2003-2004, and earned the Charles Alvin Emerson Medal from WEF in 2000 for outstanding contributions to the wastewater collection and treatment profession and the Arthur Sidney Bedell Award from WEF in 1997. In 2002, Jaworski was presented with the Distinguished Alumnus Award from the University of Illinois Department of Civil and Environmental Engineering Alumni Association. He is a registered professional engineer in eight states and the District of Columbia.

## Johnson, Larry

### Palm Beach County Water Department

Mr. Larry Johnson, P.E., is Assistant Department Director for the Water Utilities Department in Palm Beach County, Florida. He is in charge of all operations and maintenance functions for Palm Beach County Water Utilities Department, which serves a population of 500,000, has a staff of 250+ and a budget exceeding \$50 million. Mr. Johnson previously was Director of Environmental Services Department for Lee County Florida and a Director of the Florida Governmental Utility Authority. He holds a B.S. in Aeronautical Engineering from Ohio State University, and an M.S. in Mechanical Engineering from Ohio State University. Mr. Johnson has over 35 years experience with executive positions in local government, federal government and consulting engineering organizations, including extensive experience in electric, solid waste and water/wastewater utility management. He specializes in and has implemented a department wide asset management program to assess the condition, extend the useful life and rehabilitate \$1 billion of aging water utility infrastructure. This includes developing methods to involve all levels of employees and assure continuous improvement of business processes needed to evaluate and rehabilitate water utility infrastructure. Mr. Johnson was a member of the American Water Works Association Research Foundation (AwwaRF) project advisory committee for the "SIMPLE" asset management program. He presented asset management papers at Water Environment Federation Technical Exhibition and Conference (WEFTEC) and will present a workshop at the next WEFTEC conference. He is a professional engineer in Tennessee and Florida.

**Kirmeyer, Gregg****HDR, Inc. Consulting**

Gregg Kirmeyer, PE, is a Senior Vice President of HDR and is National Director of Drinking Water. He holds a B.S. in Civil Engineering from the University of Missouri, Rolla, and an M.S. in Environmental Engineering from Clemson University. Mr. Kirmeyer has over 35 years of professional experience primarily related to drinking water supply, water quality, water treatment and water distribution. He manages or serves as a task leader on water quality and regulatory impact studies. Mr. Kirmeyer is routinely requested to serve as a special technical advisor on Review Boards and panels addressing an infrastructure, a water treatment or distribution system issue. He has assisted water utilities in improving drinking water quality from source to tap. Mr. Kirmeyer specializes in water distribution system evaluations including condition assessment, corrosion control and replacement strategies for aging infrastructure. He has conducted primary disinfection studies involving chlorine, chlorine dioxide, and ozone and has conducted filtration removal studies using granular media and membrane filters. Mr. Kirmeyer has evaluated and designed secondary disinfection treatment facilities involving free chlorine and chloramines. He has authored chapters in two books on corrosion control practices and successfully managed several projects for utilities related to infrastructure and water quality improvement. Efforts by Mr. Kirmeyer have led the way in the evaluation of distribution system materials including their susceptibility to leaching of metals and corrosion. In addition, he has developed consumer-based programs that have led to controlling tastes and colored waters that can be generated in the distribution system. Mr. Kirmeyer has assisted utilities in developing and implementing capital improvement plans for their infrastructure needs. He was instrumental in developing Guidance Manuals outlining Best Management Practices for utility staff to operate and maintain water distribution and storage systems to prevent water quality deterioration.

**Leighton, Jeffrey****Portland Water Bureau**

Mr. Leighton is a Senior Engineer with the City of Portland Water Bureau. He manages their Asset Management Branch, which is dedicated to the advancement of asset management in the utility, through development and application of a variety of analytical tools, including risk ranking, business case development and forecasting of asset replacement needs. Mr. Leighton holds a B.S. in Civil Engineering from the University of California, Berkeley, and an M.S. in Civil Engineering from Cornell University. His group at the City of Portland Water Bureau is responsible for creation and implementation of asset plans for maintenance, repair and replacement. Mr. Leighton is a member of the International Water Association (IWA) Water Services Association of Australia (WSAA) Asset Management Process Benchmarking Steering Committee. He has managed the City of Portland Water Bureau's involvement in three years of asset management benchmarking with Australian utilities, when he participated in Best Practice workshops and visited numerous utilities in Australia and New Zealand. He has been a member of five Project Advisory Committees on asset management for the Water Research Foundation and is currently a member of the Infrastructure Research Advisory Council. He has over twenty five years of experience working in utilities or as a consultant.

## **Livingston, Byron**

### **Black and Veatch, Inc.**

Mr. Bryon Livingston, P.E. is a Senior Project Engineer/Engineering Manager working in the buried infrastructure practice located in the Kansas City, Missouri office of Black & Veatch. Mr. Livingston holds a B.S. in Civil Engineering from the University of Utah and is a registered professional engineer in Oklahoma, Missouri and Kansas. With more than twenty seven years experience that includes condition assessment of water and wastewater pipelines, pipeline design and construction, and operation of water supply, treatment, and distribution facilities, Mr. Livingston's work includes coordinating with the regional offices to assist them in providing clients with solutions to their condition assessment projects. He also works with the various suppliers of technology for condition assessment to be familiar with what is currently available in the marketplace and how it can be applied to the various projects. Prior to joining Black & Veatch, Mr. Livingston's work experience includes Director of Water Utilities for Bartlesville, OK where he was responsible for supply, treatment and distribution operations for the city. This work focused on replacing much of the aging infrastructure in the system. He also worked for the city of Olathe, KS as a senior project manager on capital improvement projects. The work included administration of the contract documents, coordinating the engineering and construction work with the inspectors, holding public meetings, and supervising other project managers. Mr. Livingston's additional experience includes environmental compliance and permitting for Phillips Petroleum and Honeywell Corporations. The responsibilities included providing guidance to assist the operating and manufacturing departments to with compliance to environmental regulations including National Pollution Discharge Elimination System (NPDES), National Emissions Standards for Hazardous Air Pollutants (NESHAPs), the Comprehensive Environmental Response, Compensation and Liability Act/Superfund Amendments and Reauthorization Act (CERCLA/SARA), Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), and the Toxic Substances Control Act (TSCA). He was assigned to develop spill response and contingency planning and review of spill prevention (SPCC) plans at the corporate level. He also participated in corporate Environmental and Safety audits of various facilities.

## **Maldonado, Liliana**

### **CH2M Hill, Inc.**

Ms. Maldonado is currently Senior Vice President and Northeast Regional Manager for CH2M Hill, Inc. She received a B.S. in Civil Engineering from the University of Puerto Rico and an M.S. in Sanitary Engineering from the Georgia Institute of Technology. Ms. Maldonado is a member of the 2007-2008 Board of Trustees for the Water Environment Federation (WEF), an international organization of water quality professionals headquartered in Alexandria, Va. Prior to her current position, she managed multiple water and wastewater projects, including the first 2 years of an unprecedented \$2.1-billion water and wastewater capital improvement program in Puerto Rico and the conceptual development and design of the Virginia Initiative Plant, a state of the art wastewater treatment facility that incorporated a new process for biological nutrient removal. The project received the American Consulting Engineering Council's prestigious "Grand Award" in 1992. A WEF member since 1979, Ms. Maldonado is also an active member and Past President of the Virginia Water Environment Association (VWEA). She was also a member of the Water Environment Research Foundation (WERF) Research Council from 1993 to 1996 and of the Advisory Boards for the School of Civil and Environmental Engineering of the Georgia Institute of Technology and the University of Puerto Rico Civil Engineering Infrastructure Research Center. Ms. Maldonado is also a co-patent holder for the High-rate biological wastewater treatment process using activated sludge recycle, U.S. Patent 4,867,883, and has published extensively in numerous grey and peer-reviewed technical publications in the water and engineering industry. She received the Enslow-Hedgepeth Award from VWEA in 1990; the Council of Outstanding Young Engineering Alumni Award from the Georgia Institute of Technology in 1995; WEF's prestigious Arthur Sidney Bedell Award in 1999; the Hispanic Engineers National Achievement Awards Corporation award for Professional Achievement in 2002; and the Outstanding Alumni Award from the University of Puerto Rico at Mayaguez in 2007. Ms. Maldonado is a registered professional engineer in Puerto Rico and Virginia, and a Diplomate of the American Academy of Environmental Engineers.

## **Martin, Terry**

### **Seattle Public Utilities**

Mr. Terry Martin is the Acting Director of the Asset Management and Economics Services Division at Seattle Public Utilities (SPU). He holds a B.S. in Civil Engineering from the University of Washington and a B.A. in Political Science from the University of Washington. His work over the last several years has included creating and developing risk models, authoring multiple wastewater and drainage-related strategic asset management plans, and working on tactical plan items with particular emphasis on risk management, triple bottom line (financial, social, and environmental) costing, and lifecycle costing principles. In addition to the above technical items Mr. Martin has spoken at numerous venues in the last six years on asset management within the water and wastewater industry and in addition has authored or participated in development of multiple asset management-related journal articles and publications. He has over 18 years of experience in both the private and public sectors involving the planning, design, and construction of municipal water, wastewater, and drainage system infrastructure.

## **Mergelas, Brian**

### **Pressure Pipe Inspection Company**

Dr. Brian Mergelas is the founding President and CEO of the Pressure Pipe Inspection Company, Mississauga, Ontario. He holds a B.ScH and a Ph.D. in Physics from Queen's University, Kingston, Ontario, Canada. Dr. Mergelas has been involved in non-destructive pipe testing for nearly twenty years. His Ph.D. work at Queen's University focused on detailed studies of the response of defects to electromagnetic fields. When Dr. Mergelas founded the Pressure Pipe Inspection Company in 1997, he brought with him many ideas relating to pipeline life extension and risk management that were prevalent in the oil and gas sector where he had worked, and investigated advanced non-destructive testing systems for high pressure transmission pipelines. He and his company have been a driving force in adoption of advanced condition assessment techniques in the water and wastewater sectors. Dr. Mergelas' work through various committees and within various organizations has promoted the idea that while the nation's pipeline infrastructure may be aging, that condition-based decisions regarding rehabilitation and replacement can be used to safely extend the operating life of many systems. Through the ongoing development and deployment of a wide range inspection technologies, he has overseen the assessment of over 4,000 miles of water pipeline systems around the world. The Pressure Pipe Inspection Company partners with many of the world's largest municipalities and Dr. Mergelas has close relationships with key water industry professionals and senior executives both in the US and abroad. Dr. Mergelas' commitment to advancing condition assessment solutions for the municipal water and wastewater, and industrial industries is well documented. In addition to publishing over 50 papers in academic and industry journals, he co-authored the America Water Works Association Research Foundation (AwwaRF) book "Electromagnetic Inspection of Prestressed Concrete Pressure Pipe."

## **Mogolesko, Fred**

### **Entergy Company**

Dr. Fred Mogolesko currently serves as a consultant to the energy generation industry where he is currently examining aging mechanisms for systems, structures, and components, and recently retired as a Senior Project Manager for the Entergy Corporation having held this position since 1999. Dr. Mogolesko holds a B.S. and an M.S. in Aerospace Engineering and Applied Mechanics from the Polytechnic Institute of Brooklyn in 1964 and 1968, respectively; and an M.S. and a Ph.D. in Oceanography (with Meteorology minor) from New York University in 1971 and 1977, respectively. Prior to working for the Entergy Corporation, Dr. Mogolesko served as a Senior Project Manager for the Boston Edison Company from 1987-1999. He also served as a Partner and Vice President of SeaMat Ocean Systems and FRW, Inc. between 1995 and 2002. Dr. Mogolesko is a Certified Consulting Meteorologist under the American Meteorological Societies (AMS) Program. He was an Associate Editor of the Journal of Applied Meteorology and has Chaired the Nuclear Energy Institutes Committee on Dispersion Models for Atmospheric Pollutants, and the Boiling Water Reactor Owners' Group (BWROG) Committee on Instrument Uncertainty. Dr. Mogolesko is currently a member of the U.S. Department of Energy (DOE) Meteorological Coordinating Council. From the technical and project management perspective, he has had significant technical and management responsibilities in the following topical areas: Lunar Excursion Module flight dynamics; Thermal Dispersion Modeling in Reversing Tidal Estuaries; Ocean Wave Spectra; Large Scale Ocean Circulation Models; Internal Waves in the Ocean; Air-Sea Interaction; Sea-Breeze Phenomena; Developing Probabilistic Risk Assessment Models of Complex Systems; Decision Analyses Under Uncertainty; Radiological Dispersion Analysis; Emergency Planning for Radiological Scenarios; Economic Costs vs Frequency of Event Occurrences; and Regulatory Agency Interactions. Dr. Mogolesko's project management experience has involved projects where he has managed as many as eighty five engineers, scientists, and field implementation specialist. These projects have addressed significant issues contained in the corporate asset management plan.

## **Murphy, Eileen**

### **New Jersey Department of Environmental Protection**

Dr. Murphy is the Director of the New Jersey Department of Environmental Protection (NJDEP) Division of Science, Research and Technology. Before becoming Director in 2004, she served as Assistant Director for four years and as a research scientist for 15 years within the group, developing an expertise in the drinking water field. Dr. Murphy holds a B.S. in English with a minor in Biology from the University of Notre Dame, an M.S. in Environmental/Outdoor Education from Northern Illinois University, and a Ph.D. in Environmental Science from Rutgers University. Dr. Murphy has focused much of her career on drinking water science, including contaminant occurrence and fate and transport. She has been involved in the issue of lead service line replacement and has a broad expertise in the issue of infrastructure aging, particularly as it relates to contamination of drinking water. She is also experienced in the issue of unregulated contaminants in drinking water and the treatment to remove them from finished water. Dr. Murphy has provided the Department and the state with needed technical information concerning current and emerging issues in environmental science, including a strong role in standards development and research focused on recognizing developing environmental issues that could impact the environment in New Jersey. Her particular research emphasis is on exposures to toxic substances, fate and transport of toxic substances and assessments of the potential risks to human health and the environment posed by these exposures. Dr. Murphy's specific scientific expertise is in the area of environmental contaminant transport as they relate to the vulnerability of drinking water contamination. She has investigated the issue of sources of lead in school drinking water, sources of mercury in private wells in southern New Jersey and of arsenic in northern New Jersey, and is currently conducting studies to examine the impacts of unregulated organic contaminants, including pharmaceuticals and perfluorinated compounds, in drinking water supplies throughout the state. She is co-author on numerous peer-reviewed scientific papers that have appeared in scholarly journals, including Environmental Science and Technology. In addition to her work with the NJDEP, Dr. Murphy is serving on a National Academy of Sciences Air Transportation Research Board panel, which is charged with investigating the influence of environmental factors on emissions of hazardous air pollutants from jet engines. Before coming to NJDEP, Dr. Murphy served as Assistant Director for the Douglass Project for Rutgers Women in Math and Science and as a Project Manager for the Center for Math, Science and Computer Education at Rutgers University.

## Nelson, Richard

### CH2M Hill, Inc.

Mr. Nelson is the Global Conveyance Infrastructure Technology Practice Director for CH2M HILL Inc., with regional and global infrastructure technology and business development responsibilities. Mr. Nelson holds a B.S. in Biology from Bradley University, and an M.S. in Environmental Engineering from Illinois Institute of Technology. Mr. Nelson's research interests are focused on understanding the condition, renewal, and maintenance of buried water and wastewater infrastructure. He specializes in projects related to buried infrastructure systems for municipalities, utilities, and industry, and is responsible for leading the overall conveyance technology practice area including wastewater collection, water distribution, condition assessment, and trenchless technologies. His project experience includes infrastructure planning for both water and wastewater systems, CMOM related projects, wet weather projects including combined and separate system evaluations, design, construction services, asset management, maintenance management plans, condition assessment, modeling, and geographical information system (GIS) applications. Mr. Nelson has completed and presented many technical papers and participated in significant research projects and professional publications. He was a principal author for the Water Environment Federation (WERF) research project entitled, "Methods of Cost-Effective Rehabilitation of Private Lateral Sewers". He was principal investigator of the Water Environment Research Foundation (WERF) project entitled "Effective Practices for Sanitary Sewers and Collection Systems Operation and Maintenance", and also served as the Principal Investigator for two projects completed under cooperative agreements between the American Society of Civil Engineers (ASCE) and the United States Environmental Protection Agency (EPA). The first project was entitled, "Optimization of Collection System Maintenance Frequencies and System Performance". The second project was entitled, "Protocols for Identifying Sanitary Sewer Overflows". Mr. Nelson was also a principal author another project conducted under a cooperative agreement between the American Society of Civil Engineers and EPA entitled, "Solutions to Sanitary Sewer Overflows". All three projects are part of the EPA wet weather toolbox posted on the EPA web site. Mr. Nelson was a contributing author for the Water Environment Federation (WEF) publication entitled, "Guide to Managing Peak Wet Weather Flows in Municipal Wastewater Collection and Treatment Systems". Mr. Nelson was also the Chair of the ASCE Task Committee which developed ASCE Manual No. 92 on Manhole Inspection and Rehabilitation, and a member of the Project Advisory Committee for the AWWA project, "Evaluating Pipeline Life Cycle". Mr. Nelson is a recipient of the Water Environment Federation Golden Manhole Award. He is a Registered Professional Engineer in Kansas, Missouri, Texas, Iowa, Wisconsin, and Washington.

## Nixon, Randy

### Corrosion Probe, Inc.

Mr. Nixon is the founder, Senior Consultant and President of Corrosion Probe, Inc. (CPI), a specialized consulting engineering and testing company in Centerbrook, CT, which is focused on water infrastructure assessment, rehabilitation and renewal projects. Mr. Nixon holds a B.S. in Civil Engineering and Corrosion and Materials Science from the University of New Brunswick, Canada. Mr. Nixon has over 30 years of experience in performing condition assessment evaluations, corrosion testing, and rehabilitation and corrosion protection design for water and wastewater infrastructure including transmission pipelines, aqueducts, distribution and collection system piping, tunnels, water and wastewater treatment plant tanks, pump stations, conduits and structures. Mr. Nixon and CPI are well known for their depth of expertise in this area, and have significant experience in working with large water/wastewater systems across the United States, from Los Angeles, CA and Seattle, Washington to Washington, DC, Boston, MA, Philadelphia, PA, Atlanta GA, and many systems in between. Mr. Nixon's research interests are in corrosion protection materials for metals and concrete, improved concrete durability, and corrosion monitoring. Mr. Nixon is an active member of American Water Works Association (AWWA), Water Environment Federation (WEF), Technical Association of the Pulp and Paper Industry (TAPPI), the National Association of Corrosion Engineers (NACE International), and the Society for Protective Coatings (SSPC), and is widely published within his areas of expertise.

## Novotny, Vladimir

### Northeastern University

Dr. Novotny is a Professor of Environmental Engineering at Northeastern University and has been a holder of an endowed chair. He received a Diploma Engineer degree in Sanitary Engineering from the Technical University of Brno, Czechoslovakia; a Candidate of Science in Sanitary and Water Resources Engineering (a Ph.D. equivalent) from the Tech. Univ. of Brno, Czechoslovakia; and a Ph.D. in Environmental and Water Resources Engineering from Vanderbilt University. Dr. Novotny's recent research includes the Development of a Risk Propagation Model for Estimating Ecological response of Streams to Anthropogenic Watershed Stresses and Stream Modifications and his current research interests are development of sustainable water centric urban infrastructure and resource management (ecocities). He is an expert on implementing new sewer-less urban runoff drainage systems that mimic natural water cycle and reclaim water for reuse. His books include Cities of the Future: Towards Integrated Sustainable Water, Landscape and Infrastructure Management; Diffuse Pollution: An Introduction to the Problem and Solutions, Water Quality: Diffuse Pollution and Watershed Management; Remediation and Management of Degraded River Basins; Nonpoint Pollution and Urban Stormwater Management; Water Quality: Prevention, Identification and Management of Diffuse Pollution; and Handbook of Urban Drainage and Wastewater Disposal. He authored or co-authored nationwide manuals on use attainability analysis, management of urban and highway snowmelt, and urban stormwater management. He was a member of the National Research Council Committee to Assess the Scientific Basis of the TMDL Approach to Water Pollution Reduction and co-authored the NAS published book Assessing the TMDL Approach to Water Quality Management. In the last two years he has been invited to present and published lectures on sustainable urban infrastructure and system management at the Oxford University (UK), UNESCO (Paris), Belgium, China, Korea, and Singapore, Philadelphia and Chicago. He organized and co-chaired several international conferences on diffuse pollution, urban runoff and best management practices in the US, Czech Republic, Scotland, and China.

He is a member of the International Water Association (IWA), Water Environment Federation, and American Water Resources Association, and is a Registered Professional Engineer in the State of Wisconsin. He was a founder and chairman of the IWA International Group of Specialists on Diffuse Pollution and Eutrophication. Dr. Novotny is a Diplomate of the American Academy of Environmental Engineers (selected by eminence), was elected a Member of The International Water Academy (Oslo, Norway), and received the Sam Jenkins Medal for Outstanding Service from the International Water Association. Between 2006 and 2008 he was a visiting chair professor at the Capital Normal University in Beijing and currently he is a Fulbright Senior Specialist (urban planning and environmental science), working with Academia Sinica in China and as a visiting professor at the Prague (Czech Republic) Institute of Chemical Technology. Activities in Prague and China involve finding watershed solutions to the water quality problems of surface water supply systems. He has been a consultant on TMDL, water quality of water supply reservoirs and lakes, and other urban water infrastructure and system management topics.

## Reible, Danny D.

### University of Texas, Austin

Dr. Reible is the Bettie Margaret Smith Chair of Environmental Health Engineering at the University of Texas and Coordinator of Environmental and Water Resources in the Department of Civil, Architectural and Environmental Engineering. In 2004 he joined the University of Texas after 23 years in the Department of Chemical Engineering at Louisiana State University (LSU). He holds a B.S. in Chemical Engineering from Lamar University, and an M.S. and Ph.D. in Chemical Engineering from California Institute of Technology. Dr. Reible's research career has been focused on understanding the fate and transport of contaminants in the environment, evaluating the risks posed by these contaminants, and devising effective measures for risk mitigation. He has been active in technical and policy issues associated with the assessment and in-situ remediation of contaminated sites. He has coauthored four National Research Council committee reports on risk assessment and remediation of contaminated sites, is the author of the textbooks "Fundamentals of Environmental Engineering" and "Diffusion Models of Environmental Transport", and has authored more than 100 refereed technical papers. Dr. Reible has been a member of four Committees of the National Research Council, and currently serves on the National Research Council Board of Environmental Studies and Toxicology. He is an Associate Editor of the Journal of the Air and Waste Management Association, the Journal of Environmental Forensics, and the Journal of Environmental Engineering. Dr. Reible is a Fellow of the American Institute of Chemical Engineers and the American Association for the Advancement of Science. He is a Board Certified Environmental Engineer, a Professional Engineer (LA) and in 2005 was elected to the National Academy of Engineering for the "development of widely used approaches for the management of contaminated sediments".

## Rose, Duncan

### GHD Consulting, Inc.

Mr. Rose serves as Principal Consultant and Technical Director – Asset Management (AM) for GHD Consulting Inc. in Charlotte N.C., which is the U.S. arm of an Australian-based international engineering and management consulting company that has pioneered the practical application of advanced asset management to virtually all forms of public and private infrastructure assets. Mr. Rose holds a B.A. in Management and Economics from Grove City College, Grove City, Pennsylvania, an M.S. in Planning from the University of Tennessee, and an Ma.P.A. in Public Sector Management from The Ohio State University. He is also a graduate of the U.S. Army Combat Engineering Officer’s Candidate School. Mr. Rose is a former City/County manager with senior management experience with the cities of Columbus, Ohio and Dallas, Texas; he then served as a Deputy County Manager in Gainesville, Florida and as County Manager for Seminole County in the Orlando area, where he grappled with the realities of AM decision making first hand. Mr. Rose has over 20 years’ experience serving in executive management positions as a management consultant, and has built an extensive range of challenging AM project experience across the U.S. For the past 10 years, his focus has been entirely on developing advanced asset management practices in the water industry (particularly in the areas of risk, optimized decision making, failure modes and reliability, and funding strategies, especially in buried infrastructure). Mr. Rose served for nine years as an adjunct faculty member in the Askew School of Public Policy and Administration at Florida State University where he taught graduate level government financial resource management.

Mr. Rose is keenly focused on the asset management practitioner. He currently serves on the Board of Directors for BAMI-I (the Buried Asset Management Institute – International). He leads the multi-year decision making and implementation research track for the Water Research Environment Foundation’s Strategic Asset Management project (executed in collaboration with the Water Research Foundation, the Global Water Research Coalition and United Kingdom Water Industry Research). He developed and for six years has led USEPA’s intensive two day asset management training seminars, “The Fundamentals of Asset Management,” reaching over 3,000 industry participants. Mr. Rose is a co-author of the best-selling textbook Managing the Water and Wastewater Utility (Water Environment Federation), and a contributing author to the latest internationally recognized International Infrastructure Management Manual. Among other local government management publications, he is a contributing author for Innovative Governments, Creative Approaches to Local Problems (Praeger Publishers), a textbook about effecting change in complex local government political environments, and a co-author of Creating a Stormwater Utility in Florida, a manual published by the Florida Stormwater Association. Mr. Rose has presented numerous papers and led many projects and seminars on asset management and utility management.

## Scott, Charles

### Las Vegas Valley Water District

Mr. Scott is the manager of the Las Vegas Valley Water District's Asset Management organization and is responsible for developing and implementing strategies and programs to sustain the District's over 4,500 miles of piping and other infrastructure. He holds a B.S. in Mechanical Engineering from Louisiana Tech University, and is a registered professional mechanical engineer with over 25 years of experience in both the private and public sectors. Mr. Scott’s expertise is in reducing cost and improving reliability through improved maintenance and operation practices. He has direct experience in implementing an underground infrastructure management program used to forecast short-term and long-term pipe replacement needs. Mr. Scott has helped pioneer the use of non-invasive pipe condition assessment techniques for steel and asbestos cement pipe. He also manages a corrosion control program used to extend the life of underground steel structures. Mr. Scott has published papers and given professional presentations on topics related to reliability and asset management.

## Selna, Michael

### Los Angeles County Sewer District

Mr. Selna, P.E., is the former Assistant Chief Engineer/General Manager of the Los Angeles County Sanitation Districts, an agency providing wastewater collection/treatment and solid waste management for 5.2 million constituents. Before retiring in November 2008, he served on the staff of the Sanitation Districts for 36 years after earning a B.S. in Civil Engineering at the University of California, Berkeley in 1970 and an M.S. in Environmental Engineering at the University of California, Davis in 1973. His career included wastewater research, solid waste operations, and for 22 of the 36 years, oversight of design and construction of \$100 million/year of wastewater and solid waste infrastructure prior to his executive management role. Much of the infrastructure work involved wastewater collection and treatment system rehabilitation and expansion. Mr. Selna has a keen interest in stimulating young people to become Environmental Engineers so that they may participate in the effort to renew the nation's infrastructure. He is Chairman of Environmental Engineers of the Future (E<sup>2</sup>F), a non-profit organization providing funding for Masters Degrees in Environmental Engineering. E<sup>2</sup>F, a partnership among agencies and firms involved in water, wastewater, and solid waste management linked to 65 universities, has provided \$920,000 to students since 2005. Mr. Selna was elected to the Board of Trustees of the American Academy of Environmental Engineers in 2006 and serves on six of the Academy's committees. He has also participated on committees of the Water Environment Federation and the California Water Environment Association dealing with design and construction of wastewater treatment facilities.

## Shannon, Mark

### University of Illinois, Urbana-Champaign

Dr. Mark A. Shannon is the Director of a U.S. National Science Foundation Science and Technology Center for Advanced Materials for the Purification of Water with Systems (WaterCAMPWS), which is a multiple university and government laboratory center for advancing the science and engineering of materials and systems for revolutionary improvements in water purification for human use. He holds a B.S., M.S., and Ph.D. in Mechanical Engineering from the University of California, Berkeley. Dr. Shannon is the James W. Bayne Professor of Mechanical Engineering at the University of Illinois at Urbana-Champaign. He also is Director of the Micro-Nano-Mechanical Systems (MNMS) Laboratory at UIUC, a 2000 sq. ft class 10 and 100 cleanroom laboratory devoted to research and education in the design and fabrication of micro- and nanoelectromechanical systems (MEMS & NEMS), microscale fuel cells and gas sensors, micro-nanofluidic sensors for water and biological fluids. Dr. Shannon also chairs the Instrument Systems Development Study Session for the National Institutes of Health.

## Sinha, Sunil

### Virginia Technological University (Va Tech)

Dr. Sinha is Associate Professor of Civil and Environmental Engineering at Virginia Polytechnic Institute (Virginia Tech). In addition, he is Co-director of the newly created Center of Excellence in Sustainable Water Infrastructure Management (SWIM). In this capacity, he is responsible for teaching undergraduate and graduate civil engineering courses, and for leading and managing an active research program in the civil infrastructure-related topics. He holds a Bachelor of Engineering degree specializing in Civil Engineering from Birla Institute of Technology, Ranchi, Bihar, India, and an M.S. in Civil Engineering and a Ph.D. in Civil and Systems Design Engineering from the University of Waterloo. Dr. Sinha's research, teaching, and consulting are in the areas of asset management, pattern recognition, sensor informatics, and sustainable infrastructure. He also holds an Adjunct Professor of Systems Design Engineering at the University of Waterloo, Canada and in the Civil and Environmental Engineering at Pennsylvania State University. Dr. Sinha has seven years of practical experience in the infrastructure industry. Currently, Dr. Sinha has several ongoing research projects, funded by the National Science Foundation (NSF), U.S. Environmental Protection Agency, Water Environment Research Foundation, and Industry and all related to the water infrastructure system. He is also working closely with international research institutions in the areas of water infrastructure such as the Australian Commonwealth Scientific and Research Organization (CSIRO), National Research Council, Canada, University of Birmingham, U.K., and SINTEF, Norway. Dr. Sinha's research includes the development of an integrated water and wastewater pipe management system with recent sensor technologies, non-destructive testing tools, and condition/performance deterioration modeling. He has successfully completed ten funded research projects (total amount approximately \$2 million) and currently working on seven funded research projects (total amount approximately \$2.5 million). Dr. Sinha is a recipient of the NSF CAREER Award for research in the areas of Sustainable Water Infrastructure Management System (SWIMS). He has also been granted NSF International Research and Education in Engineering (IREE) Award to visit European and Australian research institutions. Dr. Sinha was named the Schreyer Institute InSPIRE Academy Fellow by Penn State in 2006 and is a recipient of College of Engineering Faculty Fellow (2009 – 2011) at Virginia Tech.

Dr. Sinha has documented and disseminated the results and findings from his research work in over 121 publications in technical referred journals, technical conference proceedings, and technical reports. Dr. Sinha is a member of the American Society of Civil Engineers (ASCE), American Society of Engineering Education (ASEE), American Society of Testing Materials (ASTM), Canadian Society of Civil Engineers (CSCE), and North American Society for Trenchless Technology (NASTT). He serves on the ASTM F-36 Committee for Underground Civil Infrastructure Systems, ASEE Committee on Construction Engineering Education, and chair of ASCE Task Committee on Pipeline Infrastructure Data Management. He has also been a regular contributor of the research and educational efforts of the NASTT. Dr. Sinha is the seed behind a new Public Broadcast System (PBS) documentary titled "Liquid Assets: The Story of Our Water Infrastructure." that throws light on a long-buried problem -- America's aging water system. The film is a startling look at water service lines that Americans use every day, but rarely consider. Dr. Sinha has given many National Public Radio (NPR) interviews and will feature as a water infrastructure expert in a new History Channel documentary titled "CRUMBLE," which looks at America's infrastructure crisis, including its causes, consequences, and what can be done to fix the system.

## **Smullen, James**

### **Camp, Dresser and McKee, Inc.**

Dr. James T. Smullen is a Senior Vice President at Camp Dresser and McKee with over 25 years of experience in surface water resources as a specialist in sewer system and stormwater runoff applied research and planning. He has served as CDM's National Hydraulics and Hydrology Discipline Leader for 4 years. Dr. Smullen holds a B.S. in Civil and Environmental Engineering, a B.A. in Economics, and an M.S. in Civil and Environmental Engineering from Rutgers University; and a Ph.D. in Marine Studies from the University of Delaware. He is a Board Certified Environmental Engineer by the American Academy of Environmental Engineers and is licensed as a Professional Engineer in the states of Delaware and New Jersey, and the Commonwealth of Pennsylvania. For the past seventeen years, Dr. Smullen's professional endeavors have been primarily in the field of large-scale sewer collection systems rehabilitation planning, and applied stormwater runoff research. He manages sewage infrastructure planning projects for large and small, highly urbanized areas in the US, including the City of Philadelphia; the City of Pittsburgh and the 82 surrounding communities; Wheeling, WV; Rahway Valley's Sewage Authority, NJ; and Perth Amboy NJ. The principal efforts for these planning endeavors concentrate on infrastructure planning for the long-term remediation of combined sewer overflows, sanitary sewer overflows, storm sewer system capacity issues, and sewerage infrastructure deterioration problems. Dr. Smullen maintains a strong ethic that influences his long term sewerage planning efforts for America's cities, seeking to embrace green stormwater infrastructure approaches to control stormwater runoff at the source and reduce traditional infrastructure needs for the future.

## **Speight, Vanessa**

### **Malcolm Pirnie Consultants**

Dr. Vanessa Speight is an Associate with Malcolm Pirnie in Arlington, VA, specializing in drinking water distribution systems. She leads Malcolm Pirnie's practice in distribution system modeling and master planning. Dr. Speight holds a B.S. in Civil Engineering from McGill University in Montreal, Quebec and an M.S. and Ph.D. in Environmental Engineering from the University of North Carolina at Chapel Hill. She is actively involved in consulting and research on distribution system topics, particularly concerning the application of models for planning, operations, water quality, and regulatory compliance. Dr. Speight's work has covered master planning for capital improvements, asset management, development of sampling plans, disinfection by-product occurrence and prediction, microbial fate and transport, infrastructure rehabilitation, and regulatory development for major municipal clients, research foundations, and the U.S. Environmental Protection Agency (EPA). She recently assisted EPA in facilitating the Technical Work Group for the Total Coliform Rule/Distribution System Federal Advisory Committee. She has over fifteen years of experience in the drinking water industry with extensive involvement in professional association committees.

## **Stenstrom, Michael**

### **University of California at Los Angeles (UCLA)**

Dr. Michael K. Stenstrom is a Distinguished Professor in the Civil and Environmental Engineering Department at UCLA. He holds a B.S. in Electrical and Computer Engineering, M.S. in Environmental Systems Engineering and a Ph.D. in Environmental Systems Engineering, all from Clemson University. He is a licensed professional engineer in California (1984) and a Board Certified Environmental Engineer (1989). Dr. Stenstrom worked from 1975 to 1977 at Amoco Oil Company designing petroleum refinery wastewater treatment plants. At UCLA he has held administrative positions of Civil and Environmental Engineering Department Chair (8 yrs), Assistant and Associate Dean (8 yrs) in the School of Engineering and Applied Science, and Institute of the Environment Director (1.5 yrs). Dr. Stenstrom's research has focused on applications of science and engineering principles to wastewater treatment, and more recently to stormwater management. He has performed research to improve nitrification, enhance the removal of toxic materials at wastewater treatment plants, and several aspects of gas transfer, including aeration, stripping of organic compounds and heat loss. Dr. Stenstrom is a frequent consultant to treatment agencies who want to upgrade their aeration systems for energy conservation or plant capacity expansion. In the last 15 years he has performed research to reduce non-point source pollution from urban areas, and particularly from transportation land use. Dr. Stenstrom has authored more than 150 journal papers and managed more than \$13,000,000 in research grants and contracts. He has received numerous awards including the 1976 AEESP Doctoral Dissertation Award, ASCE's Walter L. Huber Civil Engineering Research Prize, WEF's Harrison Prescott Eddy Prize, two research innovation awards from the California Regional Water Quality Board and the Dow Environmental Care Award.

## **Traver, Robert**

### **Villanova University**

Dr. Traver is Professor of Civil and Environmental Engineering and Director of the Villanova Urban Stormwater Partnership in the Department of Civil and Environmental Engineering at Villanova University College of Engineering. He holds a B.S. in Civil Engineering from Virginia Military Institute, an M.S. in Civil Engineering from Villanova University, and a Ph.D. from Pennsylvania State University. Dr. Traver's research addresses the challenges of mitigating the damaging effect of urban stormwater on our natural environment. He founded the Villanova Urban Stormwater Partnership using the university as a test site for sustainable stormwater management, and includes research associated with the Nonpoint Source National Monitoring Program. His research is funded primarily by the U.S. Environmental Protection Agency (EPA), the Pennsylvania Department of Environmental Protection, Ciceet, and corporate donors. Dr. Traver was a National Research Council Committee Member that authored "Urban Stormwater Management in the United States" (funded by the EPA), and was a member of the American Society of Civil Engineers' External Review Panel of the New Orleans Hurricane Protection System-Oversight of Corps of Engineers' Hurricane Katrina Investigation. He served as Chair of the Pennsylvania Stormwater Management Symposium (1998, 1999, 2001, 2003, 2005, and 2007), served on the Oversight Committee for Pennsylvania's 2006 Stormwater Best Management Practices manual, and is now a member of Pennsylvania's DEP Water Resources Advisory Committee. He has taught courses and conducted research in hydrology, hydraulics, urban stormwater management, and all facets of water resources at Villanova University since 1988.

## **Tunncliffe, Peter**

### **Camp, Dresser and McKee, Inc.**

Peter W. Tunncliffe is a Senior Vice President with the firm of Camp Dresser & McKee Inc. (CDM) in Cambridge, Massachusetts. He holds a B.S. in Civil Engineering from Worcester Polytechnic Institute, an M.S. in Water Resources at Northeastern University, and a Juris Doctorate from Brooklyn Law School. He also completed executive studies at Stanford, and at the Institute of Risk Management in London. Mr. Tunncliffe is a professional engineer in nine states and Puerto Rico, a professional planner in NJ, a Licensed Construction Supervisor in Massachusetts, and a Licensed Attorney in the State of New York. He holds a certificate in International Risk Management from the London-based Institute of Risk Management and has been recognized by the Design Build Institute as a Design/Build Professional. Mr. Tunncliffe has practiced engineering and construction management for thirty five years and specializes in water and wastewater infrastructure throughout the United States. He has led design teams on some of the largest treatment facilities in the Country as well as hundreds of smaller projects. He led CDM's design/build subsidiary development and growth from inception in the early nineties through 2002. Mr. Tunncliffe is currently the Director of the Office of Project Development in CDM, working with teams across the country developing design/build infrastructure solutions for public and regulated utility clients. He has been active in numerous professional industry organizations and is currently the President of the Water Design/Build Council. Mr. Tunncliffe also serves as the Chair of the Civil and Environmental Engineering Advisory Board for Worcester Polytechnic Institute.

## **Vanreenterghem-Raven, Anni**

### **Polytechnic Institute of New York**

Dr. Vanreenterghem-Raven is a Research Associate Professor at the Polytechnic Institute of New York University. She focuses on introducing new analytical approaches to the field of rehabilitation planning of water distribution systems. Dr. Vanreenterghem-Raven received undergraduate education in Mathematics and Physics from Lycée Faidherbe, Lille, France, and holds an M.S. in Structural Engineering from École Spéciale des Travaux Publics, Paris, France, an MPH with a concentration in Environmental Sciences and a minor in Environmental Engineering from Columbia University, and a Ph.D. in Civil Engineering with a concentration in Water Engineering from Polytechnic University, New York, NY. Dr. Vanreenterghem-Raven is the main author of research studies funded by the National Science Foundation (NSF) and the U.S. Environmental Protection Agency (EPA) on water distribution infrastructure management systems. This research allowed her to start a productive collaboration with European research groups and more specifically the CARE teams. She is currently applying major asset management tools (failure forecasting models, network risk-based criticality, long-term planning simulation, Multi Criteria Decision Making Models, and Performance Indicators) to leading utilities in the United States, including Las Vegas, NV, Boston, MA, and Bridgeport, Ct. She has been invited to participate in workshops, conferences and forums sponsored by the Centre for Expertise and Research on Infrastructure in Urban Areas, Quebec (CERIU), EPA, NSF, American Water Works Association (AWWA), Water Research Foundation (WRF), Underground Infrastructure Management (UIM), Buried Asset Management Institute (BAMI) and Water Environment Research Foundation (WERF).

## **Welter, Gregory**

### **O'Brien and Gere Consultants**

Mr. Welter is a Technical Director at O'Brien & Gere, an environmental consulting firm, in Landover, MD. He holds a B.S. in Civil Engineering from Catholic University of America, Washington, DC, and an M.S. in Civil Engineering from University of Michigan. Mr. Welter's consulting work has been primarily in support of municipal water and wastewater clients, with concentrations on water distribution and wastewater collection system infrastructure, and water quality conditions assessment. In recent years he has also contracted with the Water Research Foundation (formerly known as the AWWA Water Research Foundation) and the American Society of Civil Engineers (ASCE). He has served as principal investigator on three projects conducted for Water Research Foundation, and served on advisory or review panels with the U.S. Environmental Protection Agency (EPA) and with ASCE. These advisory or review panels included the Critical Infrastructure Protection Advisory Committee (CIPAC) panel on water infrastructure decontamination, Water Contamination Information Tool (WCIT), and the Consequence Management panel for the Water Security Initiative. Mr. Welter is registered professional engineer in Maryland and the District of Columbia, and a Board Certified Environmental Engineer with the American Association of Environmental Engineers (AAEE).