

**Invitation for Public Comment on the List of Candidates for
the Environmental Protection Agency's Science Advisory Board
Environmental Engineering Committee**

September 18, 2017

The U.S. Environmental Protection Agency (EPA) Science Advisory Board (SAB) Staff Office announced in a Federal Register Notice on June 27, 2017 (82 FR 29077 - 29078) that it was inviting nominations of experts to be considered for the Administrator's appointment to the Science Advisory Board (SAB) Environmental Engineering Committee (EEC). The SAB provides independent advice and peer review to EPA's Administrator on the scientific and technical aspects of environmental issues. The SAB Staff Office sought nominations of experts to serve on the SAB EEC with demonstrated expertise in one or more of the following disciplines: environmental and water quality engineering; and remediation and technology. The SAB Staff Office identified 22 candidates based on their expertise, willingness and ability to serve. We hereby invite public comments on the attached List of Candidates for appointment to the SAB EEC for consideration by the SAB Staff Office. Comments should be submitted to Mr. Edward Hanlon, Designated Federal Officer, no later than October 9, 2017, at hanlon.edward@epa.gov. E-mail is the preferred mode of receipt. Please be advised that public comments are subject to release under the Freedom of Information Act.

2017 Candidates for the EPA Science Advisory Board Environmental Engineering Committee

Andrews, Rodney

University of Kentucky

Dr. Rodney Andrews is Director of the Center for Applied Energy Research and Associate Vice President for Research at the University of Kentucky. He is a Professor of Chemical Engineering in the Department of Chemical and Materials Engineering, with a joint appointment as Professor of Mechanical Engineering, at the University of Kentucky. Dr. Andrews has been Director of UK CAER since 2007. Research interests include production of pitches and heavy aromatics from coal and other fossil resources, biomass utilization for fuels and chemicals, thermochemical conversion processes for coal and biomass, carbon fiber and composites, activated carbon materials, pitch chemistry and characterization, synthesis and application of carbon nanomaterials. Dr. Andrews is currently funded by the National Science Foundation, the Commonwealth of Kentucky, Sasol, and the US Department of Energy. Dr. Andrews has directed major multi-university and industry-academic collaborative projects. He has published more than 70 peer reviewed journal articles and three book chapters with his work cited more than 10,000 times. He has been granted six patents. In addition to his UK achievements, he is on the Executive Council of the American Carbon Society, and served as the society's 2011 Graffin Lecturer. He was appointed to the National Coal Council in 2014. Dr. Andrews is Program Director of Kentucky NSF EPSCoR, a statewide initiative to increase research infrastructure within the Commonwealth. He also directs the Kentucky Consortium for Energy and the Environment focused on issues relating to the Paducah Gaseous Diffusion Plant. He is on the Editorial Board for the journal Carbon. Dr. Andrews received his Bachelor of Science degree in chemical engineering from Michigan State University and his Ph.D. in chemical engineering from the University of Kentucky. He is a licensed Professional Engineer in Kentucky.

Bandichhor, Rakeshwar

Dr. Reddy's Laboratories

Dr. Rakeshwar Bandichhor is Director and Senior Principal Scientist for Active Pharmaceutical Ingredient (API) Research and Development at Dr. Reddy's Laboratories (DRL) in Hyderabad, India. He holds a B.S. in Chemistry and Zoology, an M.S. in Chemistry with a specialization in Organic and Pharmaceutical Chemistry, and a Ph.D. in Chemistry from the University of Lucknow, India. Dr. Bandichhor's research work is directly related to benefits to the society, and his research funding over the past two years has been supported by DRL. In the area of health sector, his efforts resulted in alternate synthesis of phase III and complex molecules. For example, the molecule patented as Eribulin is being used in treating/managing various diseases ranging from metabolic disorders to HIV. Dr. Bandichhor devised several synthetic strategies such as diastereoselective, enantioselective, DKR based, metal catalysed synthesis of medicines which are of great intellectual property and business value in the pharmaceutical industry. A number of his ideas have already been materialized in concluding the trial, validation and commercial campaigns towards catering the business needs of different geographies. In coming next 4 to 5 years, most of Dr. Bandichhor's noteworthy ideas/synthesis will get realized in commercial sense. This monumental service to society turned basic knowledge into an applied endeavor for commercial application. Despite of his industrial commitments on job, he produced >10 PhDs and trained several bachelor and master students. He is a Fellow of the Royal Society of Canada, a Chartered Chemist of the Royal Society of Chemistry (RSC), featured as one of 175 scientific leaders in the area of chemical sciences adjudged by the RSC. His chemistry knowledge has prolifically used in formulation sciences for successful ANDA filings too. He is able to attract collaborators from MIT and University of Pennsylvania for training the DRL scientists to help enable them to handle complex molecules. Dr. Bandichhor's group, particularly he himself, championed industry-academia collaboration by delivering scientific talks across the world and co-authoring research and review articles in the journals of repute. He has co-edited a book along with a faculty at University of Delhi, which is going to be published by RSC. He has represented DRL in the American Chemical Society (ACS)-GCI roundtable for 8 years and institutionalized Green practices at DRL. He has also co-contributed a concept article to TATA in the area of sustainability. These are the perfect examples of model in industry-academia collaboration. His inputs towards selecting right synthetic route in industry are also published in Nature Medicine 2013, 19, 1200-1203. Due to excellent contribution, he received several awards within the organization and outside e.g. Chairman Excellence Award in the Category of individual functional excellence, IGCW-2013 award in the category of Green Chemistry). He recently worked with ACS to organize first ACS-Industry Symposium at DRL and considering his commitment towards chemical sciences, ACS has appointed him as Vice-Chair of ACS-India Chapter (South). He just received CRSI-Bronze Medal for year 2018. He is also certified Six Sigma Black and Master Black Belt.

Barnett, Mark

Auburn University

Dr. Mark Barnett is a Professor of Environmental Engineering and Associate Chair in the Department of Civil Engineering at Auburn University, where he has been on the faculty for eighteen years. He also serves as an administrative judge for the U. S. Nuclear Regulatory Commission. Dr. Barnett has a B.S. in Chemical Engineering and an M.S. in Environmental Engineering from the University of Tennessee and a Ph.D. in Environmental Sciences and Engineering from the University of North Carolina. Dr. Barnett has over twenty-five years of national and international environmental engineering and science experience in industry, government, and academia. His technical research focuses on the chemical processes controlling water quality and contaminant behavior in natural and engineered systems. He has been a principal or co-principal investigator on fifteen grants totaling over \$7.5 million, and he has published over fifty peer-reviewed journal articles, several book chapters, and a book that collectively have received over two thousand citations (h-index=24). He is a licensed professional engineer and a board certified member of the American Academy of Environmental Engineers and Scientists with technical experience in potable water and industrial wastewater treatment; site assessment and remediation; soil and groundwater contamination; human-health risk assessments; contaminant bioavailability; environmental forensics; environmental and aquatic chemistry; low-level radioactive and hazardous waste management; and nuclear environmental engineering. Dr. Barnett has taught fundamental and applied courses in environmental and aquatic chemistry; drinking water supply, treatment, and distribution; environmental engineering principles and design; and sustainable design and development. His work has been previously supported by industry, the National Science Foundation, the Department of Energy, the Department of Defense, the Environmental Protection Agency, and the Water Research Foundation, with research over the past two years funded by Auburn University. His

current interests are in environmental policy; sustainable development; and water, sanitation, and health in underserved communities.

Beardsley, Daryl L.

Independent Consultant

Ms. Daryl Beardsley has a depth of understanding and involvement with details of the industrial sector that she can translate into implications for high-level environmental initiatives. As an independent consultant in the field of environmental engineering and policy, her area of specialization is in industrial-environmental and related sustainability issues, which she has addressed from a diversity of perspectives. For a variety of local, state, federal and international government authorities and NGOs (e.g., US EPA, US AID, United Nations Industrial Development Organization, World Bank, Ethiopian Ministry of Mines and Energy, Delaware Department of Natural Resources and Environmental Control), Ms. Beardsley provides, the following: guidance for programs and regulations that foster sustainable industrial activity; technical input for environmental strategy formulation; training for facility operations' auditing and technical assistance; and industrial data analysis systems for decision support. Projects undertaken by Ms. Beardsley for commercial, service, and industrial establishments include: modifying processes for improved materials and energy use efficiency, leading to cost savings, business robustness, sustainability, environmental protection, etc.; incorporating life cycle considerations into product design, manufacture, and selection; assessing facilities' operations and maintenance for sustainability in heating/cooling, water use, wastewater control, waste minimization, cleaning, renovations, etc.; designing and developing systems for risk and environmental management, including computerized databases for complex data tracking and analysis; and planning and implementing clean technology and pollution prevention efforts. Ms. Beardsley investigates such issues for small, single-facility establishments to large, multinational firms engaged in: manufacturing of automotive and aerospace parts, electronics, medical instruments, steel, pulp and paper, plywood, adhesives, pharmaceuticals, fabric, printed goods, food and beverage, petroleum products, electroplated/coated/machined products; other; R&D and testing laboratories; nanotechnology; internet equipment and services; transportation sector; power generation; wastewater treatment; etc. Ms. Beardsley has worked in more than half the states and internationally in more than 10 developed and developing countries. She is a liaison between regulators and the regulated community and volunteers on municipal boards and committees. Ms. Beardsley received a B.S. from the University of Rhode Island's Department of (Natural) Resource Development in environmental sciences and policy/economics and an M.S. from the Massachusetts Institute of Technology's Department of Civil Engineering under the multidisciplinary, dual-track Technology and Policy Program. Ms. Beardsley current and recent research is not supported by extramural funding.

Bernthal, Frederick

Universities Research Association

Dr. Fred Bernthal was President of Universities Research Association for 17 years and now serves as Senior Advisor to the Board of Trustees. The URA consortium has for 50 years been contractor to the U.S. Department of Energy (DOE) for management of Fermi National Accelerator Laboratory. URA is also part of the three-member Honeywell-led team recently awarded the DOE contract for management of Sandia National Laboratories. From 1990-94, Dr. Bernthal was Deputy Director of the National Science Foundation, where he was for one year acting Director and a member of the National Science Board. From 1988-90, he was Assistant Secretary of State for Oceans, Environment and Science, where he chaired the 50-nation Response Strategies Working Group of the U.N. Intergovernmental Panel on Climate Change and led negotiations for the 1990 US-USSR Agreement for Cooperation in Basic Sciences. He also spearheaded initiatives which banned the export of U.S. hazardous wastes and prohibited the import of elephant ivory. From 1983-88 he was a Member of the U.S. Nuclear Regulatory Commission, where he gained approval for the Commission's first Advanced Reactor Policy Statement. In the wake of the Chernobyl disaster, he led a delegation to the Soviet Union where in 1987 he negotiated and signed the first US-USSR nuclear safety protocol. From 1970-80, he was a professor of chemistry and physics at Michigan State University and was granted tenure. In 1978 he joined the staff of U.S. Senator Howard Baker as a Congressional Science Fellow, and he served as Chief Legislative Assistant to Majority Leader Baker from 1980-83. Dr. Bernthal holds a B.S. in chemistry from Valparaiso University and a Ph.D. in nuclear chemistry from the University of California at Berkeley. He did postdoctoral study at Yale University and was a NATO Senior Scientist Fellow at the Niels Bohr Institute in Copenhagen in 1977. He was a director of PPL Corporation for 18 years, and subsequently of the PPL spin-off Talen Energy Corporation, until Talen was sold in late 2016. From 2001-2008 he was a director of the Society for Science and the Public. The author of more than 40 peer-reviewed

scientific publications, he is a Fellow of the American Physical Society and of the American Association for the Advancement of Science.

Bott, Charles B.

Hampton Roads Sanitation District

Dr. Charles B. Bott is the Director of Water Technology and Research at the Hampton Roads Sanitation District (HRSD) in southeast Virginia, where he currently is managing technology innovation for HRSD's thirteen wastewater treatment plants (249 MGD combined capacity) and interceptor system. He is also an Adjunct Professor in the Departments of Civil and Environmental Engineering at Virginia Tech and Old Dominion University. He was formerly an Associate Professor in the Department of Civil and Environmental Engineering at the Virginia Military Institute (VMI) and a consulting engineer with Parsons Engineering Science. Dr. Bott has a B.S. in Civil Engineering from the Virginia Military Institute, an M.S. in Environmental Engineering from the Johns Hopkins University, and a Ph.D. in Civil and Environmental Engineering from Virginia Tech. He is a fellow of the Water Environment Federation and a member of the Science and Technology Advisory Committee to the Chesapeake Bay Program Executive Council. Dr. Bott is a Professional Engineer in Virginia, a Board Certified Environmental Engineer, and a licensed Wastewater Treatment Plant Operator – Virginia Class I. He is a two-time winner of the Water Environment Federation (WEF) Harrison Prescott Eddy Medal for outstanding contribution to wastewater principles/processes research, and he is the current co-chair of the WEF and the Water Environment & Reuse Foundation (WE&RF) Leaders Innovation Forum for Technology (LIFT) program. Dr. Bott's technical interests include municipal and industrial wastewater treatment, as well as renewable energy generation in wastewater treatment and landfill applications. He has specific expertise in the areas of chemical and biological phosphorus removal, denitrification with methanol and alternative carbon sources, nitrification kinetics and evaluation of nitrification inhibition, nutrient recovery, deammonification/anammox, and biogas conditioning. Dr. Bott also specializes in the treatment of unique chemical constituents in industrial wastewater applications by both physical-chemical and biological processes. An important area of focus is the further development and implementation of sidestream deammonification processes and the continued investigations into the potential for mainstream shortcut nitrogen removal. Treatment technologies for potable reuse are also an emerging topic of interest for Dr. Bott. Dr. Bott has had no research funding from extramural sources.

Cwiertny, David

University of Iowa

Dr. David M. Cwiertny is an Associate Professor of Civil and Environmental Engineering at the University of Iowa (UI). He holds a B.S. in Environmental Engineering Science with a minor in Chemistry from U.C. Berkeley and a Ph.D. in Environmental Engineering from Johns Hopkins University. His research program broadly focuses on water quality and water treatment, with specific expertise in the (i) environmental fate and risk assessment of emerging and unregulated (e.g., agrochemicals and pharmaceuticals) pollutant classes, and (ii) development of (nano)material-based technologies for environmental cleanup and resource sustainability. He has authored over 50 peer-reviewed publications in leading journals (e.g., Science and Nature Communications). A member of the UI campus-wide Water Sustainability Initiative, he is a faculty affiliate of the UI Nanoscience and Nanotechnology Institute and the UI Environmental Health Sciences Research Center. He also currently serves as the Editor-in-Chief of Environmental Science: Water Research & Technology. During 2016-2017, Dr. Cwiertny was an American Association for the Advancement of Science (AAAS) Congressional Fellow, working as Democratic staff for the House of Representatives Committee on Energy and Commerce and its subcommittees on Energy and Environment. In this capacity, he worked on issues including legislation updating the Safe Drinking Water Act, reauthorization of the Brownfields program, energy infrastructure and delivery systems, management of nuclear waste, and oversight of EPA implementation of updates to the Toxic Substances Control Act (TSCA) under the Frank R. Lautenberg Chemical Safety for the 21st Century Act. His expertise at the interface of science and policy stems from his role as Director of the Environmental Policy Research Program at the UI Public Policy Center. As Director, he has organized symposia on key environmental issues in Iowa that bring together stakeholders from diverse sectors including state and federal government, the private sector, academia and the general public. Through this role, he has also served on the advisory board for the Iowa Energy Center, in addition to serving on the executive committee for the UI Center for Health Effects of Environmental Contamination. Dr. Cwiertny's research funding over the past two years has been supported by grants from government agencies and universities, with core research support primarily by the National Science

Foundation, U.S. Department of Agriculture, U.S. Department of Defense, U.S. Environmental Protection Agency, the National Institutes of Health, and the University of Iowa.

Easton, Zachary

Virginia Polytechnic Institute and State University (Virginia Tech)

Dr. Zachary Easton is an Associate Professor in Biological Systems Engineering at Virginia Tech. He holds a B.S. in Soil Science from the University of Massachusetts, and an M.S. and Ph.D. in Hydrology from Cornell University. The primary focus of Dr Easton's work is to improve our understanding of hydrologic and terrestrial processes that control biogeochemical cycles and fluxes with the ultimate goal of developing policies and management practices that protect water, soil, and other natural resources. Water is typically Dr Easton's central focus because it is arguably the most critical and at-risk resource to humans and ecosystems. His research addresses both native and managed systems, considers processes at plot- to large river basin-scales, and is relatively evenly divided among field study/monitoring, modeling, and application of results to real world problems. Three broad and somewhat overlapping research themes around which Dr Easton focuses are: 1. Impact of land use and climate change on water quality and quantity, 2. Impact of watershed management practices on water quality, and 3. Bridging basic research and modeling to management and application. Ongoing projects funded by the National Science Foundation (NSF), the U.S. Department of Agriculture (USDA), and the U.S. Environmental Protection Agency (EPA) focus on determining relationships among biogeochemical hotspots, landscape hydrology, and the impact that climate change and variability have on these processes, and how climate change impacts the phenology of agricultural management and the ensuing effect on water quality, also in the Chesapeake Bay watershed. He is the Virginia representative to the USDA Southeast Region Climate Hub, an elected member of the EPA Chesapeake Bay Scientific and Technical Advisory Committee, past chair of SERA-43 (the "Water" SERA), and an advisor to the Natural Resources Conservation Service (NRCS) on revisions to the 590 Nutrient Management Standard P-Index. His research over the past two years has been supported by the NSF, USDA's NRCS, the Pratt Endowment, the Delmarva Land Grant Institution Collaborative Research Seed Funding Program, and EPA.

Goltz, Mark N.

Independent Consultant

Dr. Mark N. Goltz is Distinguished Professor Emeritus of Environmental Engineering and Management at the Air Force Institute of Technology. He holds a B.S. in Electrical Engineering from Cornell University, an M.S. in Sanitary Engineering from University of California, Berkeley, and a Ph.D. in Environmental Engineering and Science, Stanford University. Since 1982 Dr. Goltz has been studying the fate, transport, and remediation of contaminants in groundwater. His research interests include groundwater contamination remediation technologies, fate and transport of organic contaminants in the subsurface, stimulating commercialization of environmental remediation technologies, mathematical modeling of contaminant transport by groundwater, in-situ bioremediation of chlorinated organic compounds in the subsurface, scaling-up from the laboratory to the field, physical and chemical water and wastewater treatment technologies, and environmental modeling. His work has included conducting and modeling field demonstrations of innovative contaminated groundwater treatment technologies, as well as investigation of methods to effectively transfer these technologies to commercial use. He has conducted research on the application of nanomaterials to remediate contaminated groundwater. Dr. Goltz developed a graduate program in environmental engineering for U.S Air Force officers, and taught in the program for over 20 years. He has consulted on numerous Air Force water pollution problems, and has a unique perspective, due to his background in both academia and the military. Dr. Goltz does not currently have any research grants although in the recent past he had grant support from the U.S. Air Force and the U.S. Environmental Protection Agency.

Jackson, C. Rhett

University of Georgia

Dr. C. Rhett Jackson is a Professor of Hydrology in the Warnell School of Forestry and Natural Resources at the University of Georgia. Dr. Jackson's research focuses on the effects of human land use activities, specifically forestry, agriculture, and urbanization, on water quality and aquatic habitat. He conducts applied research into the effectiveness of best management practices (BMPs) in reducing nonpoint pollution. His interests in the basic science of hillslope hydrology inform his research on the fate and transport of nonpoint pollutants. His recent findings on the relative role of shallow lateral subsurface flow in hillslopes have

implications for understanding and modeling the transport of dissolved pollutants like nitrate nitrogen. A particular current interest of his is the relationship between riparian vegetation, channel structure, and stream temperature. Given that BMPs are never fully effective, he has lately pondered the question, "How much water quality and habitat change is too much?" His work is trans-disciplinary, and he frequently collaborates with ecologists, animal biologists, and biogeochemists. Dr. Jackson's work has influenced the development of BMPs for forestry and urban development. He currently receives research support from the U.S. Department of Energy, the U.S. Department of Agriculture's (USDA) Forest Service, USDA's Agriculture and Food Research Initiative, the National Science Foundation, and the U.S. Environmental Protection Agency. Other agencies that have supported his work include the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, the states of Washington and Georgia, and non-governmental organizations. Dr. Jackson earned B.S.E. and M.S.E. degrees in Civil and Environmental Engineering from Duke University and a Ph.D. in Civil and Environmental Engineering from the University of Washington.

Lohmann, Rainer

University of Rhode Island

Dr. Rainer Lohmann is Professor of Oceanography at the University of Rhode Island (URI)'s Graduate School of Oceanography. He obtained a Ph.D. in Environmental Science from Lancaster University (UK), and a BSc in Chemical Engineering from EHICS (Strasbourg, France). His educational background combines work in chemical / environmental engineering (postdoc at the Massachusetts Institute of Technology, MIT) with marine, atmospheric and environmental chemistry. With funding from U.S. Environmental Protection Agency, the National Science Foundation (NSF), the National Institute of Environmental Health Sciences (NIEHS), the Strategic Environmental Research and Development Program (SERDP), state and private foundations, his group conducts research into the sources, transport, and bioaccumulation of anthropogenic pollutants. Dr Lohmann has performed work at sites contaminated with legacy hydrophobic organic contaminants using novel passive samplers to assess transport, bioavailability and food-web magnification of these chemicals. He is Director of the new NIEHS-funded Superfund Research Center at URI focused on the sources, transport, exposure and effects of per- and polyfluorinated chemicals. Dr Lohmann has published over 100 articles in the leading journals in the field (notably the American Chemical Society's Environmental Science and Technology), and has given almost 100 invited presentations. He serves as Editor for the Society of Environmental Toxicology and Chemistry (SETAC)'s journal Environmental Toxicology and Chemistry, and is member of several editorial advisory boards, including Environmental Science and Technology, Environmental Science and Technology Letters, and Environmental Pollution. He received the Roy F. Weston Environmental Chemistry Award by SETAC. Dr Lohmann was awarded the INNOLEC Visiting Lectureship by Masaryk University, Brno (Czech Republic) and fellowships by the Alexander-von-Humboldt foundation, the Research Center for Ocean Margins at the University of Bremen and the German Academic Exchange Service. Relevant skills and experience for three subcommittees include his work at contaminated sites with legacy hydrophobic organic contaminants, the use of passive samplers to assess transport, bioavailability and food-web magnification of chemicals. His more recent work on the transport, fate and source assessment on per- and polyfluorinated chemicals, plus his leadership of our successful NIEHS SRP Center on Per- and Polyfluoroalkyl Substances (PFAS) puts him in an excellent position to serve on EPA's SAB Environmental Engineering Committee.

Orlov, Alexander

State University of New York, Stony Brook

Dr. Alexander Orlov is an Associate Professor of Materials Science and Engineering at State University of New York, Stony Brook, USA. He is also a faculty member of the Consortium for Interdisciplinary Environmental Research, Chemistry Department and the Institute for Advanced Computational Science. In addition, Dr. Orlov is the European Research Council (EU) and National Science Foundation (US) funded Visiting Professor of Chemistry at the University of Cambridge. Furthermore, he is President and Founder of the Sustainable Nanotechnology Corporation. Dr. Orlov has already a substantial experience on providing advice to policy makers on environmental, consumer protection and agricultural matters. From 2007 till 2014 he was appointed by two UK Secretary of States for Environment, Food and Rural Affairs to advise the Government on such issues as hazardous substances, sustainability, environmental health/engineering and environmental impact of nanotechnology. More specifically he provided guidance on risk assessment of more than dozen chemicals and nanomaterials, where he evaluated submissions to the UK government and the European Chemicals Agency (ECHA). In particular, he was co-author of reports on DecaBDE toxicity, cumulative toxic effects of phthalates, behavior of pharmaceuticals in the environment and risk assessment of nanosilver/nanoseria to name a few. Several of his current NSF funded projects are focused on

development of new technologies for air purification using waste materials, water and air remediation utilizing novel catalytic materials and risk analysis for nanomaterials release in the environment. Dr. Orlov has 5 degrees from various European and the US institutions, including: Doctoral and Master's degrees in Physical and Environmental Chemistry from the University of Cambridge (UK) and Master's degree in Environmental Engineering from the University of Michigan (US). He also holds Diploma in Economics from the London School of Economics. Among his current activities Dr. Orlov is contributing to work of the United Nations Environmental Program (Lead Author for the GEO report and reviewer of various UN reports) and the US-EU working group on Risk Assessment of Nanomaterials under auspices of the US White House and European Commission cooperative program on nanotechnology research. He serves as expert for over 20 Governmental agencies throughout the world, which includes grant reviewing for the NSF (13 Programs), DOE, DOD and the EU Commission. He also chairs the American Institute of Chemical Engineering Committee on Research and New Technologies, and participates in the Executive Committee of the American Chemical Society Environmental Division. Dr. Orlov was awarded the US National Science Foundation CAREER Award and the UK National Endowment for Science Technology and Arts CRUCIBLE award. He was also selected to the Fellowship of the UK Royal Society of Chemistry, the US National Academy of Engineering (NAE) Frontiers of Engineering (US), the EU-US (NAE) Frontiers of Engineering and was made Kavli Fellow in 2014 by the Kavli Foundation and the US National Academy of Sciences. In 2016 Dr. Orlov has been named Sigma Xi Distinguished Lecturer and was recognized by the State University of New York with Chancellor's Award of Excellence in Scholarship and Creative Activities. In addition to research awards, Dr. Orlov has received several teaching awards, including the 2015 NAE Frontiers of Engineering Education selection and the 2017 American Chemical Society Award for Incorporating Sustainability into Chemistry Education.

Rabideau, Alan J.

State University of New York, Buffalo

Dr. Alan J. Rabideau, Ph.D., P.E., is Professor and Director of Graduate Studies in the Department Civil, Structural, and Environmental Engineering at the University at Buffalo (UB). He holds a B. S. in Civil Engineering from the University of Notre Dame, an M. E. in Civil Engineering and an M.A. in Philosophy from the University at Buffalo, and a Ph.D. in Environmental Sciences and Engineering from the University of North Carolina. His research interests include groundwater modeling, subsurface remediation, and decision making for environmental restoration, with his most recent work addressing stormwater management and drinking water quality, supported by research contracts with City of Buffalo. Previously, Dr. Rabideau directed the UB Ecosystem Restoration through Interdisciplinary Exchange (ERIE) training programs, which included research experiences for undergraduates and interdisciplinary doctoral training. Dr. Rabideau has served on several scientific advisory committees, at both the national and regional levels. Most recently, he co-authored 2012 National Research Council study of future alternatives for managing groundwater restoration at complex waste sites. From 2006 – 2013, he supported the Environmental Impact Statement (EIS) for the DOE Hanford nuclear facility, first as a member of an independent Technical Advisory Group (groundwater modeling) and subsequently as a scientific advisor to the lead EIS consultant SAIC. He has also served as technical advisor for several citizen groups on matters related to subsurface remediation and currently chairs the Technical/Science committee as member of the Board of Directors for the nonprofit Buffalo-Niagara Riverkeeper. Dr. Rabideau's research over the past two years has been supported by grants from the National Science Foundation, the U.S. Department of Defense, the U.S. Department of Energy, the Buffalo Sewer Authority, the Buffalo Water Authority, and Motorola Solutions, Inc.

Sager, Allana

Dexter ATC Field Services, Inc.

Mrs. Allana Sager is an Environmental Engineer for Dexter ATC Field Services, providing onsite support for the Water and Wastewater Treatment program at the Total Petrochemicals and Refining Facility in Port Arthur, TX. She received a Bachelor of Science in Biology and Biochemistry from Texas A&M University. She continued her studies and received a Master of Science in Civil Engineering with a specialty focus in Environmental Engineering, and a Business Certificate from the Mays School of Business at Texas A&M University. Allana was awarded a graduate research assistantship by the Texas Engineering Experiment Station at Texas A&M University where she conducted research in the Global Petroleum Research Institute regarding the stability of hydraulic fracturing waters and methods to monitor microbial activity in these waters. Her work was published and presented to the Society of Petroleum Engineer's Industry Board at the Unconventional Resource Technology Conference where she was commended for bringing a revolutionary topic forward for industry wide discussion. Post publication, her work was also featured in the Journal of

Petroleum Technology as a feature story detailing the best available technology and practices identified by her team's research. Her technical background also includes biotechnology, biopolymers, wastewater treatment, stormwater management, water reuse, membrane technology, industrial water storage and containment. In addition, she has also developed an expertise in the implementation and maintenance of federal and state water and air quality standards covering the discharge of treated process water, facility stormwater, particulate matter, volatile organics, benzene waste operations, and national emissions standards for hazardous air pollutants. She is recognized as an effective communicator of science and engineering to both technical and non-technical audiences. Since Allana has joined industry, she has received the Engineer-In-Training (EIT) certification from the Texas Board of Professional Engineers, and is currently working towards her Professional Engineering (PE) License. She actively works to give back to her community by being an active member of Engineers without Borders, the American Society of Civil Engineers, the American Chemical Society, and the American Water Works Association. She is not currently a recipient of any research grants or federal funding, but she did receive funding from a private sector environmental consulting firm (GSI Environmental) during her research.

Sattler, Melanie

University of Texas at Arlington

Dr. Melanie Sattler serves as the Syed Qasim Endowed Professor in Civil Engineering at the University of Texas at Arlington. She holds a B.S. in Civil Engineering and B.A. in Physics, both from Texas A&M University; and M.S. and Ph.D. degrees in Environmental Engineering from the University of Texas at Austin. Her research interests include renewable energy from waste, reduction of greenhouse gas emissions from landfills, life-cycle assessment, and air quality (non-landfill). In 14 years at UTA, she has served as Principal or Co-Investigator for over 20 projects, totaling over \$3 million. Her research has been sponsored by the U.S. Environmental Protection Agency Global Methane Initiative, Texas Commission on Environmental Quality, and the National Science Foundation, among others, with recent research funding provided by the City of Arlington, TX and the U.S. Environmental Protection Agency. She and her students have published over 100 peer-reviewed journal and conference papers. Dr. Sattler is a registered professional engineer in the State of Texas. Dr. Sattler currently serves as Vice Chair of the Waste Resource Recovery, Processing, and Bioenergy Technical Coordinating Committee of the Air & Waste Management Association (AWMA). In this capacity, she has chaired or co-chaired 7 AWMA conference sessions during the past 3 years. She also serves a member of the Internal Advisory Board for UTA's Institute for Sustainability and Global Impact. Since 2005, she has served as a member of the Environmental Research Program Research Steering Committee for Luminant Energy (formerly Texas Utilities). From 2003-2008, she served as a member of the Texas Environmental Research Consortium Scientific Advisory Committee, and as its chair from 2006-2008.

Scherer, Michelle M.

University of Iowa

Dr. Michelle M. Scherer is the Donald E. Bently Professor of Civil and Environmental Engineering at the University of Iowa. She holds a B.S. in Systems Engineering from the University of Virginia (1989), an M.S. in Civil and Environmental Engineering from the University of Connecticut (1994), and a Ph.D. (1998) in Environmental Science and Engineering from the OGI School of Science and Engineering. Dr. Scherer is currently Chair of the Department of Civil & Environmental Engineering (www.engineering.uiowa.edu/cee/) and is an expert in environmental geochemistry and reactions of environmental pollutants at the mineral – water interface. Her research and teaching interests center around the redox chemistry of minerals in soils and water, biogeochemical cycles of nutrients and metals, hazardous waste treatment, and nanogeochemistry. Dr. Scherer is a past Associate Editor for the journal Environmental Science & Technology and was awarded the 2010 Malcolm Pirnie Frontier in Research Award by the Association of Environmental Engineering and Science Professors (AEESP) and the 2016 May Brodbeck Distinguished Achievement Award for Faculty at U. Iowa. She has published numerous articles in leading environmental engineering and science journals, as well as several book chapters. Dr. Scherer's current research and education initiatives are supported by competitive grants from the National Science Foundation, Department of Energy, and the Strategic Environmental Research and Development Program (SERDP) to provide funding to understand processes controlling heavy metal and chlorinated solvent cleanup and redox behavior of semiconductor minerals. Current work is focused on perchlorethylene, trichloroethylene, heavy metals (such as arsenic) and iron, manganese, and clay minerals. She has also recently begun working on lead and copper contamination in drinking water.

Shukla, Sudheer Kumar

Caledonian College of Engineering

Dr. Sudheer Kumar Shukla is working as a Senior Lecturer in the Department of Built and Natural Environment at Caledonian College of Engineering, Muscat, Oman. He is also working as a Consultant with Yahya Engineering, Sultanate of Oman. He received his M. Tech. in Energy and Environment Management from Rajiv Gandhi Technical University, Bhopal, India, M. Sc. in Environmental Biology from Awadesh Pratap Singh University, Rewa, India, and Ph.D. in Environmental Engineering from Indian Institute of Technology (IIT) in Roorkee, India. His research focuses on wastewater treatment and recycling; membrane filtration technology; solid waste management; Environmental Impact Assessment. He also serves as the member of project review committee at the Research Council (TRC) of Oman. He is also working as a team member to develop "A new AWWA standard on UV Disinfection of Wastewater Effluent" with American Water Works Association. He received Brain Korea-21, Brain Korea-21 plus and international postdoctoral research fellowship at Sungkyunkwan University and Yonsei University, South Korea. Dr. Shukla's recent research funding is from the Ministry of Education and Science, South Korea, as a part of postdoctoral fellowships, and from the Ministry of Human Resources Development, India as a Ph.D. assistantship. As a voluntary activity, he is associated with the United Nations Organisation to map rural Tanzania to prevent girls from female genital mutilation.

Tehrani, Rouzbeh

Temple University

Dr. Rouzbeh Tehrani is an assistant professor and director of graduate programs of the Department of Civil and Environmental Engineering at Temple University. He has received a Bachelor of Science (B.S.) in Chemical Engineering (oil and gas) and a Master of Science (M.S.) in Civil Engineering from Dalhousie University (Halifax, Canada). He has earned his Doctor of Philosophy (Ph.D.) degree in Environmental Engineering at Temple University. Currently, he is the chair of the Education Committee for Association of Environmental Engineering and Science Professors (AEESP). Dr. Tehrani's research interests include remediation of contaminated soil and sediments, fate of chlorinated organic contaminants and their metabolites in natural systems, data science, and treatment technologies of produced water and hydrofracturing wastewater. He has served as a reviewer for the National Science Foundation (NSF) Chemical, Bioengineering, Environmental, and Transport Systems (CBET) program. Dr. Tehrani has not been a recipient of any external grants from the public or private sectors.

Theis, Thomas L.

University of Illinois at Chicago

Dr. Thomas L. Theis Director of the Institute for Environmental Science and Policy (IESP) at the University of Illinois at Chicago. He was most recently at Clarkson University, where he was the Bayard D. Clarkson Professor and Director of the Center for Environmental Management. He earned his B.S. (Civil Engineering), M.S. (Environmental Health Engineering), and Ph.D. (Environmental Engineering) from the University of Notre Dame. His areas of expertise include life cycle assessment, industrial ecology, the mathematical modeling and systems analysis of environmental processes, environmental policy; pollution prevention, and hazardous waste management. He has published in excess of 130 peer-reviewed articles, and is the co-author (with Jonathan Tomkin) of the text Sustainability: A Comprehensive Foundation. He was co-chair (with James Galloway and Otto Doering) of the Integrated Nitrogen Committee of the USEPA SAB. Their final report: Reactive Nitrogen in the United States: An Analysis of Inputs, Flows, Consequences, and Management Options was released in 2011. Dr. Theis is a past member of the USEPA Congressionally Chartered Science Advisory Board, and is past editor of the Journal of Environmental Engineering. From 1980-1985 he was the co-director of the Industrial Waste Elimination Research Center (a collaboration of Illinois Institute of Technology and University of Notre Dame), one of the first Centers of Excellence established by the USEPA. In 1989 he was an invited participant on the United Nations' Scientific Committee on Problems in the Environment (SCOPE) Workshop on Groundwater Contamination, in 1998 he was invited to by the World Bank to assist in the development of the first environmental engineering program in Argentina, in January, 2009 he delivered the keynote address at the NitroEurope Conference in Gothenburg, Sweden, and in October 2009 he was a member of the US delegation to the US-Japan Workshop on Life Cycle Assessment and Infrastructure Materials in Sapporo, Japan. He is the founding Principal Investigator of the Environmental Manufacturing Management Program. Dr Theis's research funding over the past two years has been supported by grants from government agencies, with core research support primarily being from the federal government (National Science Foundation and the U.S. Environmental Protection Agency).

Walsh, Daniel C.

City of New York Office of Environmental Remediation

Dr. Daniel C. Walsh is a geochemist with over 30 years of experience in government regulation of environmental quality including direction of Superfund, Hazardous Materials, Brownfields, Solid Waste, RCRA, Pesticides, Petroleum Spills and Emergency Response programs for the New York State Department of Environmental Conservation (NYSDEC) and the City of New York. Throughout his career, Dr. Walsh has directed government regulation of environmental investigation and cleanup of over 10,000 properties, arguably as many as any other person in U.S. history. He served as the Chief of Operations for NYSDEC's Civilian Environmental Response to the World Trade Center disaster in 2001-2002 where he oversaw all state environmental operations and communications, and supervised state personnel performing full-time oversight of World Trade Center debris transport, processing, disposal and permitting operations. In 2008, he was appointed by Mayor Michael Bloomberg as founding Director of the New York City (NYC) Office of Environmental Remediation where he established the nation's only municipally-regulated land cleanup program, the NYC Voluntary Cleanup Program (VCP), in 2011. Specializing in high quality cleanups, the NYC VCP has become one of the most prolific cleanup programs in the country, with cleanup leading to the development of over 30 million square feet of new building space resulting in over \$10 billion in private investment in mostly vacant urban land. He has established numerous programs that achieve broad goals for new uses of blighted land in underserved neighborhoods. For instance, over 50% of the properties enrolled for cleanup and redevelopment in the NYC VCP are located in low-income communities and will result in over 4,500 new units of affordable housing for over 12,000 residents. Dr. Walsh is one of the country's leading advocates for municipal control of environmental regulation and the use of these environmental functions for the achievement of municipal goals. He has established over 30 environmental programs including the nation's first exchange for clean soil (the NYC Clean Soil Bank) and other recyclable building materials, the NYC Green Property Certification program, and local programs for revitalization of vacant, contaminated urban land. He is currently piloting programs to correct environmental contamination of urban community gardens. Since 1999, Dr. Walsh has been an Adjunct Senior Research Scientist at Columbia University Lamont Doherty Earth Observatory & The Earth Institute. He holds B.S. in Geological Sciences from Binghamton University, an M.S. in Geophysics from University of Massachusetts, and a Ph.D. in Geochemistry from Rensselaer Polytechnic Institute. He formerly served on EPA's Homeland Security Advisory Committee for the Science Advisory Board and for the EPA's Board of Scientific Counselor's Homeland Security Advisory Committee. Dr. Walsh does not currently have any research grants. He is the author of numerous technical papers and articles and his work has received national recognition including the American Bar Association's 2013 Environmental, Energy and Resources Stewardship Award, the 2014 National Brownfield Person of the Year and his municipal environmental programs were a finalist for Harvard's Excellence in Governance Award in 2015.

Werth, Charles J.

University of Texas at Austin

Dr. Charles J. Werth is a Professor and the Bettie Margaret Smith Chair in Environmental Health Engineering in the Department of Civil, Architecture and Environmental Engineering at the University of Texas at Austin. Dr. Werth received a B.S. in Mechanical Engineering from Texas A&M University, an M.S. and Ph.D. in Environmental Engineering from Stanford University, and a Ph.D. minor in Chemistry from Stanford University. Dr. Werth's research and teaching focus on the fate and transport of pollutants in the environment, the development of innovative catalytic technologies for drinking water treatment, and the mitigation of environmental impacts associated with energy production and generation. In his research, he develops and/or uses noninvasive imaging, environmental microfluidics, nanotechnology, spectroscopic analysis, numerical modeling, and life cycle assessment. Dr. Werth has published 107 peer-reviewed journal articles. His research is currently supported by grants from both government agencies and private companies, with research support during the last three years from the U.S. Environmental Protection Agency (EPA), U.S. Department of Energy (DOE), the National Science Foundation (NSF), the National Aeronautics and Space Administration, the U.S. Geological Survey, Dow Chemical, and the Texas Hazardous Waste Research Center. Dr. Werth presently serves on the EPA's Science Advisory Board Environmental Engineering Committee and the EPA's Chartered Science Advisory Board. He formerly served on the boards of the Association of Environmental Engineering and Science Professors (AEESP) and the AEESP Foundation, as well as the User Executive Committee for DOE's Environmental Molecular Science Laboratory and the External Advisory Board for a DOE Energy Frontier Research Center. The quality of his work has been recognized by appointment as a Wiley Research Fellow at the DOE's Environmental Molecular Science

Laboratory, appointment as Editor-and-Chief of Journal of Contaminant Hydrology, an Editor's Choice Best Paper Award from Environmental Science and Technology (2nd in the category of Technology), most cited paper recognition from Journal of Contaminant Hydrology, a Humbolt Research Fellow Award, a National Science Foundation CAREER Award, and a BP Award for Innovation in Undergraduate Instruction.

Widdowson, Mark A.

Virginia Polytechnic Institute and State University (Virginia Tech)

Dr. Mark A. Widdowson holds the position of Professor of Civil and Environmental Engineering and serves as Assistant Department Head of Graduate Studies in the Charles E. Via, Jr. Department of Civil and Environmental Engineering at Virginia Tech in Blacksburg, Virginia. He is a Registered Professional Engineer in South Carolina with expertise in the area of water resources and environmental engineering. Dr. Widdowson received the B.S. degree in Civil Engineering from the University of Cincinnati, the M.S. degree in Water Resources Engineering from the University of Kansas, and the Ph.D. degree in Civil Engineering from Auburn University. Dr. Widdowson expertise is site remediation including modeling and decision-support tools for Remedial Investigation/Feasibility Study (RI/FS) and cost-effective solutions at CERCLA sites and long-term site management. He has experience working at over 20 Superfund and related sites involving a range of contaminants in soil and groundwater including heavy metals and complex organic chemicals. Dr. Widdowson is the author and principal investigator of the software tools SEAM3D and NAS (Sequential Electron Acceptor Model, 3D transport and Natural Attenuation Software) used by the Department of Defense, federal and state agencies, and the private sector for evaluating remedial strategies to meet site remediation objectives under a variety of scenarios in conjunction with economic and risk assessment models. Dr. Widdowson's research activities include the fate and transport of chemicals of concern and pathogens in the subsurface, including aquifer storage and recovery projects, phytoremediation, bioremediation, and groundwater resource management. He serves on the Science Advisory Board for the Sustainable Water Initiative for Tomorrow (SWIFT, Hampton Roads Sanitation District, Virginia) through the National Water Research Institute and Technical Advisory Committee on regional water supply planning of the Northern Shenandoah Valley Regional Commission, Virginia. He recently served as the state's technical expert to the Joint Legislative Audit and Review Commission of Virginia on the sustainability of groundwater supply in the Eastern Virginia Groundwater Management Area. Dr. Widdowson provided scientific peer review of the technical justification for a Low-Threat UST Closure Policy proposed by the California State Water Resources Control Board in 2012. He has performed Public Health Assessment Reviews for the U.S. Agency for Toxic Substances and Disease Registry. Dr. Widdowson serves on two working groups of the Interstate Technology and Regulatory Council; one on the emerging contaminant group of compounds known as PFAS and one on risk evaluation at petroleum contaminated sites. Dr. Widdowson's research funding over the past two years has been supported by the Virginia Department of Environmental Quality, the National Science Foundation, GSI Environmental, Inc., and Northern Shenandoah Valley Regional Commission.