

# EPA Region 6 Water Quality Modeling Conference and Workshop

## Biographies of the speakers

### **Robert B. Ambrose, Jr., P.E.**

Mr. Ambrose is a senior environmental engineer, specializing in the development and application of water quality models. Following an M.S. degree in civil engineering at MIT in 1974, Mr. Ambrose developed and applied estuarine dissolved oxygen and eutrophication models for the EPA Annapolis Field Office. There he participated in monitoring and modeling studies of the tidal Delaware and Potomac rivers to target municipal and industrial waste load reductions. In 1978, Mr. Ambrose transferred to EPA's Office of Research and Development laboratory in Athens, Georgia. For the next 31 years he developed general-purpose water quality and toxic chemical models of surface water bodies for application to various regulatory programs. He directed EPA's Center for Exposure Assessment Modeling from 1987 – 1992, leading Agency activities in water quality and exposure model distribution, technical assistance, training, and regulatory support. Throughout his career, his emphasis has been on providing EPA and the modeling community with practical technology and then assisting in its proper use. Mr. Ambrose is a principal developer of EPA's WASP model, a general purpose water quality simulation program originally developed at Manhattan College. This model has been revised and expanded over the years, and is widely used to study surface water quality issues, from dissolved oxygen and nutrients, phytoplankton and benthic algae, pH and toxicants, including organic chemicals, metals, and mercury. Mr. Ambrose retired from EPA in 2009, and provides professional assistance, consulting, and training part time. He is a regular lecturer at the EPA WASP training courses. His creative effort is focused on writing poetry ([bobambrosejr-poetry.blogspot.com](http://bobambrosejr-poetry.blogspot.com)) and performing at local venues.

### **Joseph V. DePinto, Ph.D., LimnoTech**

Dr. DePinto is a Senior Scientist at LimnoTech, a water science and engineering consulting firm in Ann Arbor MI. He has been at LimnoTech for 13 years. Before joining LimnoTech, Dr. DePinto spent 27 years in academia as a Professor of Environmental Engineering at Clarkson University and the University at Buffalo, where he was the Director of the University's Great Lakes Program. In his current position, he directs both applied research and resource management and restoration projects on a wide range of aquatic system topics, including nutrient cycling-eutrophication, hydrophobic organic chemical and heavy metal (including mercury) exposure and bioaccumulation, contaminated sediment assessment and remediation, aquatic ecosystem structure and functioning and water sustainability and stewardship. Much of Dr. DePinto's career has been focused on research and management of the Great Lakes, with important contributions to the development and application of mathematical models aimed at providing a quantitative understanding and predictive capability for the full range of issues

within the basin. Most recently Dr. DePinto's work has been directed on modeling the impacts of multiple stressors acting in concert on aquatic systems to produce multiple response endpoints. He has also worked on designing observation systems to support those models. This new paradigm of integrated modeling supports simultaneous consideration of several management areas, such as nutrient load control, toxic chemical exposure, fish harvesting/stocking practices, aquatic nuisance species invasions, and water use and resource management.

### **Brian E. Haggard, Ph.D., University of Arkansas**

Brian E. Haggard has a diverse education, where he received a BS in Life Sciences from the University of Missouri-Rolla (now, Missouri University of Science and Technology, 1994), next a MS in Environmental Soil and Water Sciences from the University of Arkansas (1997), and then a PhD in Biosystems Engineering from Oklahoma State University (2000). He has worked for two federal agencies (US Geological Survey and USDA Agricultural Research Service) and is now a Professor with the University of Arkansas and Director of the Arkansas Water Resources Center. Brian's research has focused on how nutrients and other contaminants are transported from the landscape to flowing waters and then transported downstream. His modeling experience includes using CE-QUAL-W2, evaluating QUAL-2E use in and outside of the Soil Water Assessment Tool (SWAT), and working on an external sub-routine for SWAT based on sediment-phosphorus interactions in streams. He prefers the use of water-quality data in watershed management, but understands the need to use complex water-quality models in decision support systems. Brian is an avid fisherman, hunter and golfer, and he shares these passions especially with his three children.

### **Lara P. Phelps, U.S. Environmental Protection Agency**

Lara P. Phelps is the Senior Advisor for Measurement, Modeling, Monitoring, and Laboratory Science Issues with the U.S. Environmental Protection Agency (EPA) in the Office of the Science Advisor (OSA). In over 18 years with the EPA, she has served in various positions and roles within the Office of Air and Radiation and the Office of Research and Development before joining the OSA staff. Over her years of government service, she has gained expertise in a wide range of areas from budgeting and program planning to innovative strategies and technologies. At present, she is not only an advisor for science issues, but is serving as the Director of the Forum on Environmental Measurements, Director for the Council on Regulatory Environmental Modeling, Designated Federal Official for the Environmental Laboratory Advisory Board, and Quality Assurance Manager for OSA. As a native of North Carolina, Lara elected to do her Bachelor's and Master's work in Statistics at North Carolina State University with a minor in Mathematics. She has received numerous honors including four bronze medals and service recognition in support of the Nation's response to the Deepwater Horizon Oil Spill. Lara is also involved in several professional organizations such as The NELC Institute (TNI), the Source Evaluation Society, and the Air and Waste Management Association to list a few.

### **Dong-Jun Seo, Ph.D., University of Texas Arlington**

Dr. Dong-Jun (DJ) Seo is an associate professor in the Department of Civil Engineering of the University of Texas at Arlington (UTA). He received MS from the Massachusetts Institute of Technology and Ph.D. from Utah State University. Dr. Seo has over 21 years of experience in hydrology and water resources. Before joining UTA, he led the Hydrometeorology Group and Hydrologic Ensemble Prediction Group of the National Weather Service's Office of Hydrologic Development over a 15-year period. He has been working in areas of radar rainfall estimation and short-term prediction, multisensor precipitation estimation, lumped and distributed hydrologic modeling, hydrologic and hydrometeorological data assimilation, and hydrologic ensemble prediction, and has published over 60 papers. He has served as an associated editor of the Journal of Hydrometeorology and the Journal of Hydrology and as a member of the Hydrology Committee of the American Meteorological Society and the Precipitation Committee of the Hydrology Section of the American Geophysical Union. He has been serving as a member of the Scientific Committee of Weather Radar and Hydrology (WRaH) for over 10 years.

### **Daniel E. Storm, Ph.D., Oklahoma State University**

Dr. Storm is a professor in the Department of Biosystems and Agricultural Engineering at Oklahoma State University (OSU) in Stillwater, Oklahoma. His B.S and M.S., and Ph.D. are from Virginia Tech and the University of Kentucky, respectively, in Agricultural Engineering. He has worked at OSU since 1990 and currently holds a 75/25 research/teaching appointment. Current courses include an undergraduate natural resources engineering course, and graduate level courses in applied environmental statistics and watershed modeling. His research is in the area of water quality focusing on nitrogen, phosphorus and sediment, and includes a wide spectrum of activities in water quality modeling and hydrologic processes, critical source area identification, lotic (stream/river) ecosystem dynamics, water quality standards, developing tools and guidelines for TMDLs and watershed-based plans, environmental statistics, P Index development, erosion and stormwater management, and low impact design technologies. Dr. Storm's research encompasses computer modeling, and experimental studies at the laboratory, greenhouse, plot, field, and watershed scales. He has also served as an expert witness for plaintiffs in two Federal cases involving surface water quality impairment from poultry activities in northeastern Oklahoma and northwest Arkansas. Other selective activities include partner in FlowthroughUS, a consulting firm marketing and designing a patented submerged air diffuser system to address water quality impairment of ponds, reservoirs and lakes, and an executive board member of the nonprofit organization Lake McMurry Friends.

### **Scott A. Wells, Ph.D., Portland State University**

Dr. Wells is the current Chair of the Department of Civil & Environmental Engineering at Portland State University. He has a Ph.D. from Cornell University in Civil and Environmental Engineering, and graduate and undergraduate degrees from MIT and Tennessee Technological University. His current research focus is environmental fluid mechanics: modeling of surface water quality and hydrodynamics and solid-liquid separation processes. He has written over 100

technical publications. He has been involved in over 100 water body studies throughout the United States in Oregon, Hawaii, Virginia, Tennessee, Kentucky, Idaho, California, Oklahoma, Texas, Washington, Wisconsin, North Carolina, Oklahoma, Montana, and Florida. He has also been involved in projects in Canada, China, Guyana, Peru, Ukraine and Israel/Jordan. He has received 2 Fulbright scholar awards, one to the Ukraine working on the Dnieper River and the other to Israel where he is continuing to work on a computer simulation model of the Dead Sea. He is a co-developer of the water quality and hydrodynamic model, CE-QUAL-W2, used throughout the world for hydrodynamic and water quality modeling studies. He has been actively involved in studies for local, state and federal government as they work on improving water quality in surface water systems and in understanding the environmental impacts of reservoirs.

### **Timothy Wool, U.S. Environmental Protection Agency**

Tim Wool is a National TMDL expert with the United States Environmental Protection Agency (USEPA), Region 4 office located in Atlanta, GA. Tim has over 25 years of experience in the development and application of water quality models that are used for TMDL development and waste load allocations. Tim established the Watershed and Water Quality Modeling Technical Support Center located at USEPA's Office of Research and Development Laboratory in Athens, GA. At the Center he was responsible for the development/establishment of the TMDL modeling toolbox which brings together a collection models and tools to streamline TMDL development. Tim is one of the primary developers of US EPA's Water Quality Analysis Simulation Program (WASP) which is routinely used in the United States and throughout the world. Tim has supported USEPA with developing a technical approach for regarding numeric nutrient criteria for the State of Florida and he has significant experience in developing and reviewing TMDLs for bacteria, nutrients, metals, dissolved oxygen, and mercury.