

Russell H. Abell, C.G., P.G. is a professional geologist with more than 18 years of varied experience in vapor intrusion evaluations, contaminant hydrogeology, remediation, and due diligence. Mr. Abell has directed vapor intrusion, soil, and groundwater contamination investigation studies throughout the eastern United States and Western Europe with a focus on petroleum-related and chlorinated volatile organic compound (CVOC) contaminants. His vapor intrusion experience includes innovative sampling technologies such as high volume sampling (HVS) and screening techniques using ppb-RAE PIDs. Mr. Abell has also served as a consulting expert in support of a number of litigation matters focused on assessment, fate, transport, and remediation of oxygenate, petroleum-related, and CVOC contaminants in overburden and fractured bedrock settings in the U.S. Mr. Abell has also presented on vapor intrusion topics at conferences and to regulatory agencies during project efforts including the USEPA.

Kate Adams is an environmental epidemiologist with an extensive background in public health research, particularly in the health effects of air pollution. She currently serves as an Environmental Analyst in the Bureau of Environmental Health/Toxicology Unit of the Massachusetts Department of Public Health and as Project Coordinator for the CDC Building Resilience Against Climate Effects (BRACE) grant. She is experienced in all facets of environmental health research, from laboratory work to statistical analysis to modeling to writing and reporting of scientific results for policymakers. Prior to joining MDPH, she worked as a Senior Scientist for the Health Effects Institute and as a Research Associate at the Harvard School of Public Health. She holds an Sc.D. from the Department of Work Environment at the University of Massachusetts - Lowell.

Sheri Adkins, P.G. has been with the Kentucky Division of Waste Management since 2000, initially as a Geologist with the Underground Storage Tanks Branch, as a project manager in the Closure, Site Investigation and Corrective Action sections. She became a P.G. in 2006 and began working as a Registered Geologist within the Corrective Action Section. Ms. Adkins became the supervisor to the Kentucky Superfund Branch State Section in 2009, began supervising the Federal Superfund Section in 2012, and in June of 2015 accepted a position as the Environmental Scientist Consultant within the Branch. Ms. Adkins continues to assist on high priority sites, while helping to develop Branch policy and initiatives, and serves as scientific advisor within the Branch and for the Division.

Jaime Allen, QEP is a Project Manager/Geologist with Environmental Assessment & Remediations / Badger Injection Solutions, LLC. With over 15 years of experience, Jaime has been involved in many aspects of environmental consulting from field work to project management. Her responsibilities include management of site projects for a major oil company and various sectors of the New York State Department of Environmental Conservation including Hazardous Waste and Spills Divisions. She manages the Northeast Division of Badger Injection Solutions, LLC, including project design, field staff and marketing of in-situ remedial injection delivery services. Jaime holds a B.A. in Geology from the State University of New York at Geneseo and maintains licenses to conduct asbestos inspections in New York State.

Ed Alperin, QEP is the Chief Operating Officer of Solutions-IES, Inc. and its subsidiary EOS Remediation, LLC. He is responsible for the day-to-day operations of the company and provides the leadership and management to facilitate growth of the organization. He earned his B.S. in Chemical Engineering from Lowell Technological Institute (now UMass Lowell) and has more than 40 years of experience in operations management, strategic development, commercialization, and application of environmental technologies for the treatment of hazardous, toxic, and radioactive waste.

Janet Anderson is a Human Health Toxicologist and Environmental Risk Assessor with 15 years of experience providing toxicology expertise and consultation to federal agencies and industry. She specializes in the translation of human health toxicology data into state and federal regulatory policy decisions and performs critical reviews of federal and state risk assessment guidance and regulations. Dr. Anderson's areas of expertise include emerging contaminants, such as per- and polyfluoroalkyl substances (PFASs) within aqueous film-forming foams, 1,4-dioxane, and 1,2,3-trichloropropane. With in-depth knowledge of federal and state environmental guidance and policies pertaining to this class of compounds, she has developed strategies to mitigate their human health impacts and address associated environmental liability. In addition, she tracks the dynamic regulatory changes for emerging contaminants

in the U.S. and internationally, offering clients the technical basis for disparate guidelines worldwide. She has extensive experience developing risk management strategies for multi-stakeholder groups. Previously, Dr. Anderson led the U.S. Air Force (USAF) Emerging Issues/Contaminants program, where she developed programmatic recommendations on environmental regulations and cleanup standards. As a postdoctoral fellow for the EPA Office of Research and Development National Center for Environmental Assessment, she managed numerous Superfund chemical assessments and served as a team member for Integrated Risk Information System (IRIS) assessments. Dr. Anderson is a diplomate of the American Board of Toxicology and an active member of the Society of Toxicology.

Bonner Anthony is currently a Principal Toxicologist with Arcadis. She has been working on complex ecological risk assessments and associated issues for a variety of contaminants for over 15 years. She has a Bachelor's Degree in Biology from the University of North Carolina in Chapel Hill and a Master's Degree in Environmental Toxicology from Clemson University. She currently resides in Raleigh, North Carolina.

Harrison I. Atagana, Ph.D., Pr. Sci. Nat., FSB is a Professor at the Institute for Science and Technology Education, University of South Africa. He has B.Sc. (Hons) in Botany, and M.Sc. and Ph.D. Microbiology. He is a rated scientist of the South African National Research Foundation (NRF). He is a registered Professional Natural Scientist with the South African Council for Natural Scientific Profession and a Fellow of the Society of Biology. He is actively involved in postgraduate training and research in Environmental Biotechnology and has been lecturing in higher education institutions for 26 years. He is currently involved in a research project on the use of *Chromolaena odorata*, an invasive weed of tropical and subtropical Africa in phytoremediation of soil polluted with organics and metals. His other projects include compost bioremediation of oil sludge from petroleum refineries, microbial fuel cells in harnessing energy during waste degradation, and biological treatment of wastewaters from the mining and petrochemical industries. He has published most of his research in peer-reviewed international journals and conference proceedings. He has three Ph.D. and five M.Sc. students working on these research projects.

Michael Aucoin is a project chemist at AECOM with 35 years' experience and a focus on analytical and environmental chemistry. His background includes analytical chemistry, including gas chromatographic (GC) analysis of PCBs. Currently with AECOM, he provides lab coordination, data review, and data management services for a large multinational chemical company, including more than 15 years providing support to multi-media and multi-site poly and perfluoroalkyl substance (PFAS) investigations.

Raymond Ball, Ph.D., P.E., L.S.P. is President and Principal Engineer at EnChem Engineering, Inc. in Newton, Massachusetts. He has 35 years of consulting experience in the environmental industry that includes management and design services for hazardous waste site remediation projects, including U.S. EPA National Priority List sites, military bases, any many commercial and industrial release sites. In addition, he served as Principal Investigator and Co-Principal Investigator on four federally funded research and development projects related to improving in-situ treatment technology, and published five peer reviewed papers. He has commercialized two patented technologies marketed under the trade name of OxyZone®. His current focus is the design and implementation of OxyZone technologies for treatment of emerging contaminants. He obtained a Ph.D. in Environmental (Chemical) Engineering from Northeastern University, an M.S. in Environmental Engineering from the University of Michigan, and B.S. in Civil and Environmental Engineering from the University of Cincinnati.

Kirk Barrett is Assistant Professor in the Department of Civil and Environmental Engineering at Manhattan College in New York. Dr. Barrett has over 25 years' experience in the field of water resources, specializing in surface/wetland hydrology, hydraulics and water quality processes. He holds a Doctoral Degree in Environmental Engineering from Northwestern University and is a licensed Professional Engineer and a certified Professional Wetland Scientist.

Komal Basra is a Ph.D. student at Boston University (BU) School of Public Health in the Department of Environmental Health. She received both her B.A. in Biology and M.S. in Environmental Health with a focus in Community and Urban Health from BU. For the past seven years, Komal has worked in

community and environmental health as a Community Health Center Data Analyst and then as the Coordinator for the BU Superfund Research Program.

James Berndt, LPG is a Senior Manager and Licensed Professional Geologist in the Indianapolis office of August Mack Environmental, Inc. with more than 25 years of experience in the environmental industry. During his career, Mr. Berndt has managed hundreds of environmental projects for clients across the United States, in Europe and South America; and he teaches hydrogeology as a member of the adjunct faculty of the University of Indianapolis. His primary areas of expertise include site investigation, remediation, quantitative hydrogeology and site management.

David Berroa is currently a third-year undergraduate student in Industrial Engineering at Northeastern University. David is a Northeastern Torch 8 Scholar and a Huntington 100 member, and recently has worked with Ph.D. Akram Alshawabkeh and Ph.D. Ljiljana (Lily) Rajic from Northeastern University, in the ROUTES Scholar program. While working in Dr. Alshawabkeh's civil engineering lab, David worked alongside Lily and Sarah Elbakri on an innovative remediation technology called electrolysis to simulate the remediation of nitrates from Puerto Rico's groundwater. Currently, David is continuing his work with PROTECT (Puerto Rico Testsite for Contamination Threats) through the ROUTES program, in hopes that the success of PROTECT will one day benefit his family and friends in Puerto Rico and other places where the technology is needed.

Erica Bickford is the Transportation Program Manager for the DOE Office of Nuclear Energy's Nuclear Fuels Storage and Transportation Planning Project, and is responsible for spent fuel transportation policy and planning. Erica came to DOE in 2013 as an AAAS Science & Technology Policy Fellow. She is a geoscientist with expertise in freight transportation and geographic information systems (GIS). Prior to DOE, Dr. Bickford spent a year in the US Senate working on energy and environmental policy as a Congressional Science Fellow.

Elizabeth Bishop has been working and researching in the environmental field for the past 12 years, specializing in in-situ remedial design and evaluation of natural attenuation at contaminated sites. She has a B.S. in Environmental Chemistry from the Catholic University of America and conducted her graduate research in Chemistry at Penn State University. Ms. Bishop has designed, implemented, and evaluated remedial programs from over a hundred sites for a wide variety of contaminants and geologic conditions across the country.

Meg Blanchet is the Assistant Director of the Environmental Toxicology Program at the Massachusetts Department of Public Health. She is responsible for the day-to-day oversight of the Biomonitoring Massachusetts Study and has managed staff in numerous public health investigations involving exposure to chemical contaminants in a variety of environmental media and in relation to hazardous waste sites. During her 18 year tenure at MDPH, Ms. Blanchet has presented on biomonitoring, public health investigations, and other environmental health topics, including assessment of health impacts associated with exposure to arsenic and uranium in private well water, lead in soil, acute mercury spills, and volatile organic compounds in indoor air. Ms. Blanchet is a Registered Environmental Health Specialist (REHS) with a Master's in Environmental Health and a Graduate Certificate in Epidemiology, both from Tufts University. Prior to her time at MDPH, Ms. Blanchet was employed as a risk assessor and cartographer in the private sector, and has also worked as an environmental health specialist at the city/county level.

Alice Blayney, EIT, is an Environmental Remediation Engineer at Geosyntec Consultants in Brookline, Massachusetts. She earned her B.S. and M.S. Degrees in Civil and Environmental Engineering from Stanford University. Her experience includes investigatory and remedial activities at a wide range of brownfield and nuclear sites, including serving as a lead project engineer at multiple in-situ chemical oxidation and enhanced biodegradation projects. In addition to soil and groundwater monitoring projects, she also participates in soil vapor intrusion assessments under the guidelines of the Massachusetts Contingency Plan.

Felix Pinkrah Bofo was born and brought up in a family of seven in Kumasi, Ghana: with both parents, a sister, and three older brothers. The school days offered him a lot to learn. Subjects like science and mathematics were of special interest. His education began at St. Paul's Anglican International School and

went ahead to Anglican Senior High School after that. He obtained his B.S. in Materials Engineering at the Kwame Nkrumah University of Science and Technology in Ghana. He is currently studying at Hohai University with a major in Engineering Mechanics. He has a love for music and poetry.

David Bond teaches on The Environment and Public Action at Bennington College. Trained as an anthropologist, Bond studies disasters and their imprint on environmental science and governance. His work shows how toxic disruptions can fix vital relations with new forms of knowledge and care. His research has been supported by Wenner Gren, the American Council of Learned Societies (ACLS), and the National Science Foundation; his publications have appeared in *Anthropology Now*, *Cultural Anthropology*, and *American Ethnologist*. Bond holds a Ph.D. in Anthropology from the New School for Social Research. He has taught on Anthropology and The Environment at Bennington since 2013 and is currently the Associate Director of the Center for the Advancement of Public Action (CAPA) at Bennington College.

Eric J. Boswell is a Project Manager for HRP Associates, Inc. in their St. Louis, Missouri office, where is currently coordinating a large-scale remediation effort using in situ thermal desorption to address releases of trichloroethylene and associated degradation products at a Superfund Site in St. Louis. With over 16 years of experience performing and managing environmental due diligence, compliance, and remediation projects, Mr. Boswell's activities have focused on developing and implementing comprehensive site closure strategies that have incorporated numerous proven methods and newer technologies in both investigation and remediation. He has provided services to educational institutions, industrial manufactures, financial institutions, commercial developers, and governmental agencies. Mr. Boswell is a Licensed Environmental Professional (LEP), as well as a Licensed Asbestos Inspector, in Connecticut. He received his B.S. in Geology from Allegheny College in Pennsylvania.

Dwayne Breger is an Extension Professor in Environmental Conservation and Director of the Clean Energy Extension at the University of Massachusetts Amherst. The Clean Energy Extension is a new program to support the state goals to accelerate clean energy markets in Massachusetts through market outreach, technical assistance, and applied research. Prior to coming to UMass in 2015, Dwayne spent 13 years as the Director of Renewable Energy for the MA Department of Energy Resources. Before that, Dwayne taught Engineering Economics and Policy at Lafayette College, was AAAS/U.S. EPA Environmental Science and Engineering Fellow, and was a U.S. participant in the International Energy Agency Solar Heating and Cooling Program. Dwayne holds a B.S. in Engineering from Swarthmore College, an M.S. in Technology and Policy from M.I.T., and a Ph.D. in Resource Economics from UMass Amherst.

Sylvia Broude is the Executive Director for Toxics Action Center. She oversees their six New England offices and supervises a team of staff that organizes with nearly 100 communities each year. Sylvia joined Toxics Action Center as a community organizer nearly a decade ago. Recently, she played a critical role in efforts to close an 86-year old coal plant in Massachusetts and prevent a new incinerator ash landfill in Connecticut. Sylvia serves on Advisory Boards to the Administrative Council for the Massachusetts Toxics Use Reduction Act and the New England Consortium, and she is a senior fellow for the Environmental Leadership Program. Prior to joining the Toxics Action Center team, she ran electoral campaigns in Florida and New Jersey with MoveOn.org Political Action and the Sierra Club. She studied anthropology and political science at Yale.

Catherine Brown, DVM, MSc, MPH, is the Deputy State Epidemiologist and State Public Health Veterinarian in the Bureau of Infectious Disease and Laboratory Sciences at the Massachusetts Department of Public Health. She received her Doctor of Veterinary Medicine from the University of Minnesota, a Master of Science in Wild Animal Health from the University of London, Royal Veterinary College, and a Master of Public Health from Boston University. Following eight years of clinical practice in wildlife medicine, she was awarded an Applied Epidemiology Fellowship sponsored by the Centers for Disease Control and the Council of State and Territorial Epidemiologists. In her current position she oversees surveillance and educational outreach on all zoonotic and vector-borne diseases.

Mark Bruce, Ph.D. is a Corporate Technical Director for TestAmerica. He has had experience in environmental monitoring including sample preparation and analysis since 1979. He has participated in

the development of several EPA methods. He has worked with incremental sample processing techniques since 2003. He has been active on the ITRC Incremental Sampling Methodology team since it started in 2009 and particularly involved with the development of the laboratory guidance. He is currently serving as one of the trainers for the quarterly ITRC training webinars on ISM. He has provided guidance on the selection of laboratory process options for dozens of projects on a wide range of sites. Dr. Bruce earned a Ph.D. in Analytical Chemistry from the University of Cincinnati in 1984.

Christa Bucior has over seven years of experience as an environmental scientist. She is responsible for the preparation and setup of the treatability studies on groundwater and soil samples. The treatability studies include chemical oxidation, enhanced bioremediation, and solidification and stabilization. She is also responsible for several analyses including PCR and other Microbiology analyses, UV/Vis spectroscopy, GC and GC/MS spectroscopy, metals analysis via ICP-OES, Kjeldahl nitrogen analysis, pH measurement, and various titration determination methods. Much of this work is in support of the treatability studies that are performed in the laboratory in Niagara Falls. Christa assists with overall environmental operations and inspections, including State Pollutant Discharge Elimination System (SPDES) reporting, environmental permit renewals, and Integrated Contingency Plan (ICP) updates within New York State. Christa is also responsible for assisting the Niagara Falls Office with the Quality System, including performing biannual internal audits and follow-up with any non-conformances related to quality.

Matthew Burns is the In Situ Remediation Practice Leader for WSP Parsons Brinckerhoff in the US. Based in Woburn, Massachusetts, he brings chemical and microbial process expertise to assist local WSP teams with challenging investigation and remediation projects across the globe. Burns has 20 years of professional engineering and chemistry experience, and has authored numerous publications and conference platform presentations. He is on the Scientific Advisory Boards for the Advanced Tools Website (advancedtools.us) and the Association for Environmental Health and Sciences Foundation's Annual International Conference on Soils, Sediments, Water, and Energy. He is a frequent lecturer at continuing education workshops and webinars. He holds a B.S. in Environmental Science from the University of Massachusetts Amherst and an M.S. in Civil/Environmental Engineering from the University of Maryland at College Park.

Tom Cambareri manages the Water Resources Program of the Cape Cod Commission to maintain and protect the water resources of the Cape Cod Sole Source Aquifer to ensure a sustainable supply of high quality untreated drinking water and maintain the ecological integrity of fresh and marine surface water bodies. Tom has 30 years of experience in Cape Cod water resources issues. He has an M.S. in Geology with a focus on Hydrogeology from UMass-Amherst (1986). He is a Certified Ground Water Professional (#360) and a Mass. Licensed Site Cleanup Professional (# 3778). Tom is an appointed member to the Massachusetts' Water Resources Commission. His work with interested parties has moved water resource protection and restoration efforts forward by identifying the critical information gaps, developing innovative approaches to acquire and interpret information, and developing and implementing cost effective regional solutions. Tom is an avid boater, fisherman, swimmer, and road and mountain biker and hiker. He is regionally familiar with and enjoys all the natural resources that Cape Cod has to offer.

Rich Carbonaro has 15 years of experience in environmental chemistry and contaminant fate and transport modeling and is currently a partner in the environmental engineering consulting firm Mutch Associates. Dr. Carbonaro's recent work has focused on development and application of 1-D through 3-D reactive transport models of in-situ treatment processes. He is proficient in the use of existing fate and transport codes such as MODFLOW, MT3D, RT3D and PHREEQC, and has developed and applied custom reactive transport code for specific remediation applications, including in-situ chemical reduction (ISCR) of hexavalent chromium, in-situ chemical oxidation (ISCO) using permanganate, persulfate and CHP for treatment of halogenated organics, and enhanced in-situ bioremediation (EISB). Dr. Carbonaro is also the lead programmer and co-developer of the TICKET Unit World Model, a screening model for metal transformations and transport in lake systems. Prior to joining Mutch Associates, Dr. Carbonaro was a tenured full-time Associate Professor within the Civil and Environmental Engineering Department at Manhattan College. While at Manhattan, he was the PI or co-PI on various research projects funded by

NIEHS, USEPA, SERDP, NYC-DEP, and various metal and mining industries. He currently holds the position of part-time Research Associate Professor at Manhattan College and teaches courses related to water chemistry, in-situ treatment and groundwater modeling.

Stephanie Carr holds a B.S in Chemical Engineering from Brooklyn Polytechnic Institute (now NYU), Brooklyn, New York. She joined Calgon Carbon, Pittsburgh, Pennsylvania in 1979 as a Carbon Applications Engineer, after working three years as an engineer in the petrochemical industry. She has worked for most of her 37 years at Calgon Carbon out of New Jersey, providing technical sales support for activated carbon to the Eastern US and Canadian Sales groups in the areas of potable water, air and water remediation, wastewater treatment, vapor phase processes and chemical purification. She has also authored technical articles on carbon adsorption in several journals.

David Carstens is a Technical Manager for WSP | Parson Brinckerhoff based in Woburn, Massachusetts. David has more than 12 years of professional experience in environmental consulting. His areas of expertise include site investigation and remediation, geologic and hydrogeologic modeling, site conceptual modeling, data analysis and visualization, and data management. David is a licensed Professional Geologist in New Hampshire and Georgia. He received a B.S. in Geology and M.S. in Hydrogeology from Illinois State University in Normal, Illinois.

Rich Cartwright is an internationally-recognized motivational platform speaker on Hazardous Materials Management, Environmental Remediation, and Career Planning Strategies. Cartwright is an AHMP Past President, former National Board Member, and a "Pete Cook Founders Award" recipient for distinguished leadership, dedicated service, and lifetime professional achievement. He is also an IHMM Fellow.

Timothy Cary is a Research Agronomist for the Engineer Research and Development Center (ERDC), Cold Regions Research and Engineering Laboratory (CRREL) in Hanover, New Hampshire. He has conducted research on improved grass species to enable more resilient training while decreasing environmental impacts from military training.

Domenico Maria Guido Cavallo is a Biologist and Certified Occupational Hygienist with a Ph.D. in Occupational Health and Hygiene. He is an Associate Professor of Occupational Health, Hygiene and Toxicology in the Department of Science and High Technology at the University of Insubria, and also teaches at University of Milano and Politecnico di Milano (full professorship qualification since 2014). He is President of Italian Occupational Hygienists Association (AIDII) and Member of the Board of International Occupational Hygiene Association (IOHA), and is Head of Environmental and Occupational Hygiene and Toxicology Unit at University of Insubria at Como. He is an expert in risk assessment for human health, both occupational and public health. He worked also at International Centre for Pesticide Safety and Health Risk Prevention (WHO) from 1990 to 1994. Since July 2008, he is Founder and Manager of a spin-off of the University of Milano and University of Insubria on Human and Environmental Risk Assessment, namely Melete Srl. In terms of general professional experience, he has done a lot of work in environmental stressors that can affect human health (both workers and general population).

Bridget Cavanagh, Ph.D., is an Environmental Engineer with XDD Environmental. Bridget specializes in chemical oxidation technologies and is focused on advanced remediation system designs for a variety of chemicals of concern. Bridget also conducts treatability evaluations in XDD's laboratory, including bioremediation, ISCO, and thermal SVE designs. Her graduate work at Arizona State University focused on the reduction of contaminant emissions from low permeability stratigraphy.

Jeff Cegan is an Environmental Scientist specializing in risk and decision analysis at the US Army Corps of Engineers and the President of the Society for Risk Analysis' New England chapter. Jeff has over 10 years of experience in environmental modelling, risk management, and decision science. He holds an M.S. from Tufts University with a concentration in Water Resources Engineering and a Bachelor's Degree in Economics from Boston College.

Michael Celona is Chief of Water Toxics within the Massachusetts Department of Public Health, Bureau of Environmental Health's Environmental Toxicology Program (ETP). He received his B.A. in Environmental Science from Wheaton College and his M.A. in Urban and Environmental Policy from Tufts

University. He has been with the Department for 17 years and currently coordinates ETP water-related activities involving beaches, freshwater harmful algae blooms, recreational fish advisories, drinking water, and climate change. Mr. Celona co-chaired the Human Health & Welfare Subcommittee of the Massachusetts Climate Change Adaptation Advisory Committee. He currently represents the Department on the New England Interstate Water Pollution Control Commission and the Massachusetts Board of Registration of Operators of Drinking Water Supply Facilities. He has held a Massachusetts Sanitarian license since 2006.

John Cherrie graduated in Physics from Edinburgh University in 1977 and went to work at the Institute of Occupational Medicine (IOM). During his early career, he was involved in measuring exposure to airborne fibers, both asbestos and man-made mineral fibers. The latter work was in support of a large European epidemiology study coordinated by the International Agency for Research on Cancer (IARC). He developed an interest in occupational hygiene and the science behind occupational exposure to harmful agents. In 2003, he re-joined the IOM and took on the role of Research Director. In 2015, he took up a chair in Human Health at Heriot Watt University. He was a Chartered Fellow of the Faculty of the British Occupational Hygiene Society (CFFOH). He co-wrote the textbook *Monitoring for Health Hazards at Work*, published by Wiley-Blackwell (translated into Chinese in 2011). He was President of the British Occupational Hygiene Society from 2007 to 2008. He is the winner of the Bedford Medal 2014 and Jeffrey S. Lee Lecturer 2012. Mr. Cherrie is a member of the Editorial Board for the *Annals of Occupational Hygiene*, the *Scandinavian Journal of Work, Environment and Health*, and the electronic journal *Particle and Fibre Toxicology*.

Eric Cherry is a Principal Scientist with Hexagon Environmental Solutions LLC in Columbus, Ohio, US. He has worked as an environmental consultant for the last 28 years. Mr. Cherry has extensive experience with site characterization; environmental forensics; and risk assessment for a variety of industrial sites, including manufactured gas plants, coke facilities, foundries, and petroleum hydrocarbon and solvent sites; and has provided senior level support for emergency response incidents of national significance. He has been active in Environmental Forensics and Exploratory Data Analysis since the late 1990s, focusing on multivariate statistical models. Mr. Cherry has provided expert testimony or technical evaluation for contaminant characterization issues, waste management decisions and hydrogeological impacts. In addition to consulting, he has served on various technical committees for regulatory rule writing and environmental policy development, and has taught environmental chemistry. Mr. Cherry received his M.S. in Geology and Geophysics from The Ohio State University during 1984, and has extensive post-graduate academic training in Public Health and Epidemiology through The Ohio State University College of Medicine.

Dora S.-Y. Chiang is Director of Emerging Contaminants at AECOM. She holds a Ph.D. in Environmental Engineering from Georgia Institute of Technology and has over 15 years of consulting experience in the areas of contaminated site investigation and remediation. She works collaboratively with the senior management team in AECOM to assess and determine the firm's global position on emerging contaminants. She collaborates with academia to develop and demonstrate innovative remedial technologies for several emerging contaminants including PFASs, and she also manages AECOM's innovation fund for Environment Business Line.

Jay Clausen is a Physical Research Scientist with the US Army Corps of Engineers, Engineering Research and Development Center, Cold Regions Research and Engineering Laboratory located in Hanover, New Hampshire. Dr. Clausen has 25 years of research experience and has worked on military range issues for the last decade. His research interests include the fate-and-transport of anthropogenic constituents (chlorinated solvents, PCBs, explosives, perchlorate, metals, and radionuclides), dense non-aqueous phase liquid behavior, monitored natural attenuation processes, innovative remedial and sampling technologies, and climate change issues. His recent research efforts have been focused on the characterization of military ranges, the fate-and-transport of energetic compounds and metals (lead and tungsten), application of quantum structure activity relationship (QSAR) models to predict the environmental behavior of emerging compounds, and applications for the use of laser induced breakdown spectroscopy (LIBS). Dr. Clausen has a B.S. from the University of Nebraska-Omaha in Geology, M.S.

from the University of Maine in Geological Sciences, and Ph.D. from the University of New Hampshire in Natural Resources and Earth System Science.

Jill Clemmer is a Senior Environmental Analyst with the Environmental Toxicology Program at the MDPH Bureau of Environmental Health. She is responsible for the coordination of program activities, procedures, and grant deliverables conducted in support of the Biomonitoring Massachusetts Study related to participant selection and enrollment, outreach, results reporting, and organization of participant sample collection events in consultation with the State Public Health Laboratory. Ms. Clemmer has 28 years of clinical analytical chemistry experience, 22 of those with direct biomonitoring laboratory experience conducting and supervising the analyses of urine metals and serum PCBs. Her laboratory experience also includes the analyses of foods, beverages and consumer products for toxins; i.e. saxitoxins, biogenic amines, metals and pesticides.

Dan Cornacchiulo has numerous years of experience in the environmental consulting field, in addition to an exceptional research background with regard to flow and transport and modeling. His research includes investigation of Chaotic Advection Enhanced Natural Attenuation (CAENA), a concept that describes the effect of induced mixing in subsurface laminar flow to enhance natural attenuation. In the summer of 2000, the American Society of Civil Engineers (ASCE) ranked CAENA the number two topic in the nation for water resources. CAENA topics that Dan investigated are the effects of mixing frequency, heterogeneity, ambient flow, and comparison to pump and treat technology. Dan's modeling expertise includes development of a finite-difference computer code for tidal influence on unconfined aquifers. He has a Ph.D. in Civil Engineering and Engineering Mechanics from Columbia University, where his research involved numerical modeling of pollution source identification using the Marching-Jury Backward Beam Equation (MJBBE) and the Quasi-Reversibility methods. This research includes stability analysis of the backward methods, applying real life conditions such as sampling densities and uncertainties, and developing an efficient computer code using an algorithm developed specifically for the MJBBE. Post-graduation, Dan continues to advance his research in numerical modeling.

Julie Cosio is a Senior Environmental Analyst with the Environmental Toxicology Program at the MDPH Bureau of Environmental Health. Ms. Cosio is responsible for evaluating acute and chronic health impacts associated with chemical contaminants that may be present in a variety of environmental media including air, water, soil, fish, and some consumer products. She has experience with exposure investigations and biomonitoring efforts to assess the extent of environmental exposure and to evaluate possible health effects. She has previously presented on topics including human health impacts from environmental contamination at superfund sites in Massachusetts, Biomonitoring and the challenges of human exposure assessment, and Environmental Public Health Tracking. Ms. Cosio has a Master's in Public Health from Boston University and has worked for the Massachusetts Department of Public Health since 2005.

Craig Cox currently serves as President and Principal Scientist for Cox-Colvin & Associates, Inc., and is responsible for providing managerial and technical oversight on major environmental projects conducted by the firm under RCRA, CERCLA, and Brownfield programs. Cox-Colvin & Associates, Inc., founded in 1995, provides environmental consulting services to public and private sector clients throughout the United States. Mr. Cox began his environmental consulting career in 1987 with Geraghty & Miller, Inc., where he became the firm's Midwest Regional Manager of CERCLA projects. Mr. Cox is inventor of the Vapor Pin^R, a sub-slab soil gas sampling device, and is the primary architect of a variety of environmental database applications, including Data InspectorTM. Mr. Cox received his B.S. and M.S. Degrees in Geology and Mineralogy from The Ohio State University and a Professional Degree in Hydrogeology from the Colorado School of Mines. Mr. Cox is a Certified Professional under Ohio EPA's Voluntary Action Program, and is a co-author of "Background Metals Concentrations in Ohio Soils" (1996) and a contributing author on reports concerning background metals concentrations published by Ohio EPA.

Geeta Dahal is an Environmental Engineer at EthicalChem, South Windsor, Connecticut. She designs remedial strategies for surfactant-oxidant applications for soil and groundwater remediation. She is experienced in complete project life cycle from developing bench-scale treatability protocols to implementation of full scale remedies. She has participated in several on-site remediation projects providing implementation management, oversight and technical assistance. Geeta has an M.S. in Environmental Engineering from the University of Connecticut.

Gauham Das, Ph.D., is an Associate Professor of Civil Engineering at Wentworth Institute of Technology. He is principal advisor for several undergraduate student research projects presented at this conference.

Andrea DiPerna is an Environmental Analyst in the Massachusetts Department of Public Health, Bureau of Environmental Health, Environmental Toxicology Program. Andrea serves as the primary coordinator of participant enrollment into the Biomonitoring Massachusetts Study and develops risk communication and outreach materials for communities throughout the state. Andrea has a B.S. in Health Science from Boston University and a Master of Public Health Degree in Environmental Health from the Boston University School of Public Health. Andrea has presented on topics related to evaluating exposure to environmental chemicals and biomonitoring study development.

Paul Dombrowski is a Remediation Technical Leader at AECOM with 12 years of experience, who specializes in the design, implementation, and oversight of groundwater and soil remediation projects. His areas of expertise include in-situ remedial technologies, groundwater geochemistry, chlorinated solvent site investigation, and Brownfields assessment and redevelopment. He is co-founder of the AECOM Chemical Oxidation Technical Practice Group and has served as the leader of AECOM's Environment Technical Practice Network. He provides remedial investigation, design, and implementation support to projects across the United States and around the world for AECOM's clients. He attended Manhattan College in New York City where he earned Bachelor's and Master's Degrees in Environmental Engineering. He is registered as a Professional Engineer in Massachusetts and Connecticut as well as serves on the Scientific Advisory Board for the AEHS Foundation's Annual East Coast Conference.

Thomas Donn is the President of EnviroSouth, Inc. in Greenville, South Carolina. As a Geology graduate of the University at Buffalo and Miami University (of Ohio), Tom's presence in South Carolina since 1987 truly qualifies him as one of the northerners who came and stayed (also referred to by the South Carolina natives as a "*Damned Yankee*"). After beginning his career by serving a five-year sentence as an environmental regulator, Tom entered the private consulting field and has been attempting to keep his clients out of trouble for the past 25 years.

Maureen Dooley has over 25 years' experience in many aspects of environmental industry including project management, research and development, senior technical oversight, remedial design and laboratory management. Ms. Dooley's current position is the Director of Strategic Projects for Regenesis. She is responsible for managing both sales and technical support associated with Regenesis bioremediation and chemical oxidation products. As part of her responsibilities at Regenesis, she has reviewed hundreds of potential projects and provided recommendations for remediation. Much of her work over her career has been focused on the development and implementation of bioremediation and chemical oxidation programs at petroleum and chlorinated hydrocarbon sites.

Russell Dowling received his M.P.H. in Global Environmental Health at Columbia University. He began working as a full-time Program Assistant at Pure Earth (formerly Blacksmith Institute) shortly after completing graduate school. In 2014, he was promoted to a Research Coordinator and Program Officer in the Sub-Saharan Africa region. Since then, he has managed the implementation and public health aspects of several environmental remediations and research projects in Ghana, Zambia, Mexico, and Uruguay. He has also coordinated Pure Earth's research efforts and published several papers on child and environmental health.

Russ Downey joined The Upjohn Company in 1990 as an engineer and has held several managerial positions within Upjohn, Pharmacia & Upjohn Company and Pharmacia Corporation prior to joining Pfizer. Russ has been involved with environmental compliance auditing as well as environmental transactional due-diligence and environmental remediation. In his current position of Director of Environmental Engineering, Remediation and Transactions, Russ is responsible for several large, complex remediation projects where stakeholder involvement and sustainability are key objectives. Russ has more than 30 years of experience doing environmental and engineering-related work in both government and industry. He received a B.S. in Geological Engineering from Michigan Technological University and an M.S. in Geology from Western Michigan University.

Tommaso A. Dragani leads a research group at the Italian National Cancer Institute in Milan. He has recognized experience on molecular mechanisms of chemical carcinogenesis and on genetic epidemiology, with a major emphasis on the role of genetic predisposition on individual risk to develop cancer. He is involved in several international collaborations on genetics of lung cancer, and he has authored 165 peer-reviewed publications in international journals. He participated as a member of Working Groups of the International Agency for Research on Cancer for the preparation of Monographs on the Evaluation of Carcinogenic Risks to Humans.

Tom Drake works for the Louis Perry Group, A CDM Smith Company, as the Gas to Power Client Service Leader. Tom has 17 years of sales experience within the power generation and manufacturing industries. In his role as Client Service Leader for the Gas to Power Market, Tom supports the Louis Perry Group in developing new design build business with clients in the gas power generation market. Prior to the Louis Perry Group, Tom managed the Gas Power Systems Group at WW Williams, developing gas to energy projects across three US divisions and Mexico. Tom graduated from Grove City College in Grove City, Pennsylvania. He is a member of the International District Energy Association, American Biogas Council and the Midwest Cogeneration Association. He also gave a presentation on power generation and anaerobic digestion at the 2016 West Coast BioCycle Conference.

Jack Duggan is a Professor of Civil Engineering at Wentworth Institute of Technology. Dr. Duggan is the principal advisor for two undergraduate student research projects presented at this conference.

Brad Elkins leads the Technical Sales and Support Department at EOS Remediation based in Raleigh, North Carolina. He specializes in the application of bioremediation strategies to treat hazardous compounds in soil and groundwater. He earned a Master's in Geology from East Carolina University and is a registered Professional Geologist in North Carolina.

Elfatih A.B. Eltahir's research focuses on understanding how regional land use change/land cover change as well as global climate change may impact society through changes in the patterns of water availability, extreme weather, and spread of vector-borne diseases. Together with his students, they develop sophisticated numerical models [e.g. MIT Regional Climate Model (MRCM); and the Hydrology, Entomology and Malaria Transmission Simulator (HYDREMATS)] that are used for predicting such impacts at regional scales. They test these models against satellite observations and archived data sets of hydrologic and atmospheric variables, as well as data collected in their own field campaigns. He established long-term field sites to study the ecology of malaria transmission in several African villages, significantly improved the state-of-the art tools for planning environmental management of this disease under the current climate, and projected a less worrisome future for malaria in West Africa than suggested by previous studies. Dr. Eltahir is a recipient of the US Early Career Presidential Award in 1997 and the Kuwait Prize in Applied Science in 2000 for his work on climate change. He has been elected Fellow of the American Geophysical Union (AGU) in 2008. Dr. Eltahir is a Professor of Civil and Environmental Engineering at MIT. He earned a B.Sc. in Civil Engineering from the University of Khartoum in Sudan in 1985 (First Class Honors), an M.Sc. in Hydrology from the National University of Ireland in 1988 (First Class Honors), and the S.M. in Meteorology and the Sc.D. in Hydro-Climatology, both from MIT in 1993.

Jim Fenstermacher leads the corporate global Remediation Services Technology Transfer Webinar Series for AECOM, and also leads the Environmental Remediation Team in Conshohocken, Pennsylvania. He is the portfolio-wide Program Technical Manager for a large, multi-national chemical manufacturing client, and is on the remediation technical advisory team of another large chemical manufacturing client. In these roles he facilitates consistent delivery of innovative, sustainable, effective, and efficient site remediation solutions by connecting internal and external (academic) remediation expert resources with project teams at critical delivery stages. Previously, Mr. Fenstermacher has served in an advisory capacity on numerous complex remediation projects for major clients within AECOM, and he has been a project manager and/or technical lead for numerous complex projects in a variety of environmental and regulatory settings. He has been responsible for the selection, installation, and operation of soil and groundwater remediation programs, including ERH, bioremediation, in-situ chemical oxidation, ZVI PRBs, vapor-liquid (dual-phase) extraction, soil vapor extraction, and traditional groundwater extraction systems. He resides in the Philadelphia area of southeast Pennsylvania. He

earned his Master's in Civil/Environmental Engineering from the University of New Hampshire, and his Bachelor's in Chemical Engineering from Worcester Polytechnic Institute.

Susan Fessenden has worked for the Department of Environmental Protection in the Bureau of Waste Site Cleanup since 1987. A primary responsibility has entailed developing and implementing training, including regulatory and technical/scientific training programs and annual Health and Safety training for Waste Site Cleanup staff, Licensed Site Professionals and the regulated community. She has overseen the development and presentation of co-sponsored DEP/LSPA seminars from the beginning of the redesigned 21E program in 1993. Previous duties included supervising the human resource and administrative staff as Section Chief of Administration in the Division of Fiscal Management in BWSC. Most recently, Ms. Fessenden has been involved in the clean energy results program focus on greener cleanups at contaminated sites in Massachusetts and being the liaison for Licensed Site Professionals. Ms. Fessenden holds an M.A. in Public Management from the University of Massachusetts, Boston and a B.A. from Emmanuel College.

John Fitzgerald received a B.S. and M.S. in Civil Engineering from the University of Massachusetts at Lowell, and is a Registered Professional Engineer in Massachusetts. He has been employed by the Massachusetts Department of Environmental Protection (DEP) since 1980, where he oversees the assessment and cleanup of sites contaminated by oil and hazardous materials.

Camille Fontanella has been with the Connecticut Department of Energy and Environmental Protection since 2004 as an Environmental Analyst. She is the Technical Outreach Coordinator for the Remediation Division, Coordinating Lead for Significant Environmental Hazards, Chair of the Remediation Roundtable forum, and DEEP Green Remediation liaison. Prior to coming to DEEP, she was an environmental consultant for seven years. She is also a founding member of the Geological Society of Connecticut and has served on its Board of Directors since 2010. She holds a B.S. in Geology from the College of William and Mary in Virginia and an M.S. in Geophysics from the University of California at Davis.

Norman Forsberg has over eight years of experience in toxicology, risk assessment, and analytical chemistry. During this time, Dr. Forsberg has contributed to human health and/or ecological risk assessments and risk-oriented activities for decommissioned weapons production facilities, oil-containing railcar spills, polycyclic aromatic hydrocarbons (PAHs) in particulate matter and grilled foods, hazardous waste combustion facilities, occupational settings, and operating and decommissioned mining sites. He also has experience identifying/characterizing the nature and extent of chemicals in smoke-cured foods, crude oil spills, grilled foods, chemical production facilities, occupational environments, and industrial facilities. His work experience with Arcadis has specifically involved performing chemical risk assessments, site characterizations, toxicity data evaluations, benchmark dose modeling, reference dose derivation, predictive toxicology assessments, *in vitro* and *in vivo* bioavailability testing, mutagenicity testing, comprehensive literature reviews, and defining risk-based action levels. He also has extensive analytical chemistry experience measuring polycyclic aromatic hydrocarbons, oxygenated-PAHs, polychlorinated biphenyls (PCBs), pesticides, and pesticide metabolites in a wide range of sample matrices using several analytical platforms.

Sam Gaeth is a Master's student in the Civil and Environmental Engineering Department at Tufts University. His work focuses on the bioremediation of chlorinated solvents in conjunction with abiotic degradation mechanisms. Additional work completed during his time at Tufts has included extensive soil characterization of a superfund site in Williston, Vermont. He aims to pursue a career in environmental consulting when he completes his degree in December 2016.

Eric W. Garcia, PG, CEG, CHG, is the Founder and Principal Hydrogeologist of Accelerated Site Characterization (ASC) Tech Services located in Sacramento, California. ASC is a professional field service provider of High-Resolution Site Characterization (HRSC) technologies, and has been providing HRSC services nationwide and to the Asia-Pacific since 2007. Eric is an expert in direct-push HRSC technologies and often presents on the implementation of HRSC technologies such as Membrane Interface Probe (MIP), Hydraulic Profiling Tool (HPT), and Optical Image Profiler (OIP). Eric has over 25 years of environmental consulting experience in site characterization and remediation throughout the western US, and is a Professional Geologist (PG) licensed in six western states. He has specialty

licenses of Certified Engineering Geologist (CEG) in California and Washington and Certified Hydrogeologist (CHG) in California. Eric received his B.S. in Geology from California State University, Fresno (CSUF) and completed advanced graduate work at CSUF and San Jose State University in the areas of Engineering Geology, Hydrogeology, Remote Sensing, and Applied Geophysics.

Quentin Giraud, M.Sc., is a Ph.D. student in Lyon, France. He started his doctoral studies in February 2014 with INTERA, in partnership with the CEREGE lab in Aix-en-Provence, France. The subject of his thesis is the numerical modelling of the fate of volatile organo-halogenated compounds (VOHC) in the ground. In the framework of his thesis, Quentin works on an industrial and research partnership project on emerging remediation techniques and innovative characterization tools for soils and groundwater contaminated by VOHC. The aim of his part of the project is to elaborate and develop numerical models of the physicochemical phenomena implied in the natural or forced evolutions of ground contaminations due to the presence of chlorinated solvents. Hence, he developed numerical models with the TMVOC software on Dense Non-Aqueous Phase Liquid (DNAPL) multiphase flow modelling. The data used during this project mainly comes from in situ experiments, led in an industrial site in the context of the SILPHES research project. Before his thesis, Quentin worked in France in environmental consultancy firms (ANTEA, BURGEAP). He worked mainly on contaminated lands and hydrogeology studies. He also worked in Perth, Australia in MWH as a Field Hydrogeologist, where he supervised drilling teams for mining projects, mainly in the Pilbara in Western Australia. He has an M.Sc. in geosciences, delivered by the Université de Lorraine, France and the École Nationale Supérieure de Géologie-ENSG of Nancy, France.

Philip Goodrum is a Toxicologist and Senior Managing Scientist at Integral Consulting Inc. He has 25 years of experience in risk assessment and environmental modeling, specializing in methods to improve ways to reduce uncertainty in estimates of exposure and dose-response. He is a member of the ITRC workgroup on Incremental Sampling Methods and continues to participate in teaching the statistics section of the on-line training courses. Dr. Goodrum's current interests include the interplay between science and public policy for emerging contaminants. He has given several presentations on perfluorinated compounds at professional conferences in the United States and Europe. With his colleagues at Integral, he has just completed a national survey to determine key factors that influence how governments at the state level manage PFCs and other emerging contaminants. He currently serves on several governmental panels and advisory boards including: EPA's Science Advisory Board for lead; EPA's Clean Air Scientific Advisory Committee (CASAC); Interstate Technology and Regulatory Council workgroup on Incremental Sampling; and NIH/NIEHS grant review committees on lead and inhalation exposure. Dr. Goodrum is a Certified Toxicologist with the American Board of Toxicology. He holds a Ph.D. in Environmental Engineering with a focus on Childhood Lead Poisoning and an M.S. in Water Resources.

Savannah Gregor is currently a fourth-year undergraduate student at Northeastern University studying Mechanical Engineering. She is currently working as part of the PROTECT research group as a ROUTES co-op/intern under the supervision of Professor Akram Alshawabkeh and Ljiljana Rajic. Her group works on remediating chlorinated solvents and other organic and inorganic contaminants, especially trichloroethylene in groundwater. In the past she has done work at a remote ecovillage and that experience is what led her to narrow her focus towards environmental protection, sustainability, preservation, etc. in her engineering career. Please contact her if there are any questions about her experience in the program: Gregor.s@husky.neu.edu

Steffen Griepke Nielsen is the Technical Director at TerraTherm. He is involved in TerraTherm's front end designs and site evaluations. He is responsible for selecting the best thermal technology based on site conditions and for the subsurface heating designs, including the numerical modeling conducted in the early design phase of their projects. In addition, he leads up TerraTherm's data management efforts, and develops tools and systems allowing real time client access for operational data during operation of TerraTherm's thermal projects.

Doug Grosse graduated from the University of Cincinnati in 1982 with an M.S. in Environmental Engineering. He recently retired from the U.S.EPA in 2015 after 36 years of federal service. Currently, he

is a part time consultant with DWG Consultants, LLC. He belongs to several professional organizations including the Science Advisory Board of the AEHS Foundation.

Shadi Hamdan obtained his Civil Engineering degree in 2002 from the IUG University in Gaza. He worked as a project engineer in the environmental field until 2006. He obtained his M.Sc. in Water Resources Engineering (2008) from the IUPWARE program organized by the Katholieke Universiteit Leuven and the Vrije Universiteit Brussels in Belgium (sponsored by VLIR). Currently, he is a Ph.D. student at KU Leuven- Belgium. His research is focused on electrokinetic technology as an innovative methodology to control seawater intrusion in coastal aquifers.

Marina Hogan is currently a senior at Mount Holyoke College studying Biology and pursuing a Culture, Health, and Science Certificate. She recently completed an internship with the Massachusetts Department of Public Health focusing on enrollment for the Biomonitoring Massachusetts Study.

Hsin-Lan Hsu is a Senior Researcher in the Department of Environmental Forensics at Industrial Technology and Research Institute, a leading research organization in Taiwan devoted to developing technologies for industries and the government. She is currently developing the compound-specific isotope analysis for carbon, hydrogen and chloride isotopes of organic compounds in groundwater, air and sediments, and is working closely with the Taiwan EPA and local consulting companies to identify the sources of chlorinated organic compounds in the groundwater. Dr. Hsu obtained her Ph.D. in the Environmental and Water Resources Engineering program at the University of Michigan, Ann Arbor, where she studied the impact of surface-active impurities of organic liquid waste on the liquid waste transport in the groundwater. She also holds a B.Sc. in Physics and M.Sc. in Environmental Engineering from the National Taiwan University. Dr. Hsu specializes in chlorinated DNAPL contaminations and has spent more than nine years of career life undertaking site investigation, remediation, and forensic projects. She is a member of Taiwan Association of Soil and Groundwater Environmental Protection and Chinese Environmental Analytical Society.

Emma Harnisch is a junior Geosciences student at Smith College. She is involved in projects with Smith College's Center for Ecological and Environmental Design and has also worked with the Green Mountain Conservancy Group assessing water chemistry and potential contamination. During the 2016 NEGSA conference, she presented her research on heavy metal pollution in pond sediments in New Hampshire. Emma is involved in various environmental and outdoor groups on campus and will graduate in 2018.

Jeff Hardenstine is an environmental chemist with over 25 years of experience specializing in chemical analysis and data interpretation using advanced instrumental methods and forensic chemical fingerprinting. He helps to design, setup, and execute laboratory based research studies which include biodegradation of marine, terrestrial, and lacustrine crudes; heavy fuels, diesel, and coal tar; evaporation of PCB Aroclors from soil; and holding time studies to evaluate analyte loss due to time and temperature exceedances as a result of shipping delays.

Edward Hathaway is the EPA Remedial Project Manager for the Elizabeth Mine. He has been working in the Superfund program for 27 years and has B.S. degrees in Environmental Science and Business Management.

Paul Hauck is a Mechanical Engineer and registered Professional Engineer with 42 years of experience in electric power, solid waste management, municipal public works, and biofuels industry. His first 17 years were devoted to design, testing and service of steam generators and other thermal equipment used in commercial nuclear power plants. Over the past 25 years, Paul has provided services in support of the construction, operation and maintenance of municipal solid waste-to-energy (WTE) and other public works projects. Mr. Hauck joined CDM Smith in Tampa as a solid waste consulting engineer in 2007, where he currently provides operation monitoring support services to the municipal owners of several Tampa Bay area waste-to-energy projects.

Timothy Havranek, MBA, PMP is a Principal at Integral Consulting, Inc. and is the practice leader of the Strategic Business Services group. He specializes in the application of quantitative decision analysis and probabilistic modeling to facilitate strategic planning and in the implementation of project management

processes to ensure effective plan implementation. He has over 30 years of experience in the environmental remediation and oil and gas production industries. He holds an M.B.A. from Carnegie Mellon University with concentrations in Strategy and Finance and a Bachelor's Degree in Petroleum Engineering from Marietta College.

Wendy Heiger-Bernays is on the faculty of the Department of Environmental Health at the Boston University School of Public Health. Her work reflects her education in molecular toxicology and her professional experience in regulatory toxicology and risk assessment. Her interests center on understanding how environmental hazards adversely affect people's health and how risks associated with these exposures can be quantified and decreased. Dr. Heiger-Bernays works with multiple research scientists to improve translation of the science to inform policy and practice. Her own research focuses on understanding patterns of migration of contaminants in municipal compost and soils in urban gardens and risks associated with these agents, exposures and risks associated with polychlorinated biphenyls in air and in fish, and the evaluation and potential impact of endocrine disrupting chemicals in waterways. She serves on technical advisory committees for toxicological and environmental health issues at Massachusetts Department of Environmental Protection and the US Environmental Protection Agency, and she serves as Chair of her local Board of Health.

David Heislein of Amec Foster Wheeler Environment & Infrastructure, Inc. has over 30 years' experience providing project management, technical leadership and engineering in environmental/civil design, permitting and construction. This experience includes the investigation and remediation of chemical, explosives and radiological contaminated sites; regulatory compliance and environmental permitting; feasibility studies; and engineering design and construction for federal, state and the private sector.

Bruce Hensel is a hydrogeologist with more than 30 years of experience in research and consulting. He received his B.S. and M.S. in Geological Sciences from the University of Wisconsin-Milwaukee, and has worked with groundwater issues at CCR management facilities for more than 20 years.

Eric Hince is the Senior Bioremediation Scientist at EWMA and is the technical lead for their bioremediation research initiative. Mr. Hince has more than 28 years of professional experience concerning subsurface investigation, remote sensing and remediation projects. After attending the U.S. Naval Academy at Annapolis, Mr. Hince obtained a B.S. in Geology and M.S. in Marine Environmental Sciences from the State University of New York at Stony Brook. Mr. Hince's research interests include the microbial ecology and biogeochemistry of contaminated soils and groundwater aquifers and the dynamic interactions of consortia of bacteria, archaea and fungi in anaerobic bioremediation processes. Mr. Hince was issued 13 U.S. patents for bioremediation technologies, including his denitrification-based bioremediation ("DBB") technology, a process he has been working on since the early 1990's. Mr. Hince has previously presented at the AEHS / University of Massachusetts, Battelle and IPEC conferences, and previously served on the scientific advisory board for the subject conference in the 2000's. Mr. Hince's current presentation is based on the application of qPCR and next-generation sequencing to investigate the microbial ecology of a BTEX-contaminated groundwater aquifer undergoing DBB treatment.

Hsin-Lan Hsu is a Senior Researcher in the Department of Environmental Forensics at Industrial Technology and Research Institute, a leading research organization in Taiwan devoted to developing technologies for industries and the government. She is currently developing the compound-specific isotope analysis for carbon, hydrogen and chloride isotopes of organic compounds in groundwater, air and sediments, and is working closely with the Taiwan EPA and local consulting companies to identify the sources of chlorinated organic compounds in the groundwater. Dr. Hsu obtained her Ph.D. in Environmental and Water Resources Engineering at the University of Michigan, Ann Arbor, where she studied the impact of surface-active impurities of organic liquid waste on the liquid waste transport in the groundwater. She also holds a B.Sc. in Physics and M.Sc. in Environmental Engineering from the National Taiwan University. Dr. Hsu specializes in chlorinated DNAPL contaminations and has spent more than nine years of career life undertaking site investigation, remediation and forensic projects. She is a member of Taiwan Association of Soil and Groundwater Environmental Protection and Chinese Environmental Analytical Society.

Raquel Húngaro Costa is an Environmental Engineering student at University of Sagrado Coração in Brazil. She has been working on environmental issues such as recyclable waste and remediation. Nowadays, she is working on evaluation of muscovite use as a reactive barrier, associated with in-situ capping, for remediation of sediment contaminated with lead ions.

Timothy Iannuzzi is a scientist with more than 27 years of research and consulting experience and is the Chief Ecologist and Technical Knowledge and Innovation Leader for the Risk Assessment and Natural Resources Damage Assessment (NRDA) Practice within Arcadis. His project work and management experience ranges from screening-level environmental assessments to multimillion-dollar, risk-based investigations of ecological and human health, NRDA, environmental impact evaluations, ecological restoration and litigation support. Mr. Iannuzzi also teaches courses in ecological risk and impact assessment in scientific conference/short-course forums and currently as a credited course at the University of Maryland. In addition, Mr. Iannuzzi is continuously involved in research into key areas related to estuarine and freshwater ecology, risk/impact assessment, NRDA and historical ecology. His publications include more than 35 technical papers in scientific journals, two book chapters and senior authorship on a book entitled *A Common Tragedy, History of an Urban River* (Amherst Press, 2002), which reconstructs the environmental history of a large estuarine watershed and chronicles the challenges related to the NRD process and restoration of urban waterways.

Glenn Nicholas Iosue, P.E., is the President of Directional Technologies, Inc. He has 20 years' experience, and holds a B.S. in Bioenvironmental Engineering from Rutgers University, LEED certification, Professional Engineer licenses in multiple states, and is an NCEES Model Law Engineer. Mr. Iosue has significant experience in developing effective technical solutions for Fortune 500 companies and government agencies. Mr. Iosue has led complex investigations and cleanup programs as well as designed and enhanced numerous treatment systems. This has included in-situ chemical oxidation, air sparging, bioremediation, soil vapor extraction, and other innovative approaches. He has designed and installed horizontal wells to recover NAPL, collect gas, and remediate challenging sites. His areas of technical expertise include remedial treatment systems, Superfund site management, feasibility studies, vapor mitigation, permitting of industrial and commercial facilities, and groundwater remediation. Mr. Iosue has been involved with numerous projects for both active and abandoned facilities and installations. He has a thorough background in directing and assisting multiple disciplinary teams in complex assignments throughout the United States.

J. Andrew Irwin is President of IRWIN Engineers, Inc., a firm located in Natick, Massachusetts specializing in chemical and environmental engineering. IRWIN Engineers was founded in 1996 and is a professional service firm providing effective response action support to owners of commercial real estate for assessment and cleanup of contaminated properties and engineering for inherently safer processing and release prevention at industrial sites. Mr. Irwin received his Bachelor of Science and Master of Engineering Degrees in Chemical Engineering from Cornell University and has over 30 years of professional engineering consulting experience. He is a practicing LSP and a Past President of the LSP Association. As a longstanding member of the LSPA Technical Practices Committee, he has written many articles for the LSPA Newsletter and presented courses related to technical and regulatory facets of site assessment, remediation and, in particular, management of remediation waste and hazardous waste.

David Jensen, EIT, is an Environmental Remediation Engineer at Geosyntec Consultants in Acton, Massachusetts. He completed his undergraduate studies through a dual-degree program, receiving his B.A. from Colby College and his B.E. from Dartmouth College. He recently earned his Master's in Engineering from M.I.T., where he researched an innovative passive sampler design for soil vapor. His experience includes investigatory and remedial activities at various sites across Massachusetts as well as previously working as a GC/MS analyst at TestAmerica.

Brian Jones is an Application Specialist for Geophysical Survey Systems, Inc. (GSSI), the world leader in ground penetrating radar. Brian has over 15 years' experience in both consulting and customer support solving environmental and engineering problems with ground penetrating radar and geophysical instrumentation, and has a degree in Environmental Geoscience from Boston College. Brian actively participates in multiple trade groups.

David Kane is a Professional Geologist at Tetra Tech in Newark, Delaware. He has over 23 years of experience specializing in hydrogeological and hazardous waste site investigations and remediation. Throughout his career he has worked at sites with a broad range of contaminants ranging from MGP and wood treater waste to chlorinated solvents in fractured bedrock. His current area of focus is in utilizing high-resolution site characterization (HRSC) techniques and innovative remedial technologies to meet technical and regulatory challenges for his clients and to reduce life-cycle cleanup costs. He is a Pennsylvania- and Delaware-licensed Professional Geologist and a member of State of Delaware DNREC HSCA Advisory Committee.

Russ Keenan, Ph.D. is Vice President and Principal Toxicologist at Integral Consulting, Inc., a national science and engineering firm and strategic partner with the AEHS Foundation. Dr. Keenan has 30 years of experience as a biologist and toxicologist and is regarded as an expert in the risk assessment of PCBs, dioxin, and mercury, and for the development of probabilistic risk assessment methods. Dr. Keenan is noted for his work in evaluating the human health and ecological risks associated with contaminated aquatic environments at many of the major environmental sites in the U.S. He serves on the AEHS Scientific Advisory Board and is also an active member in the Society of Toxicology, the Society for Risk Analysis, and the National Council for Air & Stream Improvement. He holds a B.S. in Biology from Bates College and a Ph.D. in Environmental Biology from Duke University.

Karen Kinsella, Ph.D., is a Biogeochemist at GZA GeoEnvironmental, Inc. in Glastonbury, Connecticut. She has more than 40 years' experience in the agricultural, analytical, construction, energy, environmental, and radionuclide sectors. Karen earned a Ph.D. in Soil Chemistry and Microbiology from the University of Connecticut in 2009 and an M.S. in Chemistry from Central Connecticut State University in 1996. She has taught chemistry and environmental science at the secondary school level. Her consulting practice focuses on applying biochemical and geochemical processes for active remediation and natural attenuation of soil and groundwater contaminants.

Mark Kluger, the founder and President of Dajak, is a graduate of Johns Hopkins University with a focus in Chemistry, Physics and Material Sciences. Mark has experience with site characterization; surface geophysics; multi-phase fluid flow; process optimization; and sediment, soil and groundwater remediation procedures and technologies, including bioremediation, surfactant floods and in-situ heating. Mark is a member of the Interstate Technology and Regulatory Council and the Sustainable Remediation Forum.

Jessie Kneeland is an Environmental Chemist with a diverse scientific background, including expertise in organic geochemistry, coral reef ecology, and climate science. At Gradient, she applies her geochemical knowledge to evaluate environmental data in the context of natural background variability and analytical method limitations. Prior to joining Gradient, Dr. Kneeland taught Environmental Chemistry at Haverford College. Her doctoral research involved identifying new chemical biomarkers of environmental stress in corals. She successfully used chemical proxies from marine sediments to reconstruct ancient ocean temperature records and related those histories to known climate shifts. Her scientific interests center on using chemical proxies to trace biological, chemical, and physical processes in the environment. She has a Ph.D. in Chemical Oceanography from the Massachusetts Institute of Technology and Woods Hole Oceanographic Institution, an S.M. from MIT, and a B.S. in Geology from Caltech.

Stephen Koenigsberg brings more than three decades of environmental experience to his practice as a Senior Principal/Director of Remedial Technologies in Civil and Environmental Consultants (CEC) and is based in Irvine, California. Steve is known for his work in the development and application of innovative remediation protocols, authoring or co-authoring over 175 technical articles, four books and four international patents focusing on remediation and environmental biotechnology. In 1994 he co-founded Regenesix, where as VP R&D he co-developed several products, including ORC, HRC and Regenox, which have been applied at almost 25,000 sites worldwide. During his 14 year tenure, about 17,000 sites were treated, where he had different levels of involvement across about 1,000 as a vendor making recommendations in bioremediation, chemical oxidation and bioaugmentation practices. In the last decade, Dr. Koenigsberg moved into consulting, including service with Brown and Caldwell as a Vice President/Technology Director and Environ as a Principal, working in various capacities on about 100 cases across a variety of contaminant issues and geologies. In 2004, Steve was the co-recipient of a Wall Street Journal Technology Innovation Award and in 2010 received a Lifetime Achievement Award

from the Association for Environmental Health and Sciences (AEHS) Foundation. Dr. Koenigsberg is an Adjunct Professor at the California State University at Fullerton and serves on the Dean's Advisory Council. He received a B.A. from the City College of New York (CCNY) and an M.S. and Ph.D. from Cornell University.

Joseph Krikorian is a Geologist for Spectra Environmental Group in Latham, New York. Prior to his employment at Spectra, he worked as an Environmental Scientist and Archaeologist for Tetrattech in Pennsylvania. In 2011, Mr. Kirkorian received a dual-major Bachelor's Degree in Geology and Water Resources from SUNY Oneonta.

Thomas Kryzak is the founder and lead inventor of Air & Earth LLC (A&E). A&E is a global research and development firm whose focus is on sediment and habitat remediation, invasive species eradication; nutrient/pesticide recovery, agriculture; energy; and historical artifact discovery, recovery and documentation. A&E's mission is focused on the development, commercialization, marketing and licensing of patented technologies that operate in a sustainable and social manner for the benefit of the environment and people globally. A&E is committed to international development and partnerships in an effort to promote and foster worldwide sustainability. Currently, Thomas has over 20 issued patents in nine countries with over 20 more patent applications under examination and continues to research and file patent applications in a multitude of fields. Thomas completed his first dredging project in Shandong Province China in 2014 using one of his Chinese patented technologies. A&E's US project work is routinely with the Department of Energy and the US Navy focused on their contaminated sediment and invasive species projects. Thomas was selected in April 2015 by NY SBDC as the Exporter of The Year. Thomas was selected in May 2015 by NY ESD to attend the Great Lakes and St. Lawrence Leadership Summit Meeting held in Quebec City at which eight States and two Provinces announced a series of actions to grow the region's \$5 trillion economy and protect the world's greatest freshwater system. Specific actions included pledging to shrink the environmental impact of the region's transportation network and implement innovative responses to aquatic invasive species, nutrient and harmful algae blooms. In September 2015, Thomas was selected to present as a keynote speaker at the China International Ecological Environmental Technology and Equipment Expo.

Timothy K. Kucab, CHMM/Project Compliance Specialist, received his degree in Environmental Analysis and Policy from Boston University and is a Certified Hazardous Materials Manager. Mr. Kucab specializes in air permitting, compliance auditing, environmental management systems and hazardous waste management. Prior to joining Tighe & Bond, Mr. Kucab worked as an auditor for the Massachusetts Underground Storage Tank Petroleum Product Cleanup Fund. Mr. Kucab has over 10 years of applicable experience.

Daron Kurkjian, PE is a Project Manager at Weston & Sampson with 13 years of experience. He specializes in the characterization of contaminated waste sites and the design and implementation remediation projects. His areas of expertise include in-situ remedial technologies, construction management, chlorinated solvent site investigation, and brownfields assessment and redevelopment. He attended Tufts University where he earned a B.S. in Environmental Engineering and M.S. in Engineering Management, and remains active with the university. He is registered as a Professional Engineer and Asbestos Inspector in Massachusetts.

Fayaz Lakhwala serves as the Technical Manager for North America at PeroxyChem Environmental Solution. He received his M.S. and Ph.D. in Chemical Engineering with a minor in Environmental Engineering from the New Jersey Institute of Technology. He has 26 years of experience working in the environmental field. He has worked at environmental consulting firms as well as environmental technology companies. Over the last 12 years, his focus has been on the design and application of *in situ* chemical reduction (ISCR), *in situ* chemical oxidation (ISCO), enhanced reductive dechlorination (ERD), and NAPL / heavy metal stabilization technologies.

Michael Lee is Vice-President of Research and Development at Terra Systems, Inc. He earned a Bachelor's Degree in Biology from the University of Louisiana at Monroe and a Doctorate in Environmental Science from Rice University. He has more than 30 years' experience practicing in remediation services.

Patrick Lewis is President, Senior Scientist, and co-founder at Defiant Technologies, manufacturer of the FROG-4000. Pat has 26 years of experience in analytical chemistry and application development. He has worked for 20 years in the field of chemical analysis micro systems and holds 10 patents in the area. Pat has developed microsystems for volatile organic compounds, chemical warfare agents, toxic industrial chemicals, explosives, and other applications.

Eric Litman is an environmental chemist with 15 years of laboratory and consulting experience specializing in applied chemistry and technical project management. Since 2010, he has been a Consulting Scientist at NewFields Environmental Forensics, LLC in Massachusetts, working in support of governmental and industrial clients. During this time he has managed a variety of regulatory and industrial site investigations focused on the chemical characterization of environmental contaminants. His research interests include the optimization of analytical techniques and the development of emerging environmental technologies. Mr. Litman has conducted multiple process chemistry assessments for historical petrochemical and metallurgical operations.

Shih-Lin Lo is an Assistant Researcher in Environmental Analysis Laboratory, Taiwan EPA. He obtained both his Bachelor's and Master's Degrees in the Public Health program at the National Taiwan University. He has been working on method development of Raman spectroscopy and isotope analysis and their application in environmental forensics.

Paul W. Locke has been with the Massachusetts Department of Environmental Protection since 1987 and is currently the Acting Assistant Commissioner for the Bureau of Waste Site Cleanup (BWSC), overseeing implementation of the Massachusetts Contingency Plan to assess and clean up disposal sites, the Massachusetts Oil Spill Prevention and Response Act (MOSPRA), and the Natural Resource Damage (NRD) Program. Previously as Division Director for Response and Remediation, Mr. Locke oversaw operational aspects of the state cleanup program (including audits, compliance and enforcement and data management systems) and the Federal Sites section, and also coordinated with other MassDEP programs. Mr. Locke has also served as Director of Policy and Program Development. Before joining Waste Site Cleanup in 2002, Mr. Locke was head of the Risk Analysis Group within the MassDEP Office of Research and Standards, where he participated in environmental policy development and review of site-specific reports, and provided technical assistance to DEP staff and the regulated community. He has participated in numerous revisions to the site cleanup regulations, including the changes that resulted in a semi-privatized cleanup program in 1993. Mr. Locke was the primary author of the rules that determine "how clean is clean enough?" – the regulations on human and environmental risk characterization. Current projects include the development of a comprehensive soil management strategy and the implementation of DEP's vapor intrusion initiatives. Mr. Locke holds a Bachelor's Degree in Chemistry from Harvard College and a Master's Degree in Civil Engineering from the Tufts University program in Public Health.

Eric Lovenduski has been practicing as a geologist for 17 years, with a focus on the vapor intrusion pathway for the past 12 years. He has collected thousands of soil vapor samples and has been involved with the mitigation of dozens of large commercial structures. Eric is a member of the AARST Radon Mitigation Standard work group, the ASTM E-2600 Vapor Encroachment committee, attended the ITRC Vapor Intrusion Classroom Training, and has lead the design team for several state-of-the-art aerated floor vapor mitigation projects. Additionally, Eric holds a National Radon Proficiency Program (NRPP) radon mitigation certification.

Derek Lovley is a Professor in the Microbiology Department at the University of Massachusetts with a research focus on anaerobic microbial processes and their practical applications.

Leah MacKinnon has over 17 years of experience in the United States, Canada, and Europe focusing on remediation of groundwater containing recalcitrant compounds using innovative in situ technologies. Her technical experience involves DNAPL fate and transport in porous and fractured media; site investigation; and the design, implementation, and interpretation of innovative in situ remediation technologies for treatment of a broad suite of contaminants including chlorinated solvents, pharmaceuticals, pesticides, and metals. Her remediation technology experience includes enhanced in situ bioremediation (EISB), in situ chemical oxidation (ISCO), in situ alkaline hydrolysis, zero-valent iron, and monitored natural

attenuation. Ms. MacKinnon has directed, managed, or provided specialist technical support for multiple projects ranging from overall strategy development and site investigation to laboratory treatability studies, remedial design, and implementation.

Brian Magee has over 35 years' experience in toxicology and risk assessment. Dr. Magee directs risk assessment projects for a wide range of industrial and governmental clients and provides senior technical review of projects in which the critical evaluation of toxicological and pharmacokinetic data is essential. Dr. Magee has performed risk assessments of former manufactured gas plants, petroleum refineries, operating chemical plants, landfills, and petroleum spill sites. In addition, he has derived risk-based clean-up criteria for numerous CERCLA, RCRA, and state-listed sites. Dr. Magee has also performed risk assessments for over 20 combustion facilities, which include municipal solid waste combustors, hazardous waste combustors, petroleum- and petroleum coke-fired power plants, coal-fired power plants, cement kilns, and industrial boilers. Additionally, Dr. Magee has provided expert testimony regarding the risks posed by exposure to chlorinated solvents, petroleum mixtures, including creosote, diesel fuel, and fuel oils, chlordane, lead, complexed cyanides, formaldehyde, and other chemicals.

Justin M. Mancovsky is a junior at Worcester Polytechnic Institute. From Lakeville, Massachusetts, he is working towards a Bachelor's Degree in Mechanical Engineering with a concentration in mechanical design.

Tyler Marcet is a current Ph.D. student studying Environmental Engineering at Tufts University. He received his B.S. in Civil Engineering from the University of Maine in 2010 and his M.S. in Environmental Engineering from Tufts University in 2014. His research focus is on the coupling of remedial technologies for enhanced contaminant removal, with emphasis on thermal treatment and bioremediation.

Mike Marley has over 35 years of experience in environmental and civil engineering. Mr. Marley's expertise focuses on strategies for site closure, including the development and application of innovative remediation technologies for contaminated soils and groundwater. He has been at the forefront of developing design and application protocols for a number of in-situ technologies including chemical oxidation and reduction, bioremediation and soil vapor extraction and sparging. Mr. Marley lectures nationally on the design and application of innovative technologies for VOCs, SVOCs and inorganics including metals. He has been responsible for the modeling support, review or design of several hundred pilot and full scale remediation systems as well as the completion of numerous bench scale treatability studies. Mr. Marley performed his doctoral research work and received his M.S. in Civil and Environmental Engineering from the University of Connecticut and his B.S. in Civil Engineering from Queens University in Belfast, Northern Ireland.

Chris Martin has four years of experience in environmental consulting with Geosyntec Consultants in Acton, Massachusetts. He has provided technical support for a diverse range of environmental site assessment and remediation projects, with a particular focus on vapor intrusion assessment and mitigation, hydrogeologic assessment, and implementation of in-situ chemical oxidation (ISCO) remedies. He holds a B.E. in Environmental Engineering from Dartmouth College and an M.S. from Tufts University, where his research focused on development of nanomaterials for sustained control of pH in groundwater.

Gerard Martin has 30 years of combined consulting and regulatory experience. In July 2015, Mr. Martin was appointed as Deputy Regional Director of the Bureau of Waste Site Cleanup (BWSC) in the Massachusetts Department of Environmental Protection's Southeast Regional Office, overseeing the Audits, Compliance and Enforcement/Brownfields, Emergency Response and Site Management Sections. Prior to that, Mr. Martin was the Chief of Brownfields Redevelopment, C&E and Risk Reduction Section in the BWSC in the South Regional Office (Lakeville) of the MassDEP since April 1995. In this capacity, Mr. Martin oversees regional compliance and enforcement efforts, serves as the region's Technical Brownfields Coordinator, and provides supervision and management of risk reduction measures and other selected response actions at more complex sites. More recently, Mr. Martin has been overseeing the workgroup to develop new vapor intrusion guidance for MassDEP. Prior to working at MassDEP, Mr. Martin was Senior Hydrogeologist at SAIC Engineering in Middleboro, Massachusetts and Hydrogeologist at GHR Engineering in Lakeville, Massachusetts.

Kate Martin is the Environmental Risk Assessment Team Lead in Chevron's Energy Technology Company. Her current passion is estimating and communicating all potential consequences of environmental risks: ecological, economic, and financial. In previous roles at Chevron, she managed the environmental research and development portfolio, optimized gasoline blending, and managed the greenhouse gas inventory. She holds a Ph.D. and Master's from the Massachusetts Institute of Technology in Engineering Systems and Technology Management and Policy with focus on the application of environmental economics, environmental engineering, and political science in energy systems. She also has a Bachelor's Degree in Physics from Reed College.

Ben McAlexander is a Contaminant Hydrologist for Trihydro Corporation. He is based in Orono, Maine. He received a B.S. in Environmental Sciences and Engineering from the University of North Carolina and an M.S. in Environmental Engineering from the University of Wyoming. He is a member of the American Institute of Hydrology. His work focuses on site characterization and remedial assessment for large petroleum-affected sites.

Kathleen McCabe is Managing Director of Policy and Practice at HRiA. For nearly ten years, Kathleen has provided both strategic leadership and technical content expertise to HRiA's clients. She leads the organization's smoke-free housing policy work, best practice research in the areas of human health and climate change, transportation, chronic disease prevention, and healthy homes. Her technical assistance and capacity building services reach diverse audiences including businesses, legislators, community developers, public health professionals, and educators. She currently serves on the Steering Committee of the US Climate and Health Alliance. Prior to coming to HRiA, Ms. McCabe worked at the Boston Public Health Commission. She received her Bachelor's Degree in English and Human Development from Boston College in 2002 and a Master's in Public Administration in 2006 from Northeastern University.

Rick McGregor, M.Sc., CGWP, P.Geo. has over 24 years' experience in groundwater and soil assessment and remediation and has worked in over 30 countries. Rick holds an M.Sc. from the University of Waterloo in Hydrogeology and Geochemistry and is a Certified Ground Water Professional in Canada and the United States. He is a Senior Hydrogeologist with InSitu Remediation Services Ltd., based in Ontario, Canada.

Amanda D. McNally, AECOM, is an engineer and project manager with eight years of experience in environmental investigation and remediation, permitting, and compliance. She is the Technical Practice Group (TPG) Coordinator for AECOM's Environment Business Line and has served as leader of the Green & Sustainable Remediation TPG. She served on the Sustainable Remediation Forum (SURF) Board of Trustees from 2013 through 2015. With a B.S. in Civil Engineering and M.S. in Environmental Science and Engineering, Ms. McNally has developed corporate sustainable remediation programs, provided training on the use of environmental footprint tools, and managed environmental investigations and remedy implementation.

Ellen Mecray is the NOAA Regional Climate Services Director for the Eastern Region, based in Taunton, Massachusetts. In this role, Mecray helps bring NOAA's climate information to other federal agencies as well as regional, state, and local geographies and specific sectors of importance to the eastern region. She currently works with the transportation, coastal, public health, marine fisheries, and energy sectors. For almost 20 years, Mecray's teaching, research, and leadership have focused on efficient, cross-sectoral collaboration among inter- and intra-agency partners. Prior to joining NOAA, Mecray was an oceanographer with the US Geological Survey's Coastal and Marine Geology program. Her work is published in a number of research journals. Mecray is also an accomplished educator, teaching oceanography, chemistry, and environmental science at the secondary level prior to joining the federal service. Mecray holds a Bachelor's Degree in Geology from Colgate University and a Master's Degree in Geological Oceanography from the University of Rhode Island.

Will Moody has over 15 years of environmental consulting, project management, and site remediation experience. For the last 10 years, he has been working with Geo-Cleanse's remedial design and implementation departments, as well as focusing on global business development. Will has designed and managed a wide range of in-situ chemical remediation projects, which have utilized many reagents including hydrogen peroxide, permanganate, persulfate, and zero valent iron. His programs have

addressed a variety of contaminants including chlorinated solvents, petroleum hydrocarbons, MGP constituents, and NAPLs. Mr. Moody has supervised two of the largest in-situ chemical oxidation projects in the U.S. and has been involved with several projects in Europe. His role at Geo-Cleanse also includes field operations, site analysis, and laboratory studies. Mr. Moody is currently a Project Manager and the Director of Sales and Marketing for Geo-Cleanse. Mr. Moody has a B.S. in Environmental Science from Virginia Polytechnic Institute and State University.

Ellen Moyer is an environmental engineer with a B.A. in Anthropology, M.S. in Environmental Engineering, and Ph.D. in Civil Engineering. She is a registered Professional Engineer and U.S. Green Building Council LEED Accredited Professional with 30 years of experience. Since 2004, she has worked in her own consulting practice for public and private clients on projects to assess and remediate soil and groundwater contamination and protect resources from new environmental problems. She writes on sustainability issues for *The Huffington Post* and is currently working on her third book, for a non-technical audience, which is about how to have fun creating a sustainable world.

Rangaramanujam Muthu is a registered Professional Engineer with over six years of experience in life cycle management of sites impacted with NAPL (e.g. petroleum hydrocarbons, chlorinated solvents) at various stages of evaluations. His projects have included active and former petroleum refineries and terminals, pipeline release sites, underground storage tanks, natural gas processing plants, and tank farms, regulated under various federal and state programs. Dr. Muthu has conducted NAPL nature and extent studies, NAPL mobility and recoverability field investigations and modeling, risk assessment and vapor intrusion analyses, data analytics, statistical analysis and interpretation of a wide range of environmental data, guidance document development and training for software, and report preparation consistent with state and federal environmental regulations. Dr. Muthu is a co-author / co-developer of the American Petroleum Institute software and guidance for the calculation of LNAPL transmissivity from LNAPL bail-down and manual skimming tests for unconfined, confined, or perched LNAPL. In addition, Dr. Muthu has assisted with the development of ASTM International guidance on estimation of LNAPL transmissivity and LNAPL conceptual site model development.

Jonathan Myers has a Ph.D. in Geochemistry plus 34 years of environmental consulting experience. His specialties include geochemical modeling, environmental forensics, natural attenuation investigations, and the use of geochemical evaluations to distinguish between contamination versus naturally high background concentrations of elements in groundwater, surface water, sediment, and soil. Dr. Myers has authored over 30 peer-reviewed research papers and book chapters, and has taught short courses on geochemical and environmental forensic techniques.

Marc A. Nascarella is the Chief Toxicologist and Director of the Environmental Toxicology Program at the Massachusetts Department of Public Health (MDPH) where he directs a team of scientists responsible for evaluating the safety of contaminants in food, environmental media (e.g., air, water, soil), and consumer products in the Bureau of Environmental Health (BEH). Dr. Nascarella also oversees technical staff supporting regulatory activities associated with the medical use of marijuana, recreational water quality, and the environmental monitoring of radionuclides. He serves as the Principal Investigator on the MDPH Biomonitoring Massachusetts Study as well as a PI on federal grants and cooperative agreements related to state-based biomonitoring, water quality surveillance, and climate change assessment. Dr. Nascarella is a board certified public health professional (CPH) with an M.S., Ph.D., and post-graduate training in Toxicology. His professional work has been published in peer-reviewed journals and books, and has been presented at local, national, and international professional meetings. This research has been recognized with awards from the National Academy of Sciences, Society of Toxicology, Entomological Society of America, Society for Risk Analysis, and the International Dose-Response Society. In addition to public service, Dr. Nascarella has previously held positions in the active-duty military, academia, and private sector. He currently serves as an Adjunct Professor at the University of Massachusetts School of Public Health and Health Sciences.

Roya Nazari is a fourth year Ph.D. student at Northeastern University studying Civil and Environmental Engineering. Her research focus was to: design electro-chemical testing reactor to test different remediation technologies to treat contaminated sites, especially in Puerto Rico; evaluate Electro-Fenton (EF) and Sono-Electro-Fenton (SEF) processes for groundwater remediation; design and enhance the

electrochemical system to fate and transport a wide variety of contaminants such as TCE, Chlorobenzene; perform experimental study including batch and flow-through tests on Chlorobenzene in an electrochemical system in the presence of Palladium pellets as a catalyst; and analyze and interpret the experimental data to understand the efficiency of current designed system for remediation of contaminated sites. She received her M.Sc. in Civil and Environmental Engineering at City College of New York. Her research focus was on "Monitoring of Lake Ice Phenology in Northern Hemisphere" and she and others generated long-term series of ice coverage and extract any eventual climate change impact. She received her B.Sc. in Agricultural Engineering (Pedology) at Iran, Azad University of Savadkooh.

Charles J. Neslund is the Technical Director at Eurofins Lancaster Laboratories Environmental, LLC, where he has worked for over 30 years, and he previously managed the Pesticide Residue group and the GC/MS Semivolatiles group. Mr. Neslund is responsible for the HRGC/HRMS laboratory, the LC and GC Triple Quad section and the Method Development group of the Environmental Division. His responsibilities include management of dioxin/furan and PCB congener analysis on water, soil and tissue samples. He oversees the development of methods that employ LC/MS/MS and GC/MS/MS towards the analysis of a broad range of environmental contaminants. His responsibilities also include the development and validation of methods that are required to comply with ISO 17025, GLP and FIFRA data submission requirements. Mr. Neslund also serves as lead technical contact for evaluation of RSK175 applications, implementation of discrete analyzer chemistries, tracer compound applications and applications of alternative sample preparation/digestion technologies. Mr. Neslund holds a B.S. in Chemistry from University of Pittsburgh (1982) and conducted graduate work in Organic Chemistry at the University of Pittsburgh (1982-1984).

Eric M. Nichols, PE, is a principal at Substrata LLC in Newfields, New Hampshire. He has characterized and remediated contaminated sites since 1985. Before founding Substrata in 2014, he was National Technical Manager for Remediation at Arcadis. Eric serves as a technical strategist for site characterization, remediation, natural source zone depletion, vapor intrusion, and litigation support. Eric has taught short courses for several organizations, including the U.S. Environmental Protection Agency, the National Ground Water Association, the American Society for Testing and Materials, the New England Interstate Water Pollution Control Commission, the American Petroleum Institute, and the University of California Extension. Eric has contributed to ITRC documents and training since 1998 as a member and trainer for the Fuel Oxygenates, LNAPL, and Petroleum Vapor Intrusion Teams. Eric earned a Bachelor's Degree in Civil Engineering from the University of California, Berkeley, in 1982 and a Master's Degree in Civil Engineering from the Massachusetts Institute of Technology in 1985. He is a licensed professional engineer in California.

Jim Occhialini is a Vice President of Technical Sales with Alpha Analytical, and he serves as the Product Line Manager for the laboratory's ecological/human health risk assessment and dredging project applications. Jim has over 35 years of environmental analytical and consulting experience working on a wide range of project applications. Jim is very active with a number of regulatory workgroups and industry associations.

John M. O'Donnell is a Deputy Director in the Commonwealth of Massachusetts's Division of Capital Asset Management and Maintenance. Mr. O'Donnell is responsible for managing environmental matters for DCAMM including regulation compliance, remediation, and demolition projects. Prior to joining DCAMM in 1997, Mr. O'Donnell was a consulting engineer involved in environmental investigations, designs, and implementation of remediation technologies and geotechnical engineering. Mr. O'Donnell received his Bachelor of Civil Engineering in 1978 and his Master of Engineering Degree in 1980; both from Drexel University. Mr. O'Donnell is a Licensed Site Professional and is registered as a Professional Engineer in Massachusetts.

Theresa Oteng Apreku received her undergraduate training at Kwame Nkrumah University of Science and Technology (KNUST). She was among the top 10% of the 2012 graduating class of Geographers. She was later retained by her department to serve in the capacity of a Teaching Assistant to Mr. Koomson, the former Head of Department, and Dr. Forkuor. During this period, she worked as an Assistant Researcher to Dr. Forkuor on sustainability issues especially in rural areas. Several projects

were designed to help alleviate the abject poverty that was going on in various communities in Ghana. One such project was the provision of a concise literature on the availability and potential of generating energy from liquid waste. This research was widely successful and is currently being considered by the authorities. Miss Theresa is working towards helping her community by providing brilliant and feasible ideas that ultimately protect the environment. As such, she sees herself as an environmental activist and prides herself in a four-year campaign she spearheaded with the aim of educating the youth in the villages on protecting their environments. She has also attended several 'green' seminars, such as one organized by Agro Mindset Summit on the theme 'fork-to-field', a seminar organized to inculcate in the youth the need to efficiently use natural resources for national development. She has also participated in several international conferences, including Offshore Technology Conference which was held in Malaysia earlier this year. It served as a global provider of technology where cultural and geographical diversity fosters collaboration and innovation. She is currently pursuing her Master's Degree in Environmental Science and Engineering at Hohai University. Her research interests lie in environmental protection and sustainability (GIS-oriented), mycoremediation (currently working in that area) and proactive environmental policies. She hopes to garner practical experience combined with an in depth knowledge during her graduate years and beyond. She is of the view that knowledge has no boundaries or limits and will continually strive to be the best in her chosen field.

Sheree Pagsuyoin is an Assistant Professor at the Department of Civil and Environmental Engineering at UMass Lowell. Her research interests are in the areas of surface water quality modeling, water treatment, and environmental health and sustainability. Her current research projects focus on the fate and transport of emerging contaminants, low-cost water treatment technologies, and drought impact management.

Frank R. Peduto, P.E. has been a Senior Environmental Engineer with Spectra Environmental Group in Latham, New York, for the last 13 years. He has a B.S. from the University of Rhode Island in Civil Engineering. He worked for over 30 years with the New York State DEC in the Oil Spill Remediation Group and has authored several spill policy regulations and guidance criteria. He is a member of the Science Advisory Board for the AEHS Foundation's Annual International Conference on Soils, Sediments, Water and Energy at UMass Amherst.

Michael Dominic Persson is a senior at SUNY-ESF where he is earning a B.S. in Environmental Health Science with a focus in food protection. He is interested in helping create a food secure future for everyone utilizing sustainable and environmentally conscious efforts. His past experience includes working as research intern in the Center for Environmental Systems Engineering (CESE) lab at Syracuse University, working with mercury contamination in fish from New York State; serving as a professional intern at FPM Remediations in Oneida, New York, aiding a litigation team working with Manufacture Gas Plants (MGPs); and working as a specialist intern at the United States Environmental Protection Agency – Region 7 assisting the Resource Conservation Pollution Prevention section in sustainable food waste projects. At SUNY-ESF, he is a cross country runner for the Men's Mighty Oak Cross Country team, has been a captain for two years, and is an aspiring cross country/track & field coach. Born and raised in Denville, New Jersey, Michael can only solve the white face of a Rubik's Cube, listens to the Diane Rehm Show on National Public Radio (NPR), and enjoys playing catch with his lacrosse stick with anyone.

R. Paul Philp received his Ph.D. in Organic Chemistry from the University of Sydney (Australia) in 1972 and a D.Sc. Degree from the same University in 1998. He spent one and a half years as a post-doctoral fellow with Professor G. Eglinton at the University of Bristol (England) undertaking research in various aspects of organic geochemistry and the application of analytical techniques such as gas chromatography-mass spectrometry to this area of research. Following this he spent four years at the University of California, Berkeley as a research associate, directing the organic geochemistry research group of Professor Melvin Calvin. He returned to Sydney in 1977 to join the CSIRO, Fuel Geoscience Unit, now part of the Division of Fossil Fuels, where he was a principal research scientist studying various aspects of petroleum geochemistry. In June 1984, he joined the faculty at the University of Oklahoma. Recently, a large amount of his research has been concerned with environmental studies, particularly investigating the use of stable carbon isotopes as a means of monitoring and tracking pollutants in the environment. He became an Emeritus Professor at the University in January 2015 but continues to have

an active research program in petroleum and environmental geochemistry in the School of Geology and Geophysics.

Thomas M. Potter has over 24 years of experience working in the field of waste site cleanup, and currently serves as the Statewide Clean Energy Development Coordinator for the Bureau of Waste Site Cleanup at the Massachusetts Department of Environmental Protection (MassDEP) in Boston. In conjunction with the Massachusetts Department of Energy Resources (DOER) and the Massachusetts Clean Energy Center (MassCEC), Mr. Potter ensures project-specific support and coordination of parties seeking to develop renewable energy and energy efficiency projects in Massachusetts, provides for regulatory review and streamlining, develops policies and practices to review and assess clean energy opportunities, and provides broad public education and engagement for clean energy development opportunities in Massachusetts. Prior to this role, Mr. Potter served on the MassDEP's Commissioner's Office Environmental Innovations Team to help advance some of the Commissioner's priorities in the areas of expanding innovation and energy-environmental coordination across MassDEP programs and regions using innovative and efficient approaches to the agencies' environmental protection programs. Prior to his help with this team, Mr. Potter served for 10 years as the Statewide Audit Coordinator for MassDEP's Bureau of Waste Site Cleanup Audit Program in Boston. As the Statewide Audit Coordinator, he was responsible for the implementation and operation of the legislatively mandated Audit Program, as well as the legislatively mandated audit of Activity and Use Limitations by the 1998 Brownfield's Legislation. Prior to joining the MassDEP, Mr. Potter worked throughout New England as an environmental consultant in the private sector for over five years, concentrating primarily on sites regulated under the Massachusetts waste site cleanup program. As an Adjunct Professor, Mr. Potter completed a semester of instruction on the Massachusetts waste site cleanup regulations at the University of Massachusetts in Boston. Currently a resident of the City of Boston, Mr. Potter holds a B.S. in Geography from Arizona State University in Tempe.

Paul Price serves as Computational Exposure Scientist at EPA's Office of Research and Development at the National Exposure Research Laboratory in North Carolina, where he is working on improving methods for conducting chemical health risk assessment. Prior to his service at EPA, Dr. Price had a long and distinguished career as a risk assessor in government, private industry, trade associations and at several consulting firms, where he pioneered and developed probabilistic risk assessment techniques. In addition, he is recognized as a national expert on pesticide exposure assessment and innovative methods for assessing non-cancer risks. Dr. Price has authored numerous scholarly papers, given hundreds of professional presentations on risk-related topics, and served on a number of panels and task forces related to matters of exposure and toxicity assessment.

Amy Quintin is a human health risk assessor with over 12 years of consulting experience both nationally and internationally. Ms. Quintin has performed numerous multi-pathway and multi-media human health risk assessments, often focusing on international MGP and retail petroleum sites. She is competent in current risk assessment techniques, including vapor intrusion and petroleum hydrocarbon assessment. She has also worked under CERCLA, RCRA, and various state programs within the US, as well as several international programs. Ms. Quintin has also frequently performed relevant research to support human health risk assessment work, and has provided technical support and both national and international risk assessment training.

Ljiljana (Lily) Rajic is an Associate Research Scientist at the Northeastern University, Boston, Massachusetts (2013-present). She is working on advancing the electrochemical oxidation and reduction of trichloroethylene (TCE) in flow-through systems. Her research is a part of a Superfund Research Program called PROTECT, which focuses on sustainable and environmentally-friendly technologies for groundwater remediation. Lily received her Doctorate in Chemistry (2007-2010) from the Faculty of Sciences in Novi Sad, Republic of Serbia. Her doctoral research was focused on electrochemical treatment of contaminated heterogeneous materials.

Regina Rancatti is currently the Lab Manager of a Geosyntec Consultants field laboratory that analyzes soil samples for mercury on a remediation site. She uses her academic and research experience in the biological and chemical sciences to ensure quality and efficiency in the field laboratory.

Catherine Ratté works as a Principal Planner and Section Manager of the Land Use/Environment section of the Pioneer Valley Planning Commission (PVPC). Catherine is an experienced Manager establishing connections and collaborations across disciplines with a focus on sustainability and an emphasis on equity—leading efforts to engage populations too often left out of planning processes in a regional sustainability planning and doing process. Catherine specializes in inter-disciplinary initiatives at the intersection of health, land use, climate action, and transportation planning, and is an expert in hazard mitigation. Catherine's been with the PVPC for 18 years. Previously she worked for the Wisconsin Department of Transportation, the United States Peace Corps in Cameroon, and the Wisconsin Coalition Against Sexual Assault. Catherine earned Master's degrees in Urban and Regional Planning and Social Work from the University of Wisconsin-Madison and has an undergraduate degree in Literature and Society from Brown University. She lives in Springfield with her teenage daughter.

Dick Raymond is the President of Terra Systems, Inc., which is a bioremediation products and services company that is celebrating its 24th anniversary. During the past 30 years, he has designed and managed numerous successful in-situ and ex-situ soil and groundwater remediation projects in the United States, Brazil, Japan, and Europe. Dick co-founded Biosystems, Inc., the first environmental bioremediation company in the United States, in 1984. The other co-founder is Dick Raymond, Sr., who authored the first in-situ bioremediation patent in the U.S. in 1971. Working together, Dick Raymond Jr. and Sr. proactively commercialized practical aerobic bioremediation technology solutions in the 1980's. Biosystems was later purchased by the DuPont Co. and renamed DuPont Environmental Remediation Services (DERS). During the past two decades, Dick Raymond Jr. has been an active participant in the development of advanced anaerobic bioremediation technology solutions. Dick is a co-founder of the Remediation Partners Consortium, a strategic alliance of complimentary remediation technology solution providers. He is also an affiliate member of the Alliance of Hazardous Materials Management Professionals (formerly the Academy of Certified Hazardous Materials Managers), and is a contributing member for the Sustainable Remediation Forum (SURF).

Lisa Reyenga is an Engineer with GEI Consultants specializing in site remediation and characterization at petroleum sites. She specializes in life cycle management of NAPL remediation sites from initial investigation, through remediation system design and evaluation, to site closure. Lisa has experience with remediation of large, mixed plumes under complex hydrogeological conditions at active refinery and terminal sites. She has executed the design and interpretation of hydrogeological investigations using methods such as vertical profiling tools, slug and pumping tests, and NAPL transmissivity tests. In addition, she performed analyses to optimize NAPL recovery and evaluated systems for shutdown based on hydraulic recovery endpoints, mass flux/mass discharge of dissolved phase contaminants, and natural source zone depletion. Lisa integrated these results into data visualizations and conceptual site models for technical and non-technical audiences to communicate the results and the revised site strategy to clients and regulators.

Andy Rezendes has over 25 years' experience in environmental analytical chemistry, over 10 years of which are specific to air analysis. He was formerly the manager of ENSR's Air Toxics Lab and is currently the Technical Director for air testing services at Alpha Analytical located in Massachusetts, where he started their air testing operation in 2002. While at Alpha, Andy has conducted research in sulfide and mercaptan analysis, a comparative study involving the measurement of naphthalene in ambient air and background VOCs related to vapor intrusion investigations in both residential and commercial buildings. He is currently involved in vapor intrusion coursework sponsored by the Massachusetts LSP Association, and recently participated in the development of the ITRC Petroleum Vapor Intrusion Guidance document. He has a B.S. in Chemistry from UMass-Amherst and Master's level coursework in Environmental Engineering from Northeastern University.

David W. Rich is the President and founder of Geotech Computer Systems, Inc. Dr. Rich has a B.S. in Geology from the University of Notre Dame, and an M.S. and Ph.D. in Geology from The University of Illinois. He combined his interest in computers and his knowledge of the earth sciences industry in 1986 to found Geotech Computer Systems. He has over 30 years of experience in the petroleum, mining, and environmental industries, having worked for Texaco (now Chevron), Shell, Sabine Corporation, and Grant Environmental/Scientech in addition to Geotech. With Geotech, Dr. Rich has worked with well-known

corporations; federal, state, and local governments; and small businesses. He is a recognized expert in the field of earth science computing and environmental database management. In 1982, Dr. Rich co-founded C.O.G.S., the Computer Oriented Geological Society, an early leader in promoting earth science computing. He is the author of the book *Relational Management and Display of Site Environmental Data*, from CRC Press/Lewis Publishers. He is a member of a number of local and national earth science organizations, and trains and speaks extensively on environmental software technology and other earth science computing topics.

Romain Rodrigues is a second year Ph.D. student at BRGM, the French geological survey.

Jay Romano is a New England Office Manager/Chemist who has over 18 years of experience in the environmental industry with 16 years' experience in environmental remediation. He has designed and managed over 300 projects in New York, New Jersey, Florida, Minnesota, Alaska and the New England area. He has experience with the injection of sodium persulfate, permanganate, Oxygen BioChem (OBC®), steam, hydrogen peroxide and calcium polysulfide.

Chapman Ross is a Senior Engineer at Geosyntec Consultants with over 15 years of experience in remediation design, including in situ chemical oxidation, in situ chemical reduction with zero-valent iron, enhanced in situ bioremediation, soil vapor extraction, and air sparging treatment technologies. Mr. Ross is an expert in treatment methods for low-permeability source zones.

Margaret Round is Chief of Air Toxics in the Massachusetts Department of Public Health/Bureau of Environmental Health's (MDPH/BEH) Environmental Toxicology Program (ETP). The ETP evaluates acute and chronic health impacts associated with chemical contaminants that may be present in a variety of environmental media including air, water, soil, fish, and some consumer products. The program also takes the Bureau's lead on evaluating health effects associated with climate change and conducting Health Impact Assessments (HIAs). She has over 25 years of experience in working on health impacts and related regulatory issues associated with exposure to air pollutants including air toxics. Ms. Round was the project manager of a large-scale health study of Logan Airport in Boston. She is currently working with Massachusetts Department of Transportation to develop guidelines on the use health impact assessment in transportation planning studies. She is also co-Principle Investigator for a cooperative agreement related to adaptation to climate change. Ms. Round has a B.S. in Toxicology from Northeastern University (1984).

Betsy Ruffle is a Senior Risk Scientist with AECOM's Risk Assessment Technical Practice located in the Chelmsford, Massachusetts office. She has over 25 years of experience providing human health risk assessment consulting services to clients throughout the US and internationally. She regularly applies risk-based techniques to develop health-protective and sustainable solutions to a broad range of environmental exposure issues ranging from simple screening assessments to complex modeling analyses. Her particular expertise is evaluating health risks from exposure to chemicals that bioaccumulate in the food chain, including fish. Betsy holds a B.A. in Biology from Vassar College and an M.S. in Environmental Health from Tufts University.

Tarek Saba is a Principal Scientist at Exponent's Environmental and Earth Sciences practice. Dr. Saba provides consulting and expert analyses and support in matters involving allocation of contamination and liability, natural resource damage assessments (NRDA), insurance remedial cost recovery claims, Superfund (CERCLA) liability, and claims of contamination from hydraulic fracturing. He uses his 16 years of experience in chemical forensics and fingerprinting, hydrogeology, and fate and transport analysis to reconstruct history of releases of petroleum hydrocarbons (LNAPL), petroleum additives (e.g., MTBE), tar and creosote (DNAPL), polycyclic aromatic hydrocarbons (PAHs), chlorinated solvents (PCE, TCE and their degradation products), polychlorinated biphenyls (PCBs), and dioxins and furans (D/F), among other chemical groups. Dr. Saba has assisted and advised clients in cases involving waterway sediment sites, landfills, petroleum refineries, hydraulic fracturing, manufactured gas plants (MGPs), pulp and paper mills, salvage yards, and manufacturing facilities, among other industrial setups. His scientific focus has been on the environmental contamination of soils, sediments, groundwater, and air, and the relationship between today's contamination and historical waste practices and standard of knowledge. In addition, Dr. Saba's expertise includes conducting detailed technical reviews of expert reports. Dr. Saba

earned a Ph.D. from the University of Colorado at Boulder and worked on groundwater remediation technology development as a subcontractor for the U.S. Environmental Protection Agency before starting his consulting practice.

Geoff Schwartz is a Senior Project Manager with GZA and has over 15 years of experience in the geo-environmental and geotechnical engineering fields, including over seven years of MGP remediation experience in New England and New York. His experience in the remediation field includes investigations, pilot studies, alternatives analysis, design, construction, and construction management. Geoff has worked on implementation and evaluations of several remediation technologies, including solidification/stabilization, slurry trenches, groundwater interceptor trenches, dredging, dewatering of sludge and soft sediments, landfill closures, excavation and source removals, grouting, soil mixing, and thermal treatment. Geoff is a Professional Engineer registered in Massachusetts and New York. He serves on the Executive Board of the Boston Society of Civil Engineers (BSCES).

Michael Sequino, E.E., is a Chief Technical Officer. He has 29 years' experience, and holds a B.S. in Electrical Engineering from Northeastern University. Mr. Sequino is co-founder and Principal Engineer at Directional Technologies. He began his career drilling in the oil fields of the Gulf of Mexico and the North Sea. His technical training and experience provided him with an excellent foundation in the practical knowledge of geology and formations. As Principal Engineer, Mr. Sequino is responsible for providing each client with site-specific, cost-efficient, premium quality horizontal well systems. He provides design support consulting and construction review to engineering firms and consultants as well as site supervision for complex installations. He has installed over 800 horizontal wells for remediation and utility applications. He has worked closely with regulators at State and Federal Superfund sites and is familiar with all phases of the regulatory process.

Rui Shen is a Researcher at Brown University working on vapor intrusion since 2009. Dr. Shen specializes in numerical and analytical modeling and data analysis. She has published and co-authored over 14 journal papers in top environmental journals. She has developed several original models to simulate various aspects in vapor intrusion. She welcomes the opportunities to talk to other professionals.

Thomas (Tom) Silverman has over 16 years of experience in hydrogeology and environmental management. He is experienced in implementation of environmental investigations, feasibility studies, and remedial design at environmental cleanup sites. He has worked on a diverse range of projects at petroleum, chemical, manufacturing, landfill, and munitions facilities, many with complex settings including fine-grained soils, sediments, and fractured bedrock. Tom has managed and been the technical lead on dozens of site assessment and remediation projects for contaminants including non-aqueous phase liquids (NAPLs), metals, chlorinated solvents, pesticides, and PCBs throughout the US and internationally. Tom's current role as the Remediation Service Line Manager involves the technical and administrative management of EHS Support's largest business line, ensuring quality deliverables and performance on projects and portfolios within the service line.

Michele Simoneaux, PWS is Senior Wetlands Scientist/Senior Technical Specialist at GZA, an engineering and environmental consulting firm, in Norwood, Massachusetts. She has spent the last nine years of her 21-year professional career at GZA specializing in the intersection of wetlands ecology, environmental regulations and helping clients negotiate the permitting process in various states in New England. She holds a Master's Degree in Conservation Biology from Antioch University New England (1999) and a Bachelor's Degree in Environmental Studies from University of North Carolina-Asheville (1993). She has extensive experience conducting complex coastal and inland wetlands assessments and wildlife habitat evaluations and a proven track record of obtaining local, state and federal level environmental permits on behalf of clients for a wide diversity of projects. Many of her projects involve designing wetlands replication and restoration for the purposes of environmental remediation under the Massachusetts Contingency Plan (MCP). She also serves as a member of the Southborough (Massachusetts) Conservation Commission and is an active member of the Society of Wetlands Scientists.

Tiffany Skogstrom is the Outreach & Policy Coordinator for the Massachusetts Office of Technical Assistance (OTA). Her toxics use reduction and occupational health experience includes creating a program to improve the work environment for auto shop and nail salon workers through the Boston Public Health Commission's Safe Shops and Safe Nail Salon Projects. Throughout her career, Tiffany has worked with various environmental and nonprofit organizations on waste reduction, recycling and pollution prevention campaigns. Tiffany graduated from the Boston University School of Public Health where she concentrated in Environmental Health and was awarded the William B. Patterson Memorial Award for Excellence in Environmental and Occupational Health. She is also a 2006 Environmental Leadership Program Fellow and 2011 Fellow of the University of California San Francisco Program on Reproductive Health and the Environment's Reach the Decision Makers Program.

William Slack has been one of the principals of FRx, Inc. since its inception over 20 years ago. In addition to managing the business, his focus has been the development and refinement of injection processes to support in situ remediation of contaminated soil, bedrock, and groundwater. Bill and FRx co-founder Larry Murdoch conducted the first application of fracturing at a contaminated site, and their names appear in the earliest and key publications concerning enhancement of remediation processes. Bill holds degrees in Chemical Engineering from Cornell University and Carnegie Mellon University and is a Licensed Engineer in multiple states.

Brant Smith is the Technical Applications Manager for in situ chemical oxidation (ISCO) technologies at PeroxyChem. With over 15 years of experience, Dr. Smith has designed and implemented numerous field applications and bench scale tests involving ISCO, in situ bioremediation, in situ chemical reduction, and metals stabilization. He has made over 60 presentations at national and international conferences, and his research has been published in journals including *Environmental Science and Technology*, *Journal of Contaminant Hydrology*, *Environmental Toxicology and Chemistry*, *Journal of Environmental Science and Health*, and *Journal of Environmental Engineering*. Dr. Smith has been a co-Principal Investigator for a research grant (ER-2132) awarded by through the Strategic Environmental Research and Development Program (SERDP) and is a chapter co-author for the book *In Situ Chemical Oxidation for Groundwater Remediation* (Siegrist et al., 2011). Dr. Smith obtained a B.S. in Civil and Environmental Engineering and Economics from Worcester Polytechnic Institute, and an M.S. and Ph.D. in Civil Engineering from Washington State University. He is a registered Professional Engineer in Washington State.

Dan Socci is the CEO of EthicalChem and responsible for all aspects of company operations. EthicalChem develops and markets innovative, high-performing chemical products for the environmental and oil industries. The company specializes in advanced solutions for destroying environmental contaminants, particularly heavy hydrocarbons such as creosote and MGP coal tar, and increasing oil well production. EthicalChem's patented remediation technologies portfolio includes Surfactant-Enhanced In Situ Chemical Oxidation (S-ISCO) and Surfactant Enhanced Product Recovery (SEPR), which are field proven products optimized through years of field implementations. Previously, Dan held senior management positions at VeruTEK Technologies, a remediation chemical products and services company, and Hewlett Packard Services.

Ravi Srirangam has over eight years' experience in the design and implementation of remediation technologies related to in situ chemical oxidation, in situ chemical reduction, enhanced biodegradation and heavy metals complexation/stabilization. His research experience includes enhanced anaerobic biodegradation of Polychlorinated Biphenyls (PCBs) in contaminated sediments using zerovalent iron (ZVI) and hydrogen, and bioavailability and risk assessment of PCBs in contaminated sediments. As part of PeroxyChem since March 2014, Srirangam's principal focus areas include being Product Line Leader for PermeOx and Klozur CR technologies to address petroleum hydrocarbons in groundwater, and providing on-site support for remedial efforts focused on soil, sediment, wastewater and groundwater environments.

Vipul J. Srivastava is the Technology Fellow and the Practice Leader of Site Remediation and Revitalization at CH2M with over 35 years of experience in the environmental and site remediation area. He has a significant experience in the site remediation field, and has several U.S. patents and peer reviewed publications related with innovative remediation technologies. Prior to serving as the

Technology Fellow at CH2M, Mr. Srivastava was the Senior Technology Director at Parsons and Director of Environmental Science and Technology at Gas Technology Institute.

Scott Stout (Ph.D., Penn State) is an Organic Geochemist and a Founding Partner with NewFields, located in Rockland, Massachusetts. He has 28 years of industry and consulting experience and has authored or co-authored over 150 papers, including co-editing three volumes devoted to oil spill forensics. His research has provided a basis for property management decisions and environmental liability allocation for both government and commercial clients, ranging in scale from UST sites to the BP Deepwater Horizon oil spill.

Eric Suuberg has been Associate Director of the Brown Superfund Research Program (SRP) since its inception, also serving as a Project Leader and Research Translation Core Director in that Center. A registered Professional Engineer, he is also a frequent consultant on problems related to environmental pollution and its causes. He is a Fellow of the American Chemical Society, in which he serves as a Trustee of the Energy and Fuels Division. Prof. Suuberg serves as a principal editor of the journal *Fuel*. His research focus has been in the areas of chemical thermodynamics, kinetics and transport. Recently, this has involved experimental examination of thermodynamic properties of relevance to fate and transport processes for organic contaminant mixtures such as tars, oils and halogenated hydrocarbons. He has also been actively involved in studying the processes that characterize the vapor intrusion process, and leads a group that has been developing mathematical tools for describing this problem.

Lindsay Swearingen is Managing Partner and Principal Scientist at Specialty Earth Sciences. Her duties include experimental design regarding site specific bench scale studies, technology development, and product optimization. She is the co-developer of Sustained Oxidation and Controlled Oxidant Release Encapsulant technologies (SOCORE) as well as Directionally Drilled Permeable Reactive Barrier technologies. Dr. Swearingen holds a B.S. and Clinical Doctorate from Indiana University and has pursued her interdisciplinary Ph.D. from the University of Louisville, focusing on Environmental Toxicology.

Frederick R. Symmes is a Senior Technical Director with Weston Solutions, Inc. in Concord, New Hampshire. His expertise includes a wide range of technologies for remediation of soil and groundwater. He has designed, constructed, and operated remediation systems at numerous contaminated sites throughout the United States as well as overseas. In the USA, Mr. Symmes has implemented cleanups at many high-profile Superfund sites. Internationally, he has designed several major remediation systems, including one of the world's largest air sparging/soil vapor extraction systems at the former Kai Tak International Airport in Hong Kong. Mr. Symmes' expertise includes sustainable remediation, including the use of solar energy to power the cleanup of contaminated sites. Most recently Mr. Symmes has constructed and is operating a 150-KW solar photovoltaic system to fully power the groundwater treatment system at the ReSolve Superfund Site in Massachusetts.

Philip J. Tackett, Ph.D., is the Product Manager for the Mass Spectrometry vertical within FLIR Detection. He earned his Ph.D. in Analytical Chemistry from Purdue University in 2008, studying the vertical extent of halogen chemistry in the Arctic troposphere. He has participated in development efforts for the next generation of explosive trace detection equipment, and worked in the integration of outside-the-laboratory mass spectrometers into a variety of applications, including environmental monitoring, critical infrastructure protection, sensitive site exploitation, and forensic analysis.

Art Taddeo is a Senior Program Manager and Technical Lead for AECOM. He has 30 years of experience in developing and implementing remediation technologies at a variety of sites around the globe. He manages complex multi-disciplinary projects and programs, and provides technical support on innovative remediation activities. His work has included industrial, commercial, and military facilities at the private, state, and Superfund levels. His expertise has included treatment of chlorinated solvents, fuels, coal tars, pesticides and other chemicals using a variety of innovative remedial solutions. Mr. Taddeo has authored or co-authored a number of papers, technical presentations, and governmental agency Engineer Manuals and State of the Practice documents. Art's expertise includes bioremediation and in situ thermal treatment. He has focused his attention in the last several years on a number of complex in situ thermal projects and currently coordinates AECOM's in situ thermal practice area.

Fabio Tatti graduated with a degree in Environmental Engineering in July 2014 from “La Sapienza” University of Rome. Since September 2014 he has been a Ph.D. student in Environmental Engineering at DICEA, “La Sapienza” University of Rome. Presently, he is studying flux and contaminant transport in saturated porous media. In particular, the research concerns the back-diffusion phenomena from low permeability layers in aquifers, focused on modeling the phenomena and improving the remediation treatments.

Chris Teaf is a toxicologist, risk assessor, and public health specialist. Dr. Teaf is Director Emeritus of the Florida State University Toxicology Program within the Center for Biomedical and Toxicological Research, where he served for over 35 years and where he remains affiliated. He has broad environmental and public health experience in soil, water and air quality; risk assessment; and environmental health including solvents, metals, petroleum, pesticides, particulates, and microbiota. He is Board-certified by the Academy of Toxicological Sciences. His experience includes industrial facilities, agricultural sites, waste management facilities, educational institutions, and products in general commerce. Chris has directed research and taught environmental toxicology and risk assessment courses for the private sector as well as for USEPA, the World Health Organization, NATO, U.S. Air Force, ATSDR, and many state/local agencies. He presently is Co-Editor-in-Chief for the international journal *Soil & Sediment Contamination*, and is Associate Editor for *Human & Ecological Risk Assessment*, an international journal. He has served on Technical Advisory Committees for many environmental symposia in the US, Europe and Central Asia. He has provided toxicology and health testimony for state or federal courts and agencies for three decades.

Erich Thalheimer is the National Technical Specialist for Acoustics and Vibration with the international engineering and environmental firm, WSP | Parsons Brinckerhoff. He has been practicing acoustics for over 30 years and is Board Certified by the Institute of Noise Control Engineering. After graduating with a degree in Mechanical Engineering from UMass Amherst in 1984, he joined Bruel & Kjaer Instruments as a National Applications Engineer. Since the early 1990s, he's been doing acoustical consulting work with firms such as BBN, Louis Berger, Parsons Brinckerhoff, and occasionally on his own. He is nationally renowned in the area of construction noise, and has won several independent awards for his work. Noteworthy projects include having managed the noise control program for the Big Dig Project in Boston, having developed the FHWA Roadway Construction Noise Model, and having written the construction noise regulations for New York City.

Katie Theoharides is the Director of Climate and Global Warming Solutions at the Executive Office of Energy and Environmental Affairs. Theoharides spent the last six years running an environmental consulting business and before that was Executive Director of a Massachusetts land trust. She worked on climate adaptation and environmental policy at Defenders of Wildlife, where she also served as a policy expert on strategic conservation planning, the U.S. Farm Bill, invasive species, and conservation incentives. She has a B.A. in Ecology from Dartmouth College and M.S. in Environmental Biology from UMass-Boston.

Ryan Thomas, Ph.D. is an Environmental Scientist at GHD based in Niagara Falls, New York. He assists in the setup and performance of treatability studies on groundwater and soil samples, which include analyses such as UV/Vis spectroscopy, GC, and Kjeldahl nitrogen analysis. Ryan also contributes to remedial technology assessments, which include a review of site data in order to assess remedial options, evaluate existing treatments, and make recommendations. As a recent graduate of Wayne State University, his Ph.D. work focused on developing and optimizing spectroscopic detection setups to quantify relative quantum yields of some ruthenium complexes.

Karen Thorbjornsen holds B.S. and M.S. Degrees in Geology and is a registered Professional Geologist licensed in Alabama, Georgia, South Carolina, and Tennessee. She has 20 years of environmental consulting experience with CB&I Federal Services (formerly Shaw Environmental) in Knoxville, Tennessee. She performs background studies for metals and PAHs in environmental media and statistical analyses of environmental data. Her specialty is geochemical evaluation of metals data — a forensic technique to distinguish natural concentrations from site-related contamination in soil, sediment, groundwater, and surface water. Ms. Thorbjornsen performs geochemical evaluations to delineate the extent of contamination, refine lists of chemicals of concern, optimize long-term monitoring programs,

confirm the success of soil-removal actions, characterize background distributions, and determine whether statistical outliers have a natural or anthropogenic source. She has successfully performed geochemical evaluations at hundreds of sites across the U.S. She has authored several papers on geochemical evaluations of metals and teaches short courses on the technique. Her papers have been published in *Environmental Forensics*, *Journal of Structural Geology*, *Remediation*, and *Soil & Sediment Contamination*.

Kathryn Tomsho is a graduate student at the Boston University School of Public Health. She works as a Research Assistant with Boston University's Superfund Research Program's Research Translation Core. In this role, Kathryn works with various stakeholders from government agencies to community groups to help interpret and apply research findings. Prior to joining Boston University, she worked closely with community groups impacted by natural gas drilling across Pennsylvania. She assisted them in their efforts to monitor their surface water quality and to interpret their data.

Kevin Trainer is a Senior Geologist with over 20 years of experience in assessing and remediating releases at environmental projects in New England. Mr. Trainer is a Licensed Site Professional in Massachusetts and a Professional Geologist in Maine and New Hampshire. He obtained his B.A. in Geology from Boston University and his M.S. in Geology from the University of New Hampshire.

Stephanie Turkot has been working with Geo-Cleanse International, Inc. for the last seven years and previously worked at the New Jersey Department of Environmental Protection. Ms. Turkot is an Assistant Project Manager and is involved with Geo-Cleanse's innovative remedial project design, costing, and marketing departments. She has assisted in the design and implementation of several in-situ chemical oxidation and reduction treatment programs, including catalyzed hydrogen peroxide, activated sodium persulfate, permanganate, and zero valent iron. Ms. Turkot has been involved with laboratory treatability studies and site analysis, and successfully implemented in-situ remediation treatment programs on a wide range of sites including multi-acre NAPL-impacted Brownfield and Superfund sites. Ms. Turkot has a B.S. in Environmental Science from William Paterson University. She serves as a board member for the Society of Women Environmental Professionals New Jersey Chapter and the Midwest Environmental Energy Association.

Christoph Uhlenbruch has over 28 years of experience in the environmental field as a regulator, environmental consultant, and in the chemical industry. He received his M.S. in Geology from Eastern Kentucky University in 1993, and his undergraduate degree in Geology from the University of Heidelberg in Germany in 1990. Christoph is currently the Federal Section Supervisor of the Kentucky Division of Waste Management's Superfund Branch, where he coordinates with EPA Region 4 regarding Brownfields, NPL sites, directs Kentucky's Pre-Remedial program, and ensures regulatory adherence to Kentucky statute as well as federal law.

Amber Vail is a Project Manager in the Contractor Services Division of GZA in Keene, New Hampshire. Ms. Vail is a licensed Professional Engineer in six states with nearly 20 years of experience in infrastructure and building structural engineering. She was also the first structural engineer in the state of Oklahoma to become a LEED accredited professional. Throughout her career Ms. Vail has worked on structural engineering projects in the infrastructure, government, institutional, industrial, commercial, and private sectors. She has coordinated projects with contractors, architects, consultants, and building owners as well as supervised engineers and drafters in design and contract documentation preparation to meet each project's unique goals. Ms. Vail received her B.S. in Engineering from Colorado School of Mines in 1998.

Conor Veeneman is an Environmental Scientist at CDM Smith's Boston, Massachusetts headquarters, and holds an M.S. from UMass Boston in Environmental Science. Conor served as a Peace Corps volunteer in Morocco from 2011 to 2013.

Kate Velasquez-Heller's practice at Goulston & Storrs PC, a large law firm with offices in Boston, New York, Washington, DC and Beijing, focuses on environmental law. Kate, an attorney and engineer, advises developers, owners, tenants, corporations and lenders on a wide range of environmental matters including those related to contaminated property, indoor environmental pollution, regulatory compliance

and green building strategies. For example, she advises clients throughout the US in connection with environmental due diligence activities, remediation programs and indoor environmental pollution issues (e.g., indoor air quality, lead paint and asbestos operations and maintenance programs) related to major real estate and corporate transactions. Prior to joining Goulston & Storrs, she worked as a civil/environmental engineer, performing site remediation, construction and assessment services for private and public clients, including large corporations, major utility providers and the US Military. She also interned with the Office of Regional Counsel at the US Environmental Protection Agency. Kate has been recognized in the legal field by Massachusetts Super Lawyers as well as Chambers USA, "America's Leading Business Lawyers." Additional information about Kate's practice is available at www.goulstonstorrs.com.

Roelof Versteeg is the owner and founder of Subsurface Insights, a company which develops autonomous hardware and cloud based software which provide actionable understanding of subsurface processes. Dr. Versteeg previously held positions in academia (Columbia University) and within the Department of Energy National Laboratory System (at Idaho National Laboratory). Dr. Versteeg is an expert on the use of time lapse electrical geophysical methods, and has received research support from EPA, DOE, NSF and DOD. Dr. Versteeg has over 25 peer reviewed publications and has extensive collaborations with academia, national laboratories and private industry.

James Wang is a Principal Engineer based in Geosyntec Consultants' office in Columbia, Maryland. Dr. Wang received his Ph.D. from North Carolina State University. He is a Licensed Professional Engineer with over 19 years of experience in developing and applying innovative technologies for waste and wastewater treatment and environmental remediation. Prior to joining Geosyntec, Dr. Wang was an Assistant Professor in Environmental Engineering at Northeastern University in Boston. Dr. Wang has led many research projects funded by government and industry. He has over 14 peer-reviewed journal articles and many conference proceedings and presentations for his research and technology development work in the areas of bioreactor landfill, advanced wastewater treatment, environmental molecular biology tool, and in-situ remediation technology.

Yi Wang is the Director of Pace's CSIA Center of Excellence, an environmental isotope forensic laboratory serving clients in all 50 states as well as numerous international locations for decades. He received his training on the state-of-art technology Compound Specific Isotope Analysis (CSIA) at Brown University and Princeton University. Dr. Wang is a Senior Scientist applying isotopes such as carbon, hydrogen, chlorine, nitrogen, oxygen, sulfur, boron, chromium, and strontium, etc. He has over 20 years of experience in environmental studies on issues related to air, soil, and water contamination. He has authored over 50 peer-reviewed articles and books, shared this information via invited lectures throughout the world, and peer-reviewed manuscripts to be published in the journals.

A. Curtis Weeden, Jr., P.G. is a Senior Hydrogeologist with AECOM in Manchester, New Hampshire. He has over 15 years' experience in water related projects, including hydrogeological characterization, remediation, modeling, permitting, and water withdrawals. He has an M.S. in Hydrology from the University of Arizona in Tucson. Recently, he has focused on characterization and remediation of organic and inorganic parameters at legacy sites.

Bill Wertz is a Senior Consultant based in Albany, New York, with more than 30 years of experience in investigation and remediation of contaminated groundwater, soil and vapor intrusion sites. His primary field of interest is vapor intrusion. He is currently serving as Co-Principal Investigator on two Department of Defense Environmental Security Technology Certification Program (ESTCP) funded research programs: one related to optimization of sub-slab ventilation systems to mitigate vapor intrusion; and one related to the use of mass flux characterization techniques to assess vapor intrusion potential. He holds a B.S. in Geochemistry (Honors, 1974) and Ph.D. in Geology (1983) from Pennsylvania State University.

Leslie Wilson has a Bachelor's Degree in Psychology and Cognitive Science from Marlboro College and is nearing completion of a Master's Degree in Public Health from Dartmouth College School of Medicine, where she has focused on biological statistics and epidemiology. Ms. Wilson has previous clinical experience working in the mental health field serving vulnerable populations and working in vocational rehabilitation with both educators and primary care providers on crisis management and prevention. Ms.

Wilson completed this work while working as a Climate and Health Intern in the Massachusetts Department of Public Health's Environmental Toxicology Program. Funding for this work has been made possible (in part) by the Centers for Disease Control and Prevention Building Resilience Against Climate Effects Cooperative Agreement. The views expressed do not necessarily reflect the official policies of the Department of Health and Human Services or the US Government.

Rachel Wilson is a senior Environmental Analyst in the Massachusetts Department of Public Health, Bureau of Environmental Health, Environmental Toxicology Program. Rachel serves as the primary toxicologist responsible for the development and implementation of evidenced-based health assessment tools for systematic integration into program activities across the Water, Air and Exposure Units. Rachel has a B.S. in Allied Health Professions (focused on medical management of cardiopulmonary pathophysiology) from The Ohio State University, as well as a Master's Degree in Environmental Health from Boston University School of Public Health. She is a licensed healthcare practitioner (Registered Respiratory Therapist) and has several years of experience in clinical settings. Rachel has presented on topics related to risk assessment and toxicology of lead, disease education and outcomes, biomonitoring of arsenic, and environmental contaminants in recreational waterbodies. Over the past year, Rachel has worked extensively on regulatory toxicology, exposure assessment, and risk assessment projects to support the programmatic needs of the Environmental Toxicology Program.

Steve Woodard is the President and co-founder of ECT (Emerging Compounds Treatment Technologies). ECT is an equipment company focused on developing and commercializing treatment technologies for emerging, difficult-to-treat compounds. Steve's responsibilities include: leading research and new product development; providing technical leadership on all projects; proposal development; intellectual property; and communication with the engineering/remediation community. Steve is also the inventor of BioMag, a biological treatment process that was purchased by Evoqua Water Technologies. He has 25 years of experience in water and wastewater treatment, 15 of which were in consulting. Steve's focus is currently on bringing Synthetic Media technology to the marketplace for the treatment of 1,4-dioxane, perfluorinated compounds, and other emerging compounds. He received his Ph.D. in Environmental Engineering from Purdue University in 1992.

Kate Woodward retired from the US Army Corps of Engineer as a Major in 1996. The military career was followed by a stint as a High School teacher in South Carolina, where she initiated Project Lead the Way (a pre-engineering) program. Since 2010, Ms. Woodward has been an Environmental Engineer at EPA Region 1, focusing on PCB remediation projects as well as Green Remediation and the Re-Powering America's Lands Initiative.

Jaeho Yang is a Professor of Pharmacology and Toxicology in the School of Medicine at Catholic University of Daegu in Daegu, South Korea. Jaeho Yang was chairman of Dioxin2001 and Dioxin2013. He has worked on dioxin research for over 25 years. He received a Research Associateship Award from US NRC. He is a research fellow at NIH in Bethesda, Maryland, and at US EPA.

Jessica Yeager, PE is a Remediation Engineer at Geosyntec Consultants with over seven years of experience developing remedial designs for brownfields sites. She has her S.B. from Harvard in Environmental Engineering and her M.Eng. in Environmental Engineering from MIT. She has designed remedial systems for high vacuum extraction (HVE), enhanced reductive dechlorination (ERD), Liquid Boot® sub-slab vapor intrusion mitigation, air sparging, sub-slab depressurization, soil vapor extraction (SVE), groundwater pump and treat, dual-phase extraction, zero-valent iron (ZVI) injection, and chemical oxidation injection for many Fortune 100 companies. Lately, her focus has been on providing innovative remedial solutions for brownfields redevelopments in metro Boston, including vapor intrusion evaluation and mitigation. She is an active member of the Society of Women Engineers and the Environmental Business Council of New England.