

2012 EAST COAST CONFERENCE PRESENTERS:

Richard Abrams is President and CEO of Bisco Environmental in Taunton Mass. Bisco is a leading supplier of remediation systems and ShallowTray air strippers. In this position, he is responsible for the day-to-day operations as well as for new business/product development. Prior to Bisco, he was Vice President – Renewable Energy at Babcock Power (BPI) in Worcester, Mass. In this role, he was responsible for BPI's renewables products including biomass boilers, emissions control systems, and solar boilers. Mr. Abrams has been involved in the design, development, and business development for environmental systems throughout his career. These systems have been used for air pollution control, hazardous waste destruction, and radioactive waste management. He has a BS in Chemical Engineering from Worcester Polytechnic Institute, has presented many technical papers and holds seven patents.

Funmi Afelumo is a senior undergraduate student and researcher at the Phytoremediation Laboratory of State University of New York College of Environmental Science and Forestry. He is scheduled to graduate in December, 2012 with a B.Sc. in Environmental Biology. Funmi Afelumo's research focuses on improving plant resistance to contaminants such as Heavy Metals.

Beverly Agtuca is a junior at the State University of New York College of Environmental Science and Forestry in Syracuse. Her research interests are phytoremediation, plant biotechnology, and bioenergy. She has been doing research since she was a freshman in high school and started working on phytoremediation/bioenergy project in her junior year at Brookhaven National Laboratory with the guidance of Dr. Lee Newman, who is now her undergraduate advisor. Her current research focuses on the toxicity and genetic effects of gold nanoparticles on crop plants, such as *Lycopersicon esculentum* (Tomato 'Brandywine'). She will be earning a B.S. in biotechnology on May 2014 and will be pursuing a PhD.

Boyd Allen III is a Professional Geologist, Senior Project Manager and Associate with Nobis Engineering, Inc. in Concord NH and has over 27 years of experience in hydrogeology and geology. He has managed multi-million dollar remedial actions at solvents and metals sites in addition to working on remedial investigations at various Superfund sites and military installations across the country. His interests are in aqueous geochemistry, natural attenuation, and contaminant fate and transport. Mr. Allen holds a MS in Earth Sciences from UNH and a BA in geology from Colby College. He is a member of the National Ground Water Association, the Society of American Military Engineers and ASTM Committee E50.

Dorothy Allen is currently a Project Manager at the Massachusetts Department of Environmental Protection implementing remediation solutions at NPL Superfund sites. Her current interests and projects involve optimizations and applications of innovative technologies to achieve optimal site clean-ups. She has spent 20 years working in environmental regulatory capacity at US EPA Regions 1 and 2 as well as MassDEP in diverse programs under the CWA, RCRA, HSWA and CERCLA. She is an active participant in the Interstate Technology and Regulatory Council most recently developing documents on Project Risk Management and Green and Sustainable Remediation. Ms Allen received a BS in Chemical Engineering and MS in Environmental Engineering with Phi Beta Kappa honors from University of Massachusetts, Amherst.

Ed Alperin, QEP, is the Chief Operating Officer of Solutions-IES, Inc. and its subsidiary EOS Remediation, LLC. He has more than 35 years of experience in the strategic development, commercialization and application of environmental technologies for the treatment of hazardous, toxic and radioactive waste. Prior to joining the company, he held a senior management position in a Fortune 500 environmental company where he managed operating and engineering groups that were responsible for the application of technology solutions. He was responsible for taking remediation technologies from conceptual development in the laboratory through commercialization and implementation in the field. His expertise in these areas will keep Solutions-IES and EOS Remediation on the cutting edge of innovation as he drives our R&D programs forward with the development and commercialization of new technologies and products.

Jennifer Ames is a graduate student in environmental health at the Boston University School of Public Health. She has a B.A. in the History of Science from Harvard University. In addition to her studies, she is also a research assistant in the environmental health department at BUSPH where she works on the BU Superfund Research Program and projects through the Exposure Biology Research Lab (directed by Dr. Michael McClean).

Isaac Anderson has ten years of experience in property cleanup work primarily in Massachusetts. He has a Bachelor of Science degree in Biology from University of Maine at Orono. As a project manager with Clean Properties, Inc., Mr. Anderson has worked on many facets of hazardous waste site cleanup, including regulatory analysis in support of liability investigations. Recognizing that relocating untested soil to another property can cause the spread of contaminants, Mr. Anderson participated in a company-wide effort to create the DirtTrade.com website.

Mike Apfelbaum is a licensed professional geologist with experience managing site and remedial investigations, feasibility studies, and the implementation of remedial alternatives. Involved with a wide range of projects ranging from the management of groundwater recovery and treatment systems to design and construction projects to the investigation and remediation of sites contaminated with chlorinated solvents, petroleum hydrocarbons, PCBs, and metals. Areas of focus include investigation and evaluation of fractured bedrock systems, surficial and structural geology, hydrogeology, evaluation and design of specific in situ remedial technologies, and conducting groundwater contaminant assessments. For the past four and a half years, Mike has been providing project support and management for Woodard and Curran's Corrective Action and Real Estate Services Group in Andover, Massachusetts.

Ralph S. Baker, Ph.D. is the Chairman and Chief Scientist of TerraTherm, Inc., a remediation technology firm located in Fitchburg, Massachusetts. A Certified Soil Scientist with an M.S. in soil chemistry and a Ph.D. in soil physics, he has 30 years' experience in the evaluation, design and implementation of technologies for in-situ and on-site treatment of wastes in soil and groundwater. Dr. Baker has served as an expert on a wide range of innovative physical, chemical and biological treatment technologies as a consultant to industry and government. Over the past 13 years, and particularly since co-founding TerraTherm, Inc. in 2000, Dr. Baker has focused his attention on application of in-situ thermal remediation of contaminated soils via simultaneous application of heat by thermal conduction and vacuum. He has authored over 65 scientific publications on in-situ/on-site remediation and soil physics.

Michael Barbara is an independent consultant with nearly 40 years of experience providing strategic environmental consulting services for a wide spectrum of clients across all business and industry sectors. Since 1980, Mr. Barbara has had a specialized practice in CERCLA compliance and has worked on over 150 Superfund sites. He has served as technical consultant to dozens of PRP Committees, with an emphasis on regulatory negotiations and expert representation. Mr. Barbara's project management experience ranges from on-site supervision of multi-million dollar remediation projects, wastewater treatment plant design and operation, solid waste management, and solid and hazardous waste permitting.

Jason Barroso is a Project Environmental Scientist with more than 10 years of experience in comprehensive site management. His experience includes coordinating and managing emergency response actions; designing, managing and conducting assessment activities and demolition design, management, administration associated with redevelopment activities. His emergency response experience includes response efforts throughout western Massachusetts for utility providers and also includes significant experience coordinating response efforts following natural disasters. His site assessment experience includes due diligence and hydrogeologic investigations of commercial/industrial properties in support of property transfer transactions. Demolition experience includes preparation of construction contract documents and contract administration.

Diane Baxter is a Senior Project Manager at Nobis Engineering. She has over 20 years of professional experience as a project manager and engineer in the environmental and hazardous waste site management field. Diane has extensive experience in planning and implementing remedial investigations,

feasibility studies, treatability studies, and remedial actions at hazardous waste sites throughout New England, including more than 20 National Priorities List (or "Superfund") Sites. Most of her hazardous waste site experience has been conducted on behalf of the U.S. EPA and U.S. Navy and performed under CERCLA rules; however, Diane also has experience with several state environmental programs throughout New England. She recently completed implementation of a successful in-situ thermal treatment project at the Groveland Wells Superfund Site in Groveland, MA, which used electrical resistance heating and steam technologies to remediate soils and groundwater heavily contaminated with chlorinated solvents. Diane has a BS in Civil Engineering from University of Massachusetts, Amherst, and a MS in Environmental Engineering from Tufts University.

Buddy Bealer is a Shell SGW Policy and Advocacy Region Manager for the United States and South America working from his office in Nazareth, Pennsylvania. Buddy works with Shell global staff, consultants, industry representatives, and regulators to support the development of policy based on current research and science. Buddy joined Shell in 1988 and held positions as a District Engineer, Environmental Engineer, Sales Manager, and Project Manager. From 1997-2001, he managed a NJ consulting office and returned to Shell in 2001 as a Program Manager. Buddy was a charter member (2009) to the ITRC's GSR Team and is an active member of the Sustainable Remediation Forum (SURF). Buddy earned a Bachelor's degree in Mechanical Engineering from the Pennsylvania State University in State College in 1988 and a Master's in Business Administration from the University of Connecticut in Storrs in 1997.

Nancy Beck is currently Senior Director of Regulatory Science Policy at the American Chemistry Council. From 2002 through January 2012, she was a Toxicologist and Science Policy Analyst at the Office of Information and Regulatory Affairs, within the U.S. Office of Management and Budget (OMB). Since 2002, Dr. Beck has been using her public health background and toxicology expertise to review regulations related to health and the environment and to review, inform, and improve many public health and policy decisions made by Federal Agencies. Dr. Beck also loves to share knowledge about the many tools that can be used to improve the scientific underpinnings of important governmental decisions. At OMB, Nancy played a key role in overseeing the implementation of the government wide Information Quality Guidelines, the Information Quality Bulletin on Peer Review and the OMB/OSTP Memorandum on Principles for Risk Analysis. In addition, Dr. Beck was the OMB lead for the US-EU International dialogue on risk assessment, a dialogue that was started in 2007 to encourage cooperation at the scientific and technical level. She was also a lead for coordinating US. Regulatory Policies related to nanotechnology. Nancy has also worked as a Toxicologist and Public Health Advisor for the Washington State Department of Health, and as a Microbiologist for the Estee Lauder Companies. She received her doctorate in Toxicology/Environmental Health from University of Washington in 1998 and was a Science and Technology Policy Fellow for the American Association of the Advancement of Science (AAAS) employed at the U.S. EPA, where her work focused on children's health issues, air toxics, and human variability.

Malcolm Beeler is an engineer currently involved in the design, implementation, and oversight of several PCB remediation projects involving buildings, soil, sediment, and groundwater. He also provides technical support for a number of AECOM Environment's remediation and investigation projects across the United States. His areas of expertise include interpretation of federal PCB regulations and design and implementation of risk-based investigation and remedial actions for PCBs. He attended The University of Texas at Austin where he earned bachelor's degrees in Chemistry and Civil Engineering and a master's degrees in Environmental Engineering.

Marcia Berger is a Licensed Site Professional and Registered Professional Sanitary Engineer as well as a Licensed Wastewater Treatment Plant Gr. 6 Operator in Massachusetts. She is president of Clean Properties, Inc., specializing in oil and hazardous waste site cleanup since 1989. Ms Berger has a Masters degree in Civil Engineering from Northeastern, studied groundwater hydrology at MIT and has a BA with concentration in Ecology and Microbiology from Hampshire College. She has managed approximately 3000 environmental projects, many involving application of innovative technologies.

Gary M. Birk, P.E., is the founder and Managing Partner for Tersus Environmental. He has a bachelor's degree in chemical engineering from North Carolina State University and hold registrations as a Professional Engineer in North Carolina, Virginia and Florida. Well-known for his contributions to in situ anaerobic groundwater remediation, Gary leads Tersus Environmental's engagement with inVentures Technologies to provide global sales management and marketing services for their family of Gas inFusion technologies for groundwater remediation. His focus is on engaging cutting-edge sustainable green technologies that help environmental consulting companies restore or remediate groundwater and soil at challenging sites associated with Fortune 500 companies, the U.S. Departments of Energy and Defense, and NASA. Gary has work extensively in the field of bioremediation and environmental consulting on soil and groundwater assessments and cleanups. His experience includes two decades as an environmental contractor and consultant focused on project management of multiphase, multidisciplinary environmental design and construction projects, predominantly for industry and utilities. He has worked on over 200 enhanced reductive dechlorination projects in North America, Europe, Asia and Africa.

Bob Bond, P.G. is a senior project manager and hydrogeologist with Langan Engineering & Environmental Svcs. in Doylestown, PA. He has over 24 years of environmental assessment and remediation experience and holds a B.S. Degree in Geology from Allegheny College and an M.S. Degree in Geology from Lehigh University. Mr. Bond's practice focuses on the hydrogeologic assessment of unconsolidated formations and fractured bedrock aquifers impacted by suites of chlorinated solvents, as well as environmental litigation support and expert witness testimony. Mr. Bond has been a speaker at numerous environmental conferences, including Battelle, National Ground Water Association (NGWA), Environmental Systems Research Institute (ESRI), and the Geological Society of America (GSA), as well as a contributing member of the Interstate Technology and Regulatory Council (ITRC).

Craig A. Bowe is currently the Chief Public Analyst with the Department of Environmental Health Services of the Ministry of the Environment, Commonwealth of The Bahamas. In addition to departmental administrative duties inclusive of chemical hazards, chemical response and environmental testing Dr. Bowe is collaborating on chemical assessment studies and analytical methods that meet the fiscal needs of developing areas while serving the interest of public health. Dr. Bowe is has served on committees involved in environmental education and small island sustainability. He has received research grants from funding agencies including the Robert A. Welch foundation in Texas and from the Texas Center for Border and Enterprise Development for research involving chemical risk assessment near the Rio Grande. Dr. Bowe received a bachelor's degree (with honors) in Chemistry from Huntingdon College in 1993 and a doctoral degree in Chemistry in 2003 from the University of South Florida in Tampa. Dr. Bowe currently serves as councilor for the International Council for the American Water Works Association, locally serves on the hazardous materials subcommittee for the National Emergency Management Agency and the Grand Bahama Humane Society on the island of Grand Bahama. Dr. Bowe has also served his peers as a reviewer for ACS publications in the chemical education, environmental, organic and analytical divisions. Dr. Bowe is junior co-author on a collaborative project that was awarded a United States patent, and is a member of Sigma Xi, the American Chemical Society, the Royal Society of Chemistry and the Society of Environmental Toxicology and Chemistry.

Kerry Bowie recently took over coordination of the Brownfield Program and broad oversight of MassDEP's Environmental Justice Strategies as Director of Brownfields and Environmental Justice. Kerry joined MassDEP in November of 2008 as Associate Commissioner for Operations after serving as Special Assistant to the Undersecretary for Environment at the Executive Office of Energy & Environmental Affairs (EEA) where he provided oversight and assistance to EEA agencies and offices. Prior to joining the Patrick Administration, Kerry gained extensive experience as an environmental specialist and manager, including nine years with Texas Instruments in Dallas. In addition to this valuable experience, Kerry holds bachelor's and master's degrees in environmental engineering from MIT and the University of Michigan, respectively, as well as an MBA from the MIT Sloan School of Management.

Stephen Boynton is the president of Subsurface Environmental Solutions, LLC based in Andover, Massachusetts. He is a Massachusetts Licensed Hazardous Waste Site Cleanup Professional and Registered Professional Engineer. Mr. Boynton holds a Bachelors of Science degree in Civil Engineering from Tufts University, and a Master of Science degree from the University of Texas at Austin in

geotechnical engineering. Mr. Boynton is the chair of the Massachusetts LSP Association's LNAPL subcommittee, and directed preparation of LNAPL White Papers used to initiate change in the Massachusetts Department of Environmental Protection's LNAPL regulations. Mr. Boynton has over 29 years of experience in geotechnical and environmental engineering consulting.

Ann Bradley is a toxicologist and risk assessor with 8 years of experience. Her particular areas of expertise include site- and chemical-specific risk assessments. Ms. Bradley has extensive experience in conducting toxicological assessments and has developed and applied rigorous data quality criteria to systematically determine and record the use of data of various quality in such assessments. She has interests in applying emerging types of toxicological data in setting chemical-specific regulatory standards, and in determining methods for integrating findings of divergent data types and results in a manner that informs decision making.

Mark Bruce is the Technical Director for TestAmerica in North Canton, Ohio. He has experience in environmental monitoring of metals, wet chemistry, volatile and semivolatile organics including sample preparation and analysis since 1979. He has participated in the development of several EPA methods. His responsibilities include method development, evaluation, implementation and troubleshooting. He provides technical support to TestAmerica clients and internal staff. 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. Mark earned a Ph.D. in Analytical Chemistry from the University of Cincinnati in 1984.

Wawan Budianta is currently as associate professor in Dept. Geological Engineering, at the Universitas Gadjah Mada, Indonesia. He obtained his doctoral degree from Tokyo Institute of Technology, Japan in 2008. His specialization is in engineering and environmental geology, especially on soil and groundwater remediation.

Eric Butler, Ph.D. is an environmental chemistry expert with over 20 years' experience evaluating the source and fate of chemicals in the environment. He has applied chemical fingerprinting techniques, including isotopic methods, in projects involving petroleum hydrocarbons, PAHs, PCBs, dioxins/furans, and solvents. He specializes and has testified on oil chemistry, including PCB oils, the composition of petroleum products, source identification, and the fate of chemicals in the environment. At Gradient, he focuses on designing analytical chemistry programs and litigation support involving forensic chemistry. Dr. Butler has performed and directed numerous chemical analyses using both laboratory and field chemistry techniques. In addition, he has developed an expertise in contemporary archeology ("garbology") to date environmental disposal activities by dating the co-disposed artifacts, and has testified in court on the topic. Before coming to Gradient, he served the US Congress as a Congressional Science Fellow, directed a municipal laboratory specializing in VOC and bacteriological analyses, and directed numerous environmental studies relating to the Exxon Valdez Oil Spill.

Dustin Bytautas is a Project Manager at VeruTEK Technologies in Bloomfield, CT, where he has worked since 2006 to design and implement remedial solutions based on the company's patented remedial technologies. After earning his Bachelor of Science degree in Environmental Engineering from the University of Connecticut, Dustin has accrued more than 6 years of technical and regulatory environmental experience which he applies to manage all of VeruTEK's site remediation projects. He has experience working with a range of sites including residences, Brownfields, former manufactured gas plants, and commercial and industrial properties, impacted by contaminants including fuel and waste oils, coal tar and other MGP waste products, creosote, chlorinated solvents, and gasoline.

Susan Cahalan, PG, has over 16 years of consulting experience in preconstruction building assessments, environmental site investigation, risk assessment, environmental compliance auditing, brownfields site redevelopment, environmental permitting, remediation system feasibility studies and design, due diligence environmental assessments and coastal/oceanographic environmental impact studies. Ms. Cahalan also serves as graduate head teaching assistant for Harvard Extension School's Sustainability and Environmental Management Program and has served as project manager and editor for Alexandra Cousteau's Blue Planet Expedition.

Wenjun Cai is the graduate student of State University of New York-Environmental and Forest Science, from department of Environmental and Forest Biology. Her research has focus on the Nanoparticle's biological impact on plants. The nanoparticles in her research include nano silver, nano copper oxide, nano zinc oxide and others. She studies the difference of biomass and the transpiration after expose to the nanoparticles. She is also researching the plant's uptake of nanoparticles by analysis with ICP (Inductively Coupled Plasma).

Jason Canouse is the East Coast Regional Manager for Land Science Technologies vapor mitigation technologies. Land Science Technologies (LST) is a division of Regenesys, Inc., which is dedicated to providing advanced technologies for sustainable land development. One of LST's main products is Geo-Seal™, a composite gas vapor barrier management technology designed to eliminate potential indoor air quality health risks associated with vapor intrusion. Mr. Canouse is responsible for managing both sales and technical support associated with Land Science Technologies vapor mitigation technologies. Prior to Mr. Canouse working with Land Science Technologies he worked in the environmental consulting industry for over 12 years. His previous work in environmental consulting involved Phase I Environmental Assessments, Phase II Environmental Site Investigation (soil and groundwater), management of remedial investigations and tank closures. Mr. Canouse's work included experience dealing with regulatory agencies such as the NJDEP, NYSDEC, NYSDOH, NYCDEP, and USEPA to name a few.

Chris Carleo is a Vice President and Senior Program Manager at AECOM with more than 25 years experience focusing on the investigation and remediation of complex sites as well as sustainability, greenhouse gas emissions and environmental metrics. Mr. Carleo has been actively involved in the development of Green and Sustainable Remediation (GSR) approaches as a participant on the Interstate Technology Research Council (ITRC) GSR team since 2009 and serving as the team's Program Advisor in 2010 and 2011. He has extensive experience addressing complex environmental and sustainability issues for gas and electric utilities and for the oil and gas and freight rail industries. He holds a Bachelor's of Engineering in Civil Engineering from Manhattan College and a Master's Degree in Civil/Environmental Engineering from Northeastern University.

David Carstens is a Senior Hydrogeologist with WSP Environment & Energy. He has more than eight years of professional geology and hydrogeology experience. David earned a Bachelor of Science degree in Geology and a Masters of Science Degree in Hydrogeology from Illinois State University in Normal, Illinois. As part of WSP's Land Restoration and Ground Engineering group, David specializes in development of advanced site conceptual models and provides technical support for projects throughout North America.

Richard T. Cartwright PE, CHMM*, CPIM* is a Senior Vice President of MEC^X, LP (pronounced M-E-C-X), an innovative technology-driven company dedicated to providing cost-effective, unique "outside the box" solutions to difficult environmental remediation, professional engineering, and chemistry data validation problems. He has an MBA in Operations Management from Indiana University, a BES in Chemical Engineering from Brigham Young University, and a Professional Certificate in Project Management from the State University of New York at Buffalo. Mr. Cartwright is an internationally-recognized motivational platform speaker and daily blogger on Soil & Groundwater Remediation, Hazardous Materials Management, Professional Networking, and Sustainable Career Development topics. He is a Past President of the Academy of Certified Hazardous Materials Managers (now the Alliance of Hazardous Materials Professionals). He is a recipient of the prestigious "Pete Cook Founders Award" for distinguished lifetime leadership, dedicated service, and professional achievement within the hazardous materials management profession. He is a "Fellow" of the Institute of Hazardous Materials Management. Mr. Cartwright is the author of "Hazardous Materials Management 365 Days a Year" and the "CHMM Career Planning & Survival Guide".

Jay Clausen is a Physical Research Scientist with the US Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory (CRREL) in Hanover, New Hampshire. Since 2005, Jay has conducted research on the application of the Incremental Sampling Methodology (ISM) to military ranges containing energetics and metals in particulate form as well as the fate-and-transport of lead, tungsten, and energetics. Jay routinely presents at conferences and publishes

peer-reviewed journal articles, and government reports. Prior to joining CRREL, Jay worked for 14 years in the environmental consulting field for AMEC as a Senior Hydrogeologist/Project Manager and Lockheed Martin focused on Department of Defense and Department of Energy issues. Jay earned a bachelor's degree in geology from the University of Nebraska at Omaha and a master's degree in the geosciences from the University of Maine. Jay is currently working on PhD in the Natural Resources and Earth System Science program at the University of New Hampshire focused on the application of ISM techniques to soils containing metals. Jay is a certified professional geologist in the states of Kentucky, New Hampshire, Texas, and Washington and a certified professional hydrogeologist in the state of Washington.

Kelly Clemons is a Technical Sales Representative at TerraTherm, Inc. Ms. Clemons has a strong background in the environmental field with 20 years experience as a technician and manager for analytical and treatability laboratories; and corporate quality assurance. She received a Bachelor's of Science degree in Biology from Emory College in Atlanta, GA. For the past six years, she has been involved with environmental remediation with a focus on managing treatability evaluation and technical sales. Ms. Clemons currently manages TerraTherm's technical sales inquiries, treatability studies, and participates in related conceptual design development and report writing."

Samuel M. Cohen (M.D., Ph.D., University of Wisconsin – Madison, 1972) completed a residency in anatomic and clinical pathology at St. Vincent Hospital, Worcester, MA (1975), and became board certified the following year. He was visiting professor at Nagoya City University Medical School, Nagoya, Japan, 1976 – 1977, staff pathologist at St. Vincent Hospital, 1975 – 1981, and associate professor of pathology at the University of Massachusetts Medical School, 1977 – 1981. He has been professor of pathology and microbiology (vice chairman, 1981 – 1992; chairman, 1992 – 2007) and the Eppley Cancer Center at the University of Nebraska Medical Center since 1981. Dr. Cohen's research has focused on mechanisms of carcinogenesis, with a focus on the role of cell proliferation in the carcinogenic process, primarily utilizing the urinary bladder as a model system. Most recently this has involved investigations into the mechanisms of bladder carcinogenesis produced by arsenicals and PPAR agonists. In addition, his research has involved clinical investigations of various aspects of urologic pathology and extrapolation between animals and humans. This research has resulted in more than 300 publications. He has been a member of numerous NIH, EPA, FDA, WHO, IARC, NTP and NAS study sections and scientific panels and is a member of the NIEHS Board of Scientific Counselors. He is associate editor or on editorial boards of five scientific journals in toxicology, pathology, and carcinogenesis, and is a reviewer for several other journals. He was president of the Carcinogenesis Specialty Section and the Central States Chapter of the Society of Toxicology (SOT). He received the University of Wisconsin Medical School Distinguished Alumnus Citation (1999), Arnold J. Lehman Award from SOT in 2001, named Distinguished Scientist in Cancer Research by the Japanese Foundation for Cancer Research in 2004, and received the George H. Scott Award from Toxicology Forum in 2012. He continues to be active in human surgical pathology and was named as one of the "Best Doctors in America."

Andrew Coleman is a Marketing Manager at the Electric Power Research Institute (EPRI), where he helps develop, price and promote environmental and renewable research programs. Coleman has also been an Account Executive in the Environment Group. Before that, he was a Senior Project Manager in EPRI's Land and Groundwater area, focusing on manufactured gas plant research and site remediation. He worked with multiple utilities across the U.S. and the U.K. Coleman's areas of expertise include hydrogeology and engineering geology. During a hiatus from EPRI, Coleman was a Professor and Director of Energy Systems Engineering at Lehigh University. Before joining EPRI, Coleman was a consultant for utility companies on environment mitigation and risk management of environmental liabilities. He began consulting with AECOM in 1991 and by 1994 was seconded full time for Public Service Enterprise Group in Newark, New Jersey. Coleman earned a Bachelor of Arts degree in geology from Lehigh University in Bethlehem, Pennsylvania. He obtained a Master of Arts degree in structural geology at the City College of New York and holds a Master of Philosophy degree and a doctorate in structural geology from the Graduate Center of the City University of New York. Coleman holds one US Patent and is a certified professional geologist in California, Pennsylvania, Tennessee, and Delaware and is certified by the American State Board of Geologists.

Frederic Coll has 18 years of experience with the implementation and management of many aspects of environmental engineering projects ranging from site characterization through site remediation. Mr. Coll also has experience with innovative remedial designs for free product and groundwater extraction and treatment systems, geophysical studies and monitored natural attenuation demonstrations. Mr. Coll currently manages the groundwater remediation group for URS' Energy and Construction Division, Environmental Remediation Services (ERS) Group in Pittsburgh, PA. He received his Bachelor's Degree from Slippery Rock University and his Master's Degree in Engineering Geology from Kent State University.

Michael Cook is a senior biotechnology major at the State University of New York College of Environmental Science and Forestry. His current research under Dr. Lee Newman involves studying the molecular responses in poplar to the affects of plant growth promoting bacteria. Previous research projects Michael has worked on include: bio-plastic production in recombinant *Escherichia coli*; restoration of the American Chestnut tree using genetic modification and management of the high selenium and salinity levels in the agricultural lands of the Central California. In his free time Michael is an active member of the ESF community and an avid outdoorsman.

Michael E. Coty has more than 11 years of experience in environmental consulting and contracting, most recently as a Senior Project Manager at ENPRO Services, Inc. of Newburyport, MA. Mr. Coty manages emergency response and technical environmental assessment and remediation projects. He develops and implements project methods, provides field oversight, data evaluation and analysis, and prepares Massachusetts Contingency Plan submittals. He has a BS from the University of New Hampshire, and holds a Grade 2-I Massachusetts Wastewater Treatment Plant Operator license.

Gerald Cresap is a GES regional engineering manager with 22 years of experience designing soil and groundwater remediation systems at more than 200 sites impacted by various contaminants including: chlorinated solvents, fuel and waste oils, coal tar and other MGP waste products, gasoline, PCBs, and heavy metals. He has developed chemical oxidation strategies for numerous contaminated sites and was recently awarded a US patent for an innovative in-situ chemical oxidation process. Mr. Cresap earned a BS in mechanical engineering from the Georgia Institute of Technology and is a registered professional engineer in New York and all New England states.

Charles Crocetti has over 25 years of experience in a broad range of hydrogeologic, environmental, and remedial projects. Chip's particular expertise is in the application of geochemistry to the solution of hydrogeological and environmental problems. Prior to co-founding Sanborn, Head & Associates, Inc. (Sanborn Head) in 1993, Dr. Crocetti was employed at GZA, and prior to that worked at Exxon's main research facility in Houston Texas. Dr. Crocetti has worked on hundreds of projects, in over 20 states and internationally, including twelve USEPA Superfund sites. Recent areas of interest include: assessment and control of impacts to groundwater related to blasting; the emerging contaminant 1,4-dioxane; and geologic and geochemical influences on the success of geothermal/ground source heat pump systems. Chip earned his Bachelor's Degree from Dartmouth College in Earth Sciences, and his Master's and Doctorate from Harvard University in Geological Sciences with a concentration in geochemistry.

Sean Davenport is currently an environmental chemist for Carus Remediation Technologies with particular expertise in the research and development of novel sustainable remedial technologies. Sean received his M.S. under Dr. John McCray at the Colorado School of Mines in the Environmental Science and Engineering Division, and is currently finishing up his PhD, with an anticipated completion in 2013. His doctoral research project is to evaluate the applicability of shear-thinning polymers to enhance the delivery of subsurface amendments and bioaugmentation bacteria, and evaluate if polymer biodegradation can support bioremediation. Since working at Carus Corporation, Sean has been heavily involved in the development of sustained released amendments for a variety of applications.

Robin Davis is a Licensed Professional Geologist and Project Manager with the Utah Department of Environmental Quality, Leaking Underground Storage Tank program. She has over 30 years of professional experience, and specializes in fate and transport of petroleum hydrocarbons, risk assessments, and data acquisition and analysis most recently for the vapor-intrusion exposure pathway.

George DeVaul, PhD is a Senior Consultant at Shell Global Solutions in Houston. His work includes development and application of risk assessment and chemical fate and transport methods applicable in site assessment and remediation.

Arashdeep Kaur Dhillon is a senior at SUNY ESF and is currently completing her Bachelors of Science in Biotechnology. Arash also takes a great deal of interest in the Medical Field and plans to study Dentistry in the near future. Outside of academics, Arash takes interest in real and impressionism art, soccer, running, reading (mystery and suspense), and adverse type of music. Exploring new cultures, ideas and knowledge is important to her. She follows a fairly young religion called Sikhism and has been in the United States for 13 years. She lives with her parents and a younger sibling in Manlius NY.

Maureen Dooley has over twenty 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 Northeast Region Manager for Regenesis. She is responsible for managing both sales and technical support associated with Regenesis bioremediation and chemical oxidation products. Over the past 3 years, however, she has been focused on chemical oxidation applications at petroleum and chlorinated hydrocarbon sites.

James R. Doyle obtained a B.Sc. in Honours Biology from Bishop's University in 1978, and received a M.Sc. in Environment and Management from Royal Roads University in 2002. He has recently completed a Ph.D. in the Chemical and Environmental Toxicology programme at the University of Ottawa. Dr. Doyle has over 30 years experience in the nuclear, petrochemical and mining industries. He was a Principal and senior scientist at Jacques Whitford where he specialized in nuclear projects and environmental assessments pursuant to the Canadian Environmental Assessment Act. He has led project teams directed at remediating waste management storage at Atomic Energy of Canada Limited's (AECL's) Chalk River Laboratories (CRL) site and was responsible for hazardous material management at Syncrude Canada's oil sands mining and upgrading operations in Fort McMurray. Dr. Doyle obtained his Project Management Professional accreditation with the Project Management Institute in 1992. He has participated in international forums and technical committees on nuclear waste with the International Atomic Energy Agency and in research workshops with NATO. Currently, Dr. Doyle is a National Science and Engineering Council Post Doctoral Visiting Fellow at Health Canada. The focus of his research is to determine the role of soil ingestion in human health risk assessments of contaminated sites and exposure of Aboriginal and other communities to contaminants in soil. He is also involved in assessing the exposure of populations to contaminants found in indoor dust. In addition to his studies, Dr. Doyle provides independent consulting services to AECL and other clients on an *ad hoc* basis.

Margaret Findlay has been active in the field of bioremediation for 30 years. She was author of the first paper to demonstrate that aerobic methane-using bacteria are able to oxidize TCE, DCE, VC and other chlorinated compounds while growing on methane. Based on this observation, she managed NSF grants to demonstrate in situ degradation of chlorinated ethenes by methanotrophs, and designed bioreactors based on this mechanism. Subsequently she studied co-metabolic degradative capabilities of other aerobic bacteria, including the degradation of 1,4-dioxane and chlorinated ethanes by propane using bacteria, and the degradation of DCE by ethene-using bacteria. Dr. Findlay also supervised projects funded by EPA grants, related to the direct oxidation of hydrocarbons, such as treatment of coal tar and petroleum wastes by composting and related aerobic soil processes. As the president of Bioremediation Consulting, Dr Findlay directs microcosm studies used to define treatment options for engineering clients for the development of site cleanup strategies. Dr. Findlay's current research involves the interaction between ethenotrophs and methanotrophs during their oxidation of chlorinated ethenes in groundwater.

Samuel Fogel has a Ph.D. in microbiology from the U. of Illinois and has been active in the field of biodegradation and bioremediation for 30 years. He published one of first papers on the sequential anaerobic/aerobic biodegradation of a chlorinated pesticide, methoxychlor. This work demonstrated that complete biodegradation of a recalcitrant molecule was possible when two groups of bacteria worked in

sequence; the first performing reductive dechlorination and the second performing aerobic degradation. Subsequently he studied the aerobic biodegradation of petroleum and polynuclear aromatic compounds under both laboratory and field conditions. His publication milestones on the biodegradation of recalcitrant molecules include the methanotrophic biodegradation of TCE, and the first study documenting biodegradation of benzo-a-pyrene by bacteria. Most recently, Dr. Fogel, along with Dr. Findlay, have focused on reductive dechlorination of both chlorinated aromatic and chlorinated alkanes and alkenes. Dr. Fogel is involved with commercialization of specialized cultures of Dehalococcoides for bioaugmentation of soil and groundwater. His recent activities are focused on the commercialization of Dehalococcoides-like cultures that reductively dechlorinates PCBs.

Bob Forbes joined FMC in 1984. He started at FMC in the Agricultural Products Group as the Environmental Manager of the Middleport Plant. Prior to being named Director, Environment, Bob was an Environmental Manager in the Corporate Environmental Planning Department. Before joining FMC he was the Environmental Engineering Manager for the Clinton Corn Processing Company a former division of Nabisco Brands, Inc. and Archer Daniels Midland (ADM). He also worked as an Environmental Engineer with the State of Hawaii, Department of Health, Environmental Health Services Division and two consulting engineering firms. He is a licensed Professional Engineer in the States of Pennsylvania, New York, Hawaii and a Diplomat in the American Academy of Environmental Engineers and has a Master of Science Degree in Civil Engineering from the University of Hawaii and a Bachelor of Science Degree in Environmental Engineering from Brown University.

Jim Galligan is the Vice President of Engineering at TerraTherm, Inc. Mr. Galligan has over 20 years of environmental remediation experience. Mr. Galligan has been with TerraTherm since it was founded in February 2000 and has been involved in the design and field implementation of all of TerraTherm's thermal remediation projects. Mr. Galligan's thermal remediation experience includes application of thermal conduction heating, electrical resistance heating and steam enhanced remediation technologies, as well as combinations of multiple thermal technologies at complex sites. Prior to joining TerraTherm, Mr. Galligan spent 10 years designing, installing, operating and troubleshooting a variety of remediation systems at commercial and industrial sites.

Kamalika Ganguly is currently a Graduate student in the Department of Environmental Sciences at The University of Toledo. Her research emphasis is on determining scaling relationships in arsenic flow and uptake by plants across different sized wetlands. She has a Bachelor's Degree in Botany and a Masters in Environmental Science from University of Calcutta, India.

Edward Garvey is an environmental geochemist and a licensed professional geologist with the Louis Berger Group in Morristown, NJ. He has extensive experience in environmental geochemistry, environmental forensics, sedimentology, sampling design, and data interpretation. His work has primarily focused in aquatic and terrestrial studies of contaminant fate and transport, specializing in contaminant geochemistry and the interactions of contaminants with water, sediments, soils and biota. He specializes in persistent organic pollutants (POPs) such as PAHs, PCBs and dioxins and in heavy metals, such as mercury and lead. He has extensive experience in the application of environmental forensics to identify current and historical contaminant sources to the environment using ratio analysis, isotopic techniques, and multivariate statistical analyses. Since 1988, his work has centered on the fate, transport, and ecological uptake of persistent pollutants at Superfund megasites in the northeastern United States including PCBs in the Hudson River, dioxins in the Passaic River, mercury in Onondaga Lake, and PAHs in Gowanus Canal and Newtown Creek (NYC). As a leader in contaminant fate and transport analyses, he has co-authored over sixty presentations and journal articles on the subject. Dr. Garvey is also an adjunct professor in the Civil and Environmental Engineering Department at Manhattan College in New York City.

Grant Geckeler is the Executive Vice President of TPS Technologies, where he is active in the research, development and design of in situ thermal remediation technologies. A graduate of Universiteit Leiden and University of California, San Diego, Grant is a named inventor in several patents and patent applications of thermal remediation and off-gas treatment technologies. He is active in the design and management of in situ thermal remediation projects in Europe and North America.

Steven B. Gelb is currently the President, co-founder and Principal Hydrogeologist of S₂C₂ Inc. , a small business specializing in providing strategic guidance and/or implementation of streamlined site characterization programs throughout the country. Mr. Gelb's particular interests focus on complex DNAPL site evaluation for both chlorinated solvents and MGP wastes. Mr. Gelb received a M.S. in Water Resources Management/Hydrogeology from the University of Wisconsin - Madison in 1980 and has over 30 years of consulting hydrogeology experience. He has personally been involved with the implementation of over 50 streamlined site characterization programs (i.e., Triad, ESC, High Resolution, etc.) at Federal, State, and private sites. The focal point of these programs has been on the use of dynamic work strategies in conjunction with rapid subsurface sampling and/or direct-sensing technologies in concert with on-site analytical capabilities and 3-D graphical representations in order to make in-field decisions to guide characterization efforts.

Dan R. Glaser, MSc, PG is a Senior Geophysicist for Washington River Protection Solutions, LLC a subsidiary of URS Corp and contractor to the United States Department of Energy at the Hanford Nuclear Waste Reservation in southeast Washington State. Dan is responsible for overseeing the geophysical characterization and delineation efforts associated with the historical releases of contaminants in the vicinity of the radioactive waste tank farms. Mr. Glaser has over 15 years of experience with the characterization of subsurface contaminants using geophysical methods, as well as geophysical approaches for environmental, engineering, and exploration problems. Prior to his time at WRPS, he was a Research Geophysicist for the U.S. EPA, Office of Research and Development, National Exposure Research Laboratory in Las Vegas, NV, where he was responsible for the oversight and completion of geophysical imaging research in the emerging contaminant fields of biofuels and nanoparticles. As a Project Manager for hydroGEOPHYSICS, Inc., Mr. Glaser was responsible for devising and executing novel approaches to complex subsurface imaging problems. Mr. Glaser earned his undergraduate degree in geology from the University of Southern Maine and his Master of Science degree in Urban Environmental Geology from the University of Missouri. Dan is a Professional Geologist licensed in the state of Washington.

Philip Goodrum has more than 20 years of experience in quantitative risk assessment and environmental modeling, specializing in applications to human health and ecological risk assessment, sediment remediation, groundwater compliance monitoring, and NRDA. Dr. Goodrum provides expert peer review of regulatory guidance and conducts negotiations with state and federal regulators and trustees on issues related to injury assessment, data interpretation, statistical analysis, modeling, risk characterization, and remedy selection. He is a recognized national expert in probabilistic modeling, lead (Pb) risk assessment, and environmental sampling, having been invited to teach numerous professional short courses on these topics by regulators and industry. Dr. Goodrum currently serves on USEPA's Clean Air Science Advisory Committee which provides advice on modeling and data interpretation for lead risk assessment, and ITRC's Incremental Sampling Methodology Workgroup. He has held adjunct teaching positions at SUNY College of Environmental Science and Forestry and is developing a course on environmental toxicology for a new MPH curriculum at Syracuse University.

Patrick Gratton received his Bachelor's of Science Degree in Civil Engineering from the University of North Carolina at Charlotte. Patrick has obtained his engineering intern license and is looking forward to gaining a Professional Engineering license in the future. After graduation Patrick accepted a position with Duke Energy a utility company in Charlotte, NC. During his time at Duke Energy, Patrick worked within the Environmental Health and Safety group in the Waste & Remediation Section. Patrick recently moved to Connecticut in August 2010 and became a part of the Environment team at AECOM. He has been involved with a number of soil and groundwater remediation projects of various sizes and types including Brownfield's, manufactured gas plants, and large industrial facilities. Since this time Patrick has been involved in the design and implementation of a number of projects including a MGP site in New York, a demolition/remediation project in Connecticut and a number of in-situ and bioremediation projects in the Northeast.

Carl Gruszczak Jr. has spent the last four years as an environmental analyst with the Remediation Division of the Connecticut Department of Energy and Environmental Protection (DEEP) overseeing

investigation and remediation projects in northwestern Connecticut. Mr. Gruszczak also serves as the Remediation Division's vapor intrusion expert. Prior to his employment at DEEP, he was employed as an environmental consultant. He graduated from Rensselaer Polytechnic Institute in Troy, NY with a B.S. in physics and a minor in geology and attended two years of graduate school at RPI enrolled in the geophysics program.

Ethan Gyles is a project engineer and project manager at Environmental Resources Management (ERM) in Providence, Rhode Island. He has four years of consulting experience focusing on contaminated site investigation and remediation projects. His areas of expertise include remedial system design, implementation, and operation; and coordination of groundwater, soil, and soil gas sampling programs. He holds a M.S. in Civil/Environmental Engineering and a B.S. in Environmental Sciences, both from the University of New Hampshire.

Robert Hamilton is a senior at SUNY ESF with a biotechnology major and a chemistry minor. His area of focus is in plant molecular technology.

Paul Hartman currently serves as the Director of State Government Relations for Chesapeake Energy Corporation. Hartman has an extensive background in public policy development, campaign planning, media advocacy, grassroots engagement and direct lobbying. He manages Chesapeake's New York State Government Relations operations – promoting the development and implementation of public policies that advance the development and use of indigenous, clean burning natural gas resources in the state. Mr. Hartman regularly participates in community forums and educational programs to educate elected officials, NGOs, industry partners and New York residents on the operations, economic and environmental benefits of natural gas development. Mr. Hartman additionally serves as a member of the Board of Directors for the New York Independent Oil and Gas Association; State Lead for the America's Natural Gas Alliance, New York State Affairs Committee; and Chairs the Marcellus Shale Committee for the New York State Business Council. Mr. Hartman earned a BA in Political Science from the University at Albany.

Wendy Heiger-Bernays, PhD is an associate professor of environmental health at the Boston University School of Public Health. She has worked in the field of environmental toxicology and risk assessment for nearly 20 years. Her research and teaching focus on research translation and science-based practical solutions to environmental health problems.

Jon Higgins is a Professional Earth Scientist with Bachelor and Master degrees in geology and recently completed graduate work towards a doctorate. He is a professional earth scientist and has been assisting individuals, companies, municipalities and non-profits assess and resolve their environmental challenges and needs related to soil, ground water, surface water and sediment for approximately twenty seven years. His primary areas of expertise are with: oil and hazardous material impact assessments and response actions; nutrient impact assessments and response actions; geothermal suitability assessment, design and oversight; and, hydrogeologic assessments for irrigation and potable water supplies. His recent graduate studies were related to the interaction between iron, phosphorus and arsenic in surface water and sediment. He is a Massachusetts Licensed Site Professional, a Certified Professional Geologist, and has additional training and certifications related to his areas of expertise.

Eric C. Hince, P.G. is the CEO and Principal Scientist of Acadian Technologies, LLC (Acadian) which he founded with partners David B. Johnson PE LLC and Marksmen Enterprises LLC earlier this year. Mr. Hince has more than 24 years of professional experience concerning subsurface investigation, remote sensing and remediation projects. Mr. Hince leads Acadian's research, development and delivery of *in-situ* bioremediation technologies and services to private sector clients. Mr. Hince has served as a consultant to numerous environmental contractors and consultants, insurance companies and government agencies including the U.S. Navy. Mr. Hince holds a B.S. in Geology and a M.S. in Marine Environmental Sciences from the State University of New York at Stony Brook. Mr. Hince is a licensed professional geologist (P.G.) in Pennsylvania and North Carolina, and holds environmental licenses in New Jersey and North Carolina. Mr. Hince holds thirteen (13) U.S. patents for bioremediation technologies designed for the remediation of soils, sediments and groundwater contaminated with

petroleum products, chlorinated solvents and organochlorine pesticides. 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 is a member of the American Society for Microbiology (ASM), and has previously presented at the University of Massachusetts, Battelle and IPEC conferences as well as other forums. Mr. Hince previously served on the scientific advisory board for the subject conference in the 2000s. Mr. Hince's current presentation is based on the application of his denitrification-based bioremediation ("DBB") technology, a process he has been working on since the early 1990s.

George E. Hoag, Ph. D., is Senior Vice President and Co-Founder of VeruTEK Technologies, Inc., a US-based Green Chemistry Technology company which specializes in surfactant-enhanced oxidation technologies. He is internationally known for his pioneering work in subsurface remediation over the past 30 years. Dr. Hoag discovered the use of persulfate and activated persulfate to remediate organic compounds, and is the primary inventor of the foundational patents related to the use of persulfate for remediation. In addition, he was the first academic researcher to study and deploy soil vapor extraction (SVE) for remediation in the U.S.

Adam Hoffman is currently a PhD student at the State University of New York College of Environmental Science and Forestry (SUNY ESF) in Syracuse, NY working in the lab of Dr. Lee Newman. He is originally from South Carolina where he earned both his B.S. in Biology and M.S. in Environmental Health Science from the University of South Carolina. Adam's current research project involves the use of Hyperspectral Imaging to determine Trichloroethylene plume migration.

Brad Horn is a registered chemical engineer with 29 years of experience in the design, construction and operation of hazardous waste and water treatment systems. He formed Redux Technology in 1990 to develop specific water treatment chemicals for the groundwater remediation market, technology which received patent protection in 1994. Since that time, he has served as lead technical director, managing product development and technical sales, with the company providing chemical water treatment programs to over 1500 remediation and construction sites. Since 2008, when the company merged with Azure Water Services, a diversified water treatment chemical company, Mr. Horn has served on the three-person corporate management team, and continues to direct the Redux Technology Division. Prior to establishing Redux, Mr. Horn operated his own design/build practice, and held various management and project positions at two major engineering consulting firms. He graduated with a BS in Chemical Engineering from Lehigh University in January 1982.

Ken Huang is a Senior Professional with Antea Group. He has a combined 19 years of environmental engineering, construction, consulting and industrial experience. Ken is the engineering lead for the Antea USA Northeast Hub and a member of both Antea USA Engineering Assurance Team and Antea USA ISCO Safety Review Team. His expertise includes site remediation, water/wastewater treatment, air pollution control, engineering design & construction, instrumentation, and analytical & field methods. He is considered an expert with the implementation of in-situ chemical oxidation using persulfate, permanganate, Fenton's reagent & ozone and surfactant-enhanced aquifer remediation technologies. He is also an accomplished author, having published numerous peer-review articles, conference papers, reports and presentations.

Gary Hunt (QEP) is a Principal Scientist and Vice President with TRC Environmental Corporation in the Lowell MA office. Gary is a career environmental consultant for both industry and government and a life-long environmentalist. He has over 34 years of experience in the environmental services industry. He has a BS in Chemistry from Villanova University and an MS in Environmental Sciences from Rutgers University. Areas of specialization include air quality monitoring, air toxics, environmental chemistry, litigation support, and the distribution, occurrences, transport and fate of Persistent Organic Pollutants (POPs) in the environment.

Glenn Nicholas Iosue has nearly 20 years of experience in the environmental consulting industry. He has a Professional Engineering licenses in multiple states, holds a B.S. in Bioenvironmental Engineering from Rutgers University, and is LEED Professional. Mr. Iosue has managed complex remedial investigations and cleanup programs, including in situ chemical oxidation (ISCO), air sparging,

bioremediation, soil vapor extraction, and other remedial technologies. He has a knack in developing effective, practical and innovative solutions to complex remediation issues. Mr. Iosue serves as a Corporate Engineer for GES. He provides senior technical review and program management for the design and execution of engineering and environmental solutions to multifaceted projects. Mr. Iosue also manages GES' niche remediation group; the Max-Ox Group. He most recently completed a large-scale \$3.7M Superfund remedial action that was highlighted in the Environmental Business Journal.

Graham Irvine is a M.Sc. student at the University of Ottawa working on his degree in Biology with a specialization in Chemical and Environmental Toxicology. He has a B.Sc. in Environmental Science from Trent University. His graduate research is studying soil ingestion rates in First Nations people that practice traditional lifestyles, and concomitant exposures to polycyclic aromatic hydrocarbons (PAH) in an oil sands extraction region of Alberta, Canada. The results will be used to improve assessment of risk in First Nations people engaging in traditional activities. His undergraduate thesis work examined the release of greenhouse gases from urban stormwater ponds.

Robert Kelley has over 25 years of experience with chemical oxidation and reduction technologies as an environmental researcher, consultant and vendor. Dr. Kelley is now the Vice President of Technology Development for ARS Technologies. ARS Technologies and its Hepure Division are a full-service supplier of in-situ remediation technologies including Pneumatic Fracturing, Ferox Emplacement, and Liquid Atomized Injection of Chemical Oxidants and Biological Substrate. Dr. Kelley has given technology presentation on In-Situ Remediation Technologies to hundreds of environmental professionals in North America and Europe. Dr. Kelley received his B.S. degree in Microbiology from Virginia Tech and his Ph.D. in Microbiology from Michigan State University. Dr. Kelley held a postdoctoral fellowship and postdoctoral research position at Washington University and Ohio State University. He has published over 30 peer-reviewed scientific journal articles, over 60 technical reports and papers, and has presented over 50 technical papers.

William B. Kerfoot is president of Kerfoot Technologies, Inc. (formerly K-V Associates, Inc.), located in Mashpee, Massachusetts. He is a Licensed Site Professional (hazardous waste) in the Commonwealth of Massachusetts and has over 25 years' experience in site assessment and remediation. He has over 10 years' experience in the design and implementation of subsurface ozone treatment systems. Site regions range from local drycleaner facilities or gasoline retail outlets to multiple block region plumes in major urban city regions. Dr. Kerfoot has conducted training workshops for AEHS and NGWA on in-situ chemical oxidation and contaminated soils, sediments, and water. He serves on the Scientific Advisory Board for the AEHS West Coast Conference. He also sits on the board of directors of the International Ozone Association, PAG, specializing in groundwater and soil applications. He was technical lead for ozone technology for both Letterkenny Army Depot and Paducah Workplan. Dr. Kerfoot holds numerous patents in processes and equipment currently used in groundwater retrieval, flow measurement, and remediation. Dr. Kerfoot has recently developed remediation technologies based upon oxidative microbubble reactions and has authored over fifty scientific publications.

Trevor King, P.E., is a senior project engineer for Langan Engineering & Environmental Services in Doylestown, Pennsylvania. Since 1993, Trevor has planned, implemented, and managed a wide variety of environmental projects in New Jersey, Pennsylvania, New York, Florida and Puerto Rico. His experience includes: project management, developing conceptual site models, remedial objectives and site-closure strategies for remediation projects, and preparing a variety of reports for submission to state regulatory agencies. His company-wide responsibilities include remedial-alternatives evaluations for soil and groundwater; developing detailed order-of-magnitude, final design and other estimates for remedial-closure strategies; designing and implementing conventional remediation systems and innovative remedial strategies; preparing engineering drawings and specifications; team building and staff mentoring. Trevor has been active in the Interstate Technology & Regulatory Council (ITRC) since 2008 and has contributed as a team member to four ITRC DNAPL documents. He earned a bachelor's degree in mechanical engineering from the University of Wolverhampton in Wolverhampton, England in 1983 and a master's degree in environmental engineering from New Jersey Institute of Technology in Newark, New Jersey in 1993. He is a Professional Engineer in environmental engineering in Delaware and has two pneumatic fracturing technology patents.

Karen Kinsella is an environmental biochemist with expertise in remedial diagnostics and bioremediation. She has more than 35 years of experience in the energy, construction, analytical, and radionuclide sectors. In addition to remediation of energy-sector wastes, including oily drill cuttings and acid tars, Karen's recent projects include bioremediation of chlorinated hydrocarbons and 1,4-dioxane-contaminated groundwater. Karen helps GZA teams assess the extent of degradation and understand degradation mechanisms. Karen is a former U.S. Department of Energy radionuclide researcher. Her experience includes bioremediation of soil and groundwater plumes contaminated with uranium and other radionuclides from spent nuclear fuel and weapons research. Karen's early fascination with soil and groundwater came from working as a dairy farmer and heavy equipment operator. In addition to planting a lot of corn, reclaiming cropland, and excavating many tons of soil, she spent one memorable winter on a Caterpillar D10, breaking rock and moving earth along interstate 95 in eastern Connecticut.

Mark Kluger is a graduate of Johns Hopkins University with a B.A. in Natural Sciences with a focus in chemistry, physics and material sciences. Mark has experience with field analytical and data acquisition instrumentation, site characterization, surface geophysics, multi-phase fluid flow, process optimization, and soil and groundwater remediation procedures and technologies, including bioremediation, chemical oxidation and heat. Mark is a member of the Interstate Technology and Regulatory Council and the Sustainable Remediation Forum. Mark has been a guest lecturer at Johns Hopkins University School of Public Health, Johns Hopkins University Department of Geography and Environmental Engineering, Millersville University, West Chester University, Bucknell, Villanova and Temple University. Further, Mark has presented technical papers at regional and national conferences including the University of Massachusetts Soils Conference, National Groundwater Association Fractured Rock Conference, and the Battelle Conference on the Remediation of Chlorinated and Recalcitrant Compounds. In February 2001, Mark founded Dajak[®], LLC, a company that provides business development services to firms with innovative environmental characterization and remediation technologies. Mark also provides technical guidance to these companies in the areas of marketing, industry trends and remedial solutions.

John C. LaChance is Vice President of Project Quality at TerraTherm, Inc. and has over 20 years of experience characterizing the hydrogeology, contaminant occurrence and behavior, and remediation of sites. He has a B.S. in chemistry and biology from the State University of NY at Oneonta and a M.S. in environmental science from the Environmental Science and Forestry School at Syracuse. His particular focus is on the evaluation and remediation of DNAPL sites. For the last 9 years Mr. LaChance has been involved with the design, implementation, and assessment of in-situ thermal remediation at numerous sites both in the U.S. and overseas. He currently manages several ISTR projects and provides technical support in the design and implementation of ISTR systems. Mr. LaChance is also the author of numerous papers and presentations on ISTR, groundwater modeling, and DNAPL remediation.

Fayaz Lakhwala is Technical Manager – Site Remediation at FMC Environmental Solutions, a company that specializes in soil and groundwater, water and wastewater and air treatment technologies. Dr. Lakhwala has 22 years of experience in the area of environmental consulting and site remediation. He has worked on projects in the US, Europe and Asia. His expertise is in the areas of in-situ chemical reduction, in-situ chemical oxidation and groundwater circulation wells. Prior to joining FMC, he was with the Adventus Group and URS Corp. Dr. Lakhwala has B.E. in chemical engineering from India and a MS and PhD in chemical engineering from NJIT, Newark, NJ.

Stefanie G. Lamb, P.G. is a New Hampshire licensed professional geologist with a technical focus in geochemistry. She has ten years of professional experience in hydrological studies and geochemical assessments. Ms. Lamb's thesis work, through the University of New Hampshire, was focused on determining the spatial and temporal distribution of select metals in marine sediments from Boothbay Harbor, Maine. This work included the use of lead isotopes as non-point source indicators of lead to the marine environment. Ms. Lamb provided support during similar project work throughout mid-coast Maine and southern New Hampshire. Ms. Lamb has experience in evaluating site hydrogeologic and geochemical conditions, aquifer testing/analysis, water supply protection and the evaluation of natural attenuation of soil/groundwater contaminants. Ms. Lamb's project work has included hazardous waste sites; asbestos disposal sites; petroleum release sites; and hydrogeologic projects ranging from small site

assessments to large remedial investigations at industrial facilities. Specific responsibilities has included evaluation of site hydrogeologic conditions, preparing and implementing remedial action plans, aquifer testing/analysis, water supply exploration, water treatment, State regulatory compliance and redevelopment of remediated industrial/commercial properties. Ms. Lamb is familiar with the New Hampshire and Maine groundwater and surface water protection rules as well as the NH Asbestos Waste Site Management Program. She has successfully prepared and/or implemented milestone documents including but not limited to site investigation reports, remedial action plans, asbestos disposal work plans, Quality Assurance Project Plans (QAPP), Sampling and Analysis Plans (SAP), and a Quality Control Management Plan (QCMP).

Minh Le is the Vice President and General Manager of C3 Environmental Limited, and has 19 years of experience in soil and groundwater remediation. A civil engineer graduate of the University of Waterloo, Mr. Le joined C3 Environmental Limited in 1993 as a Project Manager, and advanced to his present position of Vice President and General Manager. Mr. Le participated in the development of the Waterloo Barrier[®] and Funnel-and-Gate[™] systems through the Solvents in Groundwater Research Program at the University of Waterloo. He has worked through all phases of the Waterloo Barrier[®] and Funnel-and-Gate[™] developments from QA/QC and site engineering to Project Management of numerous field installations. Present and past responsibilities include: coordinated and planned research and development; designed and implemented the company's Health and Safety programs; standardized monitoring procedures to ensure project quality control; developed education and training programs for the implementation of new technologies; and developed and presented detailed proposals to meet the specific needs of clients.

Michael D. Lee is Vice-President of Research and Development at Terra Systems, Inc. (TSI), a consulting and service firm specializing in the development and application of technologies for the bioremediation of surface and subsurface contaminants. He has a Doctor of Philosophy (1986) and Master of Science (1983) degrees in Environmental Science and Engineering from Rice University and a Bachelor of Science degree in Biology from University of Louisiana at Monroe (1980). Dr. Lee has over 25 years of experience in the field of bioremediation with expertise in applying in situ anaerobic bioremediation of chlorinated solvents and metals, implementing in situ aerobic bioremediation of hydrocarbons and other contaminants in groundwater and waste impoundments, conducting biodegradation and chemical oxidation treatability studies, and assessing natural attenuation of organic contaminants. He has been HAZWOPER certified since 1988. Dr. Lee was a technical lead for the first successful demonstration of bioaugmentation to promote the complete anaerobic biodegradation of trichloroethene and cis-1,2-dichloroethene for the Remediation Technologies Development Forum at Dover Air Force Base. Terra Systems was a participant in the Source Area BioREmediation (SABRE) project in the United Kingdom that demonstrated in the laboratory and field the anaerobic bioremediation of dense non-aqueous phase trichloroethene. He has conducted laboratory microcosm, column studies, and field demonstrations of the anaerobic bioremediation of chlorinated solvents and chemical oxidation at over hundred sites. He jointly holds the patent on the use of emulsified soybean oil to support complete reductive dechlorination of chlorinated solvents. Dr. Lee has published over 100 articles in peer-reviewed journals, conference proceedings, or books.

Domen Lestan is currently Professor in the department of Agriculture in the University of Ljubljana, Slovenia. He is also a co-funder and CTO of Envit Ltd, a company for environmental engineering and technology, a spin off from University of Ljubljana. Prof. Lestan received his M.Sc. and Ph.D. degrees in Chemical Engineering from University of Ljubljana and was a post-doctoral fellow at Forest Product Laboratory in Madison, Wisconsin. He has authored more than 70 peer-reviewed journal articles and 9 patents. Prof. Lestan was recipient of 2009 national Ziga Zois award in recognition of his outstanding research achievements and 2010 national Best Mentor award for excellence in teaching.

Matt Levinson is a Senior Remediation Engineer with more than seventeen years of engineering design and remediation experience. This experience includes remediation system analysis, design, and optimization; remedial strategy development; field engineering and construction oversight; proposal and budget development; and regulatory correspondence. He is currently serving as the engineering design lead for the remediation strategies at multiple MGP sites. These strategies include source removal, in-

situ technologies, and plume remediation. His remediation system experience includes high-vacuum dual phase extraction (DPE), soil vapor extraction (SVE), groundwater pump and treatment, bioremediation, demolition, in-situ chemical oxidation (ISCO), in-situ stabilization (ISS), oxygen injection technology, and sludge stabilization/solidification. Mr. Levinson is currently serving as the Branch Manager for GEI's NY Metro Offices in Manhattan, NY and Montclair, NJ.

Laurent Levy is a senior project manager at Gradient, a privately-held, environmental and risk science consulting firm headquartered in Cambridge, Massachusetts, providing services to clients across the United States and internationally. At Gradient, Laurent's areas of practice include subsurface environmental investigations, vapor intrusion assessment, chlorinated solvent characterization, and site remediation. Laurent holds an undergraduate degree from the Ecole Centrale Paris, an engineering school located in France, as well as a Ph.D. in Civil and Environmental Engineering from the Massachusetts Institute of Technology. He is a registered Professional Engineer in Massachusetts.

Baolin Liu born in 1976 and in Inner Mongolia, China, is a Chinese environmental geochemist. He graduated from China University of Geosciences and majored in Geochemistry (B.S., 1996; M.A., 2002) and Environmental Engineering (Ph.D., 2005). He teaches marine geochemistry at the School of Marine Sciences, China University of Geosciences in Beijing, and is an associate professor. Between 1996 and 1999, he was engaged in geochemical and geophysical prospecting of blind gold mine in eastern China (Shandong Province) at the Geophysical Exploration Institute of Ministry of Metallurgical Industry, China. From 1999 to 2005, he carried out some geochemical studies on sediments in the South China Sea (Ocean Drilling Program (ODP) 184 voyage) and organic pollutant investigations on groundwater and soil in the South China (Wuxi and Suzhou city in Jiangsu Province). From 2005 to present, his interests mainly focus on heavy metal pollution investigation and assessment in sediment, soil and water associated with gold mine exploitation, and distribution, migration and enrichment of heavy metals in lake and coast sediment.

Paul Locke has been with the Massachusetts Department of Environmental Protection (MassDEP) since 1987 and is the Director of Response and Remediation for the Bureau of Waste Site Cleanup (BWSC). In this role Mr. Locke oversees operational aspects of the privatized cleanup program, including site management, compliance assistance, enforcement and the management of data systems. In addition, he is involved in the development and implementation of regulations, emergency response activities, etc. As past head of the Department's Risk Analysis Group, he developed rules on characterizing human and environmental risks at waste sites and was co-author of the Department's Guidance for Disposal Site Risk Characterization. Currently Mr. Locke is focusing on the BWSC implementation of environmental regulatory reform, completing the program's transition to online document submittals and file review, and providing structure and clarity to the management of soil in the Commonwealth. Mr. Locke holds a Bachelor's degree in Chemistry from Harvard College, a Master's degree in Civil Engineering from the Tufts University program in Public Health, and cannot hold a tune.

Pete Long is the Government Services Account Manager for EQ Northeast, Inc. He has been with EQ for 8 years to date and has over 15 years of experience in hazardous waste operations, management and sales. Mr. Long served as EQ Northeast's Field Service Manager (FSM) from 2004 until 2006 when he became the Massachusetts and Connecticut Account Executive (A/E) for EQ. As the FSM, Long was responsible for all daily labor services and operations for EQ's project sites and service centers in the Northeast. As the MA/CT A/E, Mr. Long's focus was field services, transportation, disposal and industrial service sales within a territory that grew to eclipse \$8.5M in Sales. In 2011, Mr. Long became the Government Services Account Manager for EQ Northeast focusing on EPA and USACOE remediation, transportation and disposal services. Throughout Mr. Long's career, he has managed and sold transportation and disposal services for PCB contaminated debris and materials. As a result of Mr. Long's territory, a focus was centered on the management, handling and disposal of PCB Bulk Product and Debris. This focus has resulted in Mr. Long becoming EQ's resident expert in the area for the management of PCB Construction and Building materials. Mr Long has previously spoken at several EBC and SAME events focusing on the management of Bulk PCB Product and Debris. Mr. Long graduated from The University of Rhode Island with a Bachelor Science degree 1994. He is an active member of the Society of American Military Engineers (SAME) and the Environmental Business Counsel

(EBC). Prior to working in the environmental field Mr. Long was a college football coach for several NCAA institutions.

George Losonsky, Ph.D., P.G. has over 30 years of experience as a hydrogeologist solving problems of physical and chemical processes in saturated and unsaturated soils, sediments, and bedrock. He received his academic training at Oberlin College and the University of Cincinnati. In the last 25 years, Dr. Losonsky has worked in research and development for the USEPA, developed horizontal well applications for site remediation with Directional Technologies, Inc., and managed site investigation, remediation and closure at petroleum and chlorinated hydrocarbon impacted sites under RCRA, various state programs, and at commercial redevelopment sites throughout the USA and overseas.

Ethan Magee is a hydrogeologist with Langan Engineering & Environmental Svcs. in Doylestown, PA. He holds a bachelor degree in geology from Franklin and Marshall College. Mr. Magee is experienced in environmental remediation, managing complex databases, and environmental site assessment with a focus on visualizing and solving complex hydrogeologic issues in unconsolidated and bedrock aquifers.

Shirin Mardani, is a M.Sc. student, teacher and research assistant in Civil Engineering at University of Massachusetts Lowell (2011-2012). Shirin graduated with a BS in Civil Engineering from Sharif University of Technology. Currently, Shirin is working toward a Master of Science focusing on remediation of contaminated groundwater.

James Marolda, C.P.G., P.G is a principal geologist/hydrogeologist with over 12 years of experience with investigation and remediation projects at manufactured gas plant (MGP) sites, solid waste landfills, and large industrial facilities. For the past seven years, Mr. Marolda's main focus has been implementation of remedial investigations at former MGP sites and providing hydrogeologic support for remediation of these sites.

Gerard Martin has more than twenty-five years combined consulting and regulatory experience. Mr. Martin has been the Chief in the Bureau of Waste Site Cleanup at the Southeast Regional Office (Lakeville) of the Massachusetts Department of Environmental Protection (MassDEP) since April 1995. In this capacity Mr. Martin provides supervision of the complex sites; oversees the Compliance and Enforcements efforts in the Region; serves as the Region's Technical Brownfields Coordinator; and manages and directs the work associated with the review and issuance of Waste Site Cleanup Permits, management of the risk reduction measures and other selected response actions at the more complex sites. More recently, Gerard has been overseeing the workgroup to develop new Vapor Intrusion Guidance for MassDEP. Prior to working at the DEP, Mr. Martin was a Senior Hydrogeologist at SAIC Engineering, Middleboro, MA and Hydrogeologist at GHR Engineering in Lakeville, MA.

Michael Martin is a member of Tighe & Bond's site assessment and remediation staff, with a focus on MCP and solid waste sites. He has extensive experience in the field overseeing drilling operations, test pitting activities, comprehensive site assessment, emergency response activities, underground storage tank removal, soil remediation activities, surveying, and sampling of soil, groundwater, sediment, surface water, soil gas, and indoor air. His chemical engineering background, as well as his project experience, has equipped him to contribute to a variety of environmental site assessment and remediation of commercial and industrial Brownfields, surface water and stormwater quality assessment, and landfill assessment, closure, and monitoring.

Kris Masterson is senior water resources specializing in the application of numerical models to study vadose zone and groundwater flow and transport for remediation investigations and water resources management studies. During her 23 years as a CDM Smith water resources engineer, Ms. Masterson has managed and participated in a wide range of studies including groundwater remediation investigation and feasibility study (RI/FS) projects, vadose zone transport analysis, water supply investigations, and water resources and watershed management studies.

John M. Mateo is President of Blue Lightning Underground Enterprises, LLC (BLUE), an operating company of Resource Renewal, LLC in Moorestown, New Jersey, USA. Mr. Mateo has more than 30 years of professional experience in hazardous waste and natural resource consulting, environmental site assessments, investigations, and remediation projects located throughout the United States. Mr. Mateo was a former regulator with the US EPA Region II and the NJ Department of Environmental Protection. His experience also includes the application of innovative information technology for the environmental industry. Mr. Mateo holds a B.S. and M.S. from Rutgers University in Environmental Science. Mr. Mateo's project knowledge includes environmental site assessments, due diligence audits, New Jersey ISRA process compliance, intrusive site investigations (including the application of Triad protocols), bench scale and feasibility studies, soil and groundwater remedial actions, and post closure monitoring. Mr. Mateo has experience with the development of life cycle cost estimates and probabilistic modeling for risk management applications (e.g. reserve setting, liability transfers, portfolio management). He also has extensive experience with the use of information technologies to collect, manage, reduce, analyze, visualize, store and distribute facility, property, and contaminant characterization data.

Bethany McAvoy is the Technology Manager at VeruTEK Technologies in Bloomfield, CT. She manages development of messaging and deliverables used to communicate scientific research and concepts based on the company's green chemistry technologies to the VeruTEK internal sales and marketing departments, as well as external audiences in the remediation and enhanced oil recovery markets. Bethany also manages the company's collaborations with universities for R&D, coordinates third-party laboratory testing and compliance verification, and works with regulatory agencies at the state and national level to ensure compliance and register new products. Bethany holds a BA degree in biology and classics from the University of Connecticut, and is currently earning her Master of Science degree in Chemistry from the University of Connecticut.

Scott McDonough is an environmental engineer at AECOM. Mr. McDonough graduated with a B.S. in Civil Engineering and an M.B.A in Environmental Management from Clarkson University. Since graduation Mr. McDonough has gained real world experience in implementing green & sustainable tools and practices and is currently involved in managing AECOM's NYSDEC DER-31 compliance program. In addition, Scott works on national and international AECOM sustainable programs and acts as a committee member for America's SURF program.

Thomas McHugh, Ph.D. D.A.B.T. is a Vice President with GSI Environmental Inc., in Houston, Texas. He is a Diplomate of the American Board of Toxicology and has over 20 years of experience in the environmental industry. He received a B.A. in Biochemistry and Environmental Science from Rice University (1990), an M.S. in Environmental Engineering from Stanford University (1993), and a Ph.D. in Toxicology from the University of Washington (1997). Dr. McHugh's major areas of focus are i) human and ecological risk associated with soil and groundwater contamination, ii) risk management, and iii) cost-effective site investigation and remediation.

Justin McMullen is an undergraduate student in biotechnology at the SUNY College of Environmental Science and Forestry. In addition to his studies, he also researches nanoparticle impacts on microbial life in the Dr. Newman lab at SUNY-ESF. In addition to this, he is a Research Aide through the Research Foundation at SUNY-ESF.

Nancy Milkey, P.G., LSP, is a Project Manager in the Hydrogeology Group at Tighe & Bond, an environmental and engineering consulting firm headquartered in Westfield, Massachusetts. She specializes in the assessment and remediation of oil and hazardous material spills and has over 18 years experience working on assessment of brownfields sites. Ms. Milkey holds a masters' degree in Hydrogeology from the University of Massachusetts at Amherst and she is a Licensed Professional Geologist in the state of New Hampshire and Licensed Site Professional in Massachusetts.

Christine Millner is an experienced project manager for emergency response, remediation, industrial hygiene, vapor intrusion, industrial and hazardous waste, odor investigation, and regulatory compliance projects. She has production and research laboratory experience, initiated the CTEH data validation group, and operates and maintains specialty field monitoring and sampling equipment, which highlights

her vast technical and analytical abilities. Christine has been engaged in field sampling aspects of vapor intrusion projects for several years utilizing the portable GC/MS. In general, she has managed large-scale projects and worked closely with federal and state regulators to meet project compliance and data quality needs. Recently notable, she was the Air Program Lead during the Gulf Oil Spill and managed three air monitoring and sampling programs as part of the incident command structure.

Robin Mongeon is a project manager for the State of New Hampshire Department of Environmental Services (DES) Waste Management Division's Superfund program. Robin is the primary point of contact for Vapor Intrusion issues at DES. She provides technical oversight review of vapor intrusion related work plans and related indoor air issues for Site Remediation Program staff. Robin was a member of the Interstate Technology & Regulatory Council (ITRC) Vapor Intrusion Team from 2004 until 2007, and served as the ITRC Vapor Intrusion Classroom Training Team Co-Lead from 2009-2011. Robin is responsible for rule and policy development including the DES Vapor Intrusion Guidance document. Robin has been with DES for over 18 years, prior to that she worked in the private sector for environmental consulting firms. Robin is a registered professional engineer who earned her Master of Science in Environmental Studies from the University of Massachusetts, and a Bachelor of Science in Environmental Engineering Technology from Norwich University.

Will Moody has over 10 years of environmental consulting and site remediation experience. For the last eight years, he has been working with Geo-Cleanse's innovative remedial design and marketing departments. Currently, Mr. Moody is Director of Sales & Marketing and a Project Manager for Geo-Cleanse. Mr. Moody has managed two of the largest in-situ chemical remediation projects ever performed in the U.S., and has been involved with several projects in Europe. His work for Geo-Cleanse also includes field operations, site analysis, and laboratory studies. Mr. Moody has a B.Sc. degree in Environmental Science from Virginia Polytechnic Institute and State University.

Matt Moran is employed as an Environmental Analyst for the Vermont Department of Environmental Conservation (VT DEC). He received his Bachelor's degree from the University of Vermont in 1993, and currently is matriculating into their Public Administration Graduate School. Matt Moran has also just completed the four year Leadership and Management Program for his agency, which includes a two-year Vermont Public Manager Program. He has 18 years experience at VT DEC managing the investigation and cleanup of hazardous waste sites. He also has experience in emergency response. He volunteered for 10 years as an Emergency Medical Technician serving with both Waterbury Ambulance and Richmond Rescue. He also has been a member of the VT DEC Spill Response Team for over 14 years, ensuring that responsible parties address hazardous materials releases, and with the Vermont Hazardous Materials Response Team for over 15 years, assisting Fire Departments and other agencies with emergency hazmat incidents.

Douglas Mose, B.S., M.S., Ph.D. currently teaches environmental geochemistry at George Mason University in Fairfax, VA. With graduate students, he studies problems related to radioactivity and related to hydrocarbon contamination in air, water and soil. On these issues, and others, he is a consultant to law firms, environmental testing companies and colleges developing undergraduate programs. He directs a Virginia alternate energy corporation, and its research facility in central Virginia.

David Murphy is a Vice President with Tighe & Bond. He has 26 years of senior project management experience, specializing in landfill engineering, materials management, site-civil design, & renewal energy. He has managed major infrastructure project in the aftermath of the 2004 Tsunami, led an Environmental Engineering firm and managed major and complex projects for the Commissioner's office of the Massachusetts DEP helping to manage the environmental oversight of the \$14.5 Billion Big Dig, and served as the states lead landfill engineer.

Michael Murphy currently serves as a Senior Principal Risk Assessor and Senior Project Manager with AMEC Environment & Infrastructure, Inc. in Westford, Massachusetts. Michael holds degrees in Biology from Merrimack College and Environmental Biology from the University of North Carolina's School of Public Health in Chapel Hill. Michael served as an Environmental Analyst and Risk Analysis Group Leader in the Massachusetts Department of Environmental Protection's Office of Research and

Standards throughout the 1980s and early 90s. At the Mass DEP Michael participated in the development of the Massachusetts Contingency Plan and associated guidance and also conducted and supervised risk assessment activities. In his consulting role AMEC over the last 20 years, Michael has conducted and directed risk assessment activities, developed site closure strategies, managed site investigation, vapor intrusion, and risk assessment projects, and communicated risk assessment findings to regulatory agencies and the public. Michael's experience includes projects related to manufacturing, chemical, and energy facilities and defense sites. Michael has experience in site assessment, risk assessment, mitigation and remediation, and redevelopment of sites subject to CERCLA (particularly National Priorities List sites) and RCRA requirements as well many State Regulatory Programs throughout the United States.

Jonathan Myers has a Ph.D. in Geochemistry plus 30 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.

Carla Nascimento is a Senior Project Manager at Antea Group located in Bridgewater, New Jersey USA. Ms. Nascimento has more than 15 years of professional experience in the environmental consulting field, with a strong background in managing complex projects. She is a licensed Professional Geologist and a New Jersey Department of Environmental Protection (NJDEP) Licensed Site Remediation Professional (LSRP). Ms. Nascimento holds a B.S. in Geology, a M.S. in Geosciences with emphasis in Hydrogeology and Stable Isotopes, and is currently working on a Ph.D. in Environmental Sciences. Ms. Nascimento's project knowledge includes portfolio management of sites across five States, environmental site assessments, including compliance with the New Jersey ISRA process, site investigations, site remedial actions, post-closure monitoring, groundwater modeling, aquifer analysis, vapor intrusion investigations, and Lifetime Reserve Costs preparations including probabilistic modeling for risk management of projects (such as liability transfers and portfolio management).

Katherine Neafsey Engler is currently a Ph. D. student of Environmental Toxicology at Cornell University. Her research focuses on the development of a novel method to assess the bioavailability of estrogen-like endocrine disrupting compounds in soil. She received a BS with Distinction in Research from Cornell University, and published a paper on the use of the Fenton method, an advanced oxidation process, to degrade sulfonamides in water.

Sheldon Nelson is currently a Hydrogeologist with Chevron Energy Technology Company in San Ramon, California, having formerly worked as a Geologist/Micropaleontologist during the 1980s, also with Chevron. Sheldon has a Bachelor of Science degree in geology from the State University of New York at Albany, and graduate degrees in geology from Queens College and Brown University.

Lee Newman is an Associate Professor of Plant Biotechnology at the State University of New York College of Environmental Science and Forestry. Her work has included the genetic engineering of plants for increased tolerance to heavy metal stress and increasing degradation of organic compounds, uptake and degradation of chlorinated solvents and aromatics, fuel additives, pesticides, energetic compounds, and nitrogen reduction in soil and groundwater; and has included a variety of trees, herbaceous plants and grasses. In addition to the laboratory work, she has worked on the installation of a number of phytoremediation sites. Dr. Newman is also working with NASA to develop hyperspectral imaging technologies to determine plant exposure to environmental contaminants and is doing research on the use of endophytic bacteria to increase plant growth for biomass and agricultural production. Dr. Newman's most recent area of research is the toxicological study of nanoparticles in the environment, and how crop plants respond to exposures to a range of nanoparticles. Work also includes the impact of nanoparticle accumulation on insects that might feed on exposed plants, and the potential for the particles to move through the food chain. Dr. Newman is co-Editor in Chief for the International Journal of Phytoremediation; founding member and currently Immediate Past President of the International Phytotechnology Society; founding member of the Northeast Phytotechnology Society; and Scientific

Advisory Board member of the Association of Environmental Health Science. In the past five years, Dr. Newman has given over 50 invited talks about her research, including 19 in international venues.

Ken Olden joined the National Center for Environmental Assessment in July 2012 with a strong legacy of promoting scientific excellence in environmental health. From 1991-2005, Ken served as the Director of the National Institute of Environmental Health Sciences (NIEHS) and the National Toxicology Program (NTP) in the U.S. Department of Health and Human Services. Ken made history in this role as the first African American to direct one of the National Institutes of Health. In 2005, he returned to his research position as chief of The Metastasis Group in the Laboratory of Molecular Carcinogenesis at the NIEHS, and for academic year 2006-2007, held the position of Yerby Visiting Professor at the Harvard School of Public Health. Most recently, Ken served as the Founding Dean of the School of Public Health at the Hunter College, City University of New York. He has published extensively in peer-reviewed literature, chaired or co-chaired numerous national and international meetings, and has been an invited speaker, often a keynote, at more than 200 symposia. Ken has won a long list of honors and awards including the Presidential Distinguished Executive Rank Award, the Presidential Meritorious Executive Rank Award for sustained extraordinary accomplishments, the Toxicology Forum's Distinguished Fellow Award, the HHS Secretary's Distinguished Service Award, the American College of Toxicology's First Distinguished Service Award, and the National Minority Health Leadership Award. Alone among institute directors, he was awarded three of the most prestigious awards in public health--the Calver Award (2002), the Sedgwick Medal (2004), and the Julius B. Richmond Award (2005). Most recently, he received the Cato T. Laurencin MD, PhD Lifetime Research Award from the National Medical Association Institute, the largest and oldest national organization representing African American physicians and their patients in the United States. He was elected to membership in the Institute of Medicine at the National Academy of Sciences in 1994 and appointed member of the Visiting Committee for the Harvard University Board of Overseers from 2007-2010. Dr. Olden holds the following degrees: Temple University, Philadelphia, P.H.D., Cell Biology and Biochemistry, 1970, Michigan State University, East Lansing, M.S., Genetics, Knoxville College, B.S., Biology.

Joshua Orris is a Senior Project Manager with more than 13 years of environmental engineering consulting experience. Mr. Orris received a Bachelor's of Science degree in Environmental Engineering Technology from The Pennsylvania State University (1998). Mr. Orris' current responsibilities include the overall management and collaboration of global project teams in support of our Client's Environmental Health & Safety business needs. Mr. Orris' has extensive experience with the management, design and implementation of domestic and global phases of site assessments, site remediation, remediation construction, construction management, permitting, insurance risk management and regulatory compliance auditing.

Shail Pandya is a graduate of D.D.I.T., India with a Bachelor's degree in Chemical Engineering and of Carnegie Mellon University with a M.S. in Environmental Engineering. He is a senior project manager for AECOM and manages the cleanup and development of brownfield sites under the framework of superfund jurisdiction, consent orders, or state and federal brownfield grants. Mr. Pandya specializes in creating multi-disciplinary team of experts to implement remedial investigations and designs, innovative site closures strategies, and in community and regulatory relations.

Om Parkash (Dhankher) is currently an Associate Professor in the Stockbridge School of Agriculture, University of Massachusetts, Amherst. Dr. Parkash's special research focus is on phytoremediation of toxic metalloids arsenic with particular emphasis on engineering non-food high biomass plants with enhanced phytoremediation capabilities. Contrary to phytoremediation of arsenic, Dr. Parkash is also engineering food crops (rice and canola) for blocking the uptake of arsenic in the food chain in order to improve human health. Additionally, his research team is identifying the key pathways and network of genes involved in uptake, sequestration and detoxification of heavy metals and manufactured nanoparticles in model plants Arabidopsis and Crambe and important food crop such as rice.

Nidhi Patel is a hydrogeologist who works as an integral part of the LNAPL team at AECOM under Andrew Kirkman and Trevre Andrews. Ms. Patel focuses on the development of LNAPL site conceptual

models, analysis of LNAPL Transmissivity mobility testing and modeling, mass flux analysis, and optimization of hydraulic recovery systems. Currently she is focusing on the optimization of a large hydraulic recovery system in the Midwestern United States, developing calibration models and tools for determining LNAPL endpoints. Ms. Patel also works on the remediation of DNAPL sites including former Manufactured Gas Plants in the New York area and a rail site impacted with creosote.

Kelly G. Pennell is an assistant professor at the University of Massachusetts-Dartmouth (UMass-Dartmouth) in the Civil and Environmental Engineering Department. She received her BS in Civil Engineering from Lawrence Technological University, an MS in Environmental Engineering from Rose-Hulman Institute of Technology, and a PhD in Civil (Environmental) Engineering from Purdue University. Prior to joining the faculty at the University of Massachusetts-Dartmouth, she served as a research faculty member at Brown University. Generally speaking, her research is aimed at better understanding the fate and transport of environmental contaminants. She is particularly interested in connecting research, practice and policy, such that health risks can be better characterized and mitigated.

Elizabeth Perry is a Sr Hydrogeologist with AECOM's Chelmsford, Massachusetts office. She has over 27 years of experience in evaluating environmental impacts to groundwater systems and use of quantitative tools such as statistics and numerical modeling in decision-making. She is a licensed professional geologist in Pennsylvania and Indiana.

Jon Pesicka is a Senior Consultant with Antea Group in St. Paul, MN. He has 26 years of oil industry and environmental consulting experience and is a registered Civil Engineer in 11 states. He has extensive experience with reducing or extinguishing environmental liabilities for large national portfolios of contaminated sites. He specializes in hydrocarbon site investigation, effective remedial approaches, facility decommissioning and demolition, and EHS compliance issues. He is also the Environmental Liability Management Practice Leader for Antea Group USA.

R. Paul Philp is Professor of Petroleum and Environmental Geochemistry at the University of Oklahoma. He received his Ph.D. from the University of Sydney, Australia in 1972 and a D.Sc. from the same University in 1998 on the basis of his research in geochemistry over the past 20 years. Prior to starting at the University of Oklahoma in 1984 Dr. Philp was a Principal Research Scientist, C.S.I.R.O., Sydney, Australia. His current research interests center around petroleum, environmental and forensic geochemistry with an emphasis on molecular and isotopic characterization of oils, gases, rock extracts and contaminants for the purposes of source determination, characterization of depositional environments, maturity, biodegradation and for correlation purposes. Much of the current research activity in the area of forensic geochemistry involves the use of stable isotopes for the purposes of fingerprinting contaminants in the environment for correlation purposes; source determinations and evaluating whether or not natural attenuation is active. This approach is particularly valuable in the case of refined products or single component contaminants when the more traditional GC and GCMS techniques are of little or reduced use. He has authored or co-authored over 380 articles and books and has lectured extensively on petroleum and environmental geochemistry in SE Asia, South America, Europe and Africa.

Lok R. Pokhrel is a Ph.D. candidate in the Department of Environmental Health at East Tennessee State University, TN. His research seeks to understand the fate, transformation, and ecotoxicity of metal-based engineered nanomaterials, risk assessment of environmental contaminants, green chemistry, nanowaste management, univariate and multivariate analyses of large dataset, and quantitative and system dynamics modeling. He holds double Master's Degree in Biological Sciences, has co-authored three textbooks on *Environment and Population* for junior high schools in Nepal, and has earned 10+ years of teaching and mentoring experiences in Environmental and Biological Sciences. Mr. Pokhrel has published in high impact journals such as *Critical Reviews in Environmental Science and Technology*, *ACS Environmental Science and Technology*, and *Science of the Total Environment*. He has presented his research in several national and international conferences. Recently, Mr. Pokhrel was a recipient of *AEHAP/CDC Best Student Research Award, 2012*; *Adventus Americas Best Platform Presentation Award, 2011*; and the *Appalachian Student Research Forum Best Student presentation Award, 2008*, among others. Drs. Brajesh Dubey and Phillip Scheuerman are Mr. Pokhrel's Ph.D. advisors.

Donald Pope has worked for CRA performing gas chromatography and gas chromatography/mass spectrometer analyses for 9 years. He has been responsible for performing all gas chromatography analyses on groundwater, soil, and gas samples for the treatability studies conducted. The analyses have consisted of volatile organic compounds(VOC), semi-volatile organic compounds(SVOC), pesticides, PCBs, petroleum hydrocarbons, and metabolic acids. The petroleum hydrocarbon analyses include the typical gasoline and diesel range analyses along with some forensic characterization. Besides gas chromatograph analyses, he also performs nutrient, microbial plate count, and metals analyses. He is also responsible for the day to day running and maintenance of the laboratory. He conducts the calibration of not only the gas chromatographs, but also the other instruments used in the laboratory. In the laboratory he performs the treatability studies. The treatability studies consisting of simple chemical oxidation and reduction treatments of soil and groundwater, biological degradation studies, column studies and solidification/stabilization treatments of soil.

Thomas M. Potter has over twenty years of experience working in the field of waste site cleanup. He 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), Mr. Potter ensures project-specific support and coordination of parties seeking to develop renewable energy and energy efficiency projects in Massachusetts; provides 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 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 programs and regions in the agency using innovative and efficient approaches to the agencies environmental protection programs, as well as the use of innovative technologies by our regulated community. Prior to his help with this Team, Mr. Potter served for ten years as the Statewide Audit Coordinator for MassDEP's Bureau of Waste Site Cleanup Audit Program in Boston. As the Statewide Audit Coordinator, Mr. Potter was responsible for the implementation and operation of the legislatively mandated Audit Program, as well as, the legislatively mandated audit of Activity & 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 5 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 Bachelor of Science degree in Geography from Arizona State University in Tempe, Arizona.

Angela Powley has 7 years of project experience with Pennsylvania Act II and UST, Phase I and Phase II environmental site assessments, UST investigations/removal in New Jersey and Pennsylvania, New Jersey Brownfields, New Jersey Industrial Site Recovery Act (ISRA), Pennsylvania and New Jersey Indoor Vapor Intrusion Investigations, and third party quality assurance. As a Project Geoscientist, her primary responsibilities include management of environmental site investigation and remediation projects, implementation of field work associated with those projects, and quality assurance management. Ms. Powley is the Chair of the Volunteer and Outreach Committee for the Society of Women Environmental Professionals (SWEP) and has held a position on the board of directors for 4 years. Ms. Powley received a Bachelor of Science Degree in Biology/Environmental Science from Edinboro University of Pennsylvania in 2003 and a Master of Science Degree in Environmental Health and Engineering from Gannon University in 2005.

Tracy Punshon received her degree and Ph.D. at Liverpool John Moore's University (Liverpool, UK) studying innate and inducible metal tolerance and resistance in a wide range of willow (*Salix*) accessions, with applications in phytoremediation and biomass production. Working on metal contaminated soil remediation led her to two post-doctoral fellowships at the Savannah River Ecology Laboratory (University of Georgia) During the second post-doctoral fellowship, Dr. Punshon worked with Dr. Paul Bertsch and beamline scientist Dr. Antonio Lanzirotti at the National Synchrotron Light Source (Brookhaven National Laboratory), using synchrotron X-ray fluorescence (SXRF) to image metal distribution in plants colonizing metal-impacted environments. Dr. Punshon was among the first plant

scientists to use SXRF on plant tissues. In 2005 Dr. Punshon began working as a trainee in the Superfund Research Program at Dartmouth College, with the eminent scientist Dr. Mary Lou Guerinot, using SXRF to help characterize the nutrient metal-related phenotypes in mutant Arabidopsis seed, publishing the first study to use SXRF in characterization of a plant gene. Since then, Dr. Punshon has worked to realize potential of metal imaging (and related techniques such as X-ray absorption spectroscopy and X-ray diffraction) in the characterization of metal ion homeostasis genes in hydrated plant tissues, with the ultimate aim of engineering (or breeding) crop plants that are able to exclude contaminant metals or accumulate greater quantities of bioavailable nutrients, to protect and enhance human health. She now collaborates actively with three US synchrotron facilities (NSLS, Advanced Photon Source and Stanford Synchrotron Radiation Lightsource), and the Australian Synchrotron to integrate spatially resolved metal analysis with plant ionomics.

Charles M. "Mike" Reynolds received BS and MS degrees in soil science and soil fertility/chemistry, respectively and a PhD in soil microbiology. After post doctoral research in soil enzyme systems, he joined the Cold Regions Research and Engineering Laboratory (CRREL) in Hanover, NH as a research scientist. He established and leads CRREL's soil microbiology laboratory, focusing on soil biochemical processes including bio- and phyto-remediation at cold, remote sites. Recent projects are investigating bio-inspired sensor phenomena in surface soils, soil-plant-microbial-sensor systems, novel uses of biopolymers in soil, microbial fuel cells in soils, and rapid, stand-off techniques for characterizing soil biology. He also serves on review panels, graduate student committees, mentors junior technical staff and is on the editorial board of the *Journal of Soil Sediment Contamination* and is senior associate editor for the *International Journal of Phytoremediation*. In 2007 he received a Lifetime Achievement Award at the AEHS Annual International Conference on Soils, Sediments and Water for his soil remediation research. He has also received an ERDC-CRREL Lifetime Achievement Award in 2011 for Wide Recognition of Scientific Contribution, and the 2011 Army Research and Development Achievement Award for Technical Excellence - Next-Generation Advancements in Microbiological Sensing and Sensors.

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/Sciencetech in addition to Geotech. With Geotech, Dr. Rich has worked with well-known corporations, federal, state and local governments, and small businesses and is a recognized expert in the field of earth science computing. 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 data management and other earth science computing topics.

Brian Roden is a Project Scientist at AMEC Infrastructure and Environment's Wakefield, MA office. He holds a BS in Environmental Science and Policy from Clarkson University. His work is focused on human health and ecological risk assessment. He has conducted risk assessments under CERCLA, MCP as well as many other state programs. He has evaluated risk associated with a variety of different media including soil, sediment, surface water, groundwater, biota, and air. He is involved in planning site investigation activities to provide input on data necessary to complete risk assessment activities. He also incorporates the use of GIS into risk assessment to aid in defining exposure areas, calculating exposure point concentrations, and hot spot evaluations. He has developed risk based Preliminary Remediation Goals for various receptor scenarios to aid in site closure and cleanup.

Richard Royer graduated from Rutgers University with a BS in Environmental Science and earned an MS in Environmental Pollution Control and PhD in Environmental Engineering from The Pennsylvania State University. Rich's graduate work focused on anaerobic environmental microbiology. Prior to joining GE Rich worked at Penn State as a Research Associate focusing on the biogeochemistry of iron reduction. Rich is presently the head of the remediation team at the General Electric Global Research

Center in Niskayuna, NY. His present work focuses on evaluating remediation technologies and providing scientific and engineering support to GE remedial projects. His work ranges from laboratory studies to support of full scale remedial system implementation. While he works on a range of contaminants including PCBs, chlorinated solvents, metals and inorganics he still has a special interest in the biogeochemistry of metals.

Michael V. Ruby is an environmental chemist with over 20 years of experience in site investigation and remediation, environmental chemistry, exposure analysis, and regulatory affairs. Mr. Ruby is recognized as a leading scientist working on human exposure evaluation for organic and inorganic compounds. He has conducted extensive research on oral bioavailability and dermal absorption issues and is widely published in peer-reviewed journals on this topic. Mr. Ruby served on the National Research Council's Committee on Bioavailability of Contaminants in Soils and Sediments, which published a state-of-the-science review on bioavailability.

Jason Ruff is a senior geologist for S₂C₂ Inc. He received a Bachelor of Science in Geosciences from The Pennsylvania State University (1997) and a Master of Science in Geology from Colorado State University (2000). His primary responsibilities focus on the management and direction of all GIS/database development and data visualization services performed in direct support of Triad/Expedited Site Characterization (ESC) projects. This includes the integration of GIS and data management in conjunction with direct sensing and rapid sampling techniques to optimize site characterization and site evaluations. Mr. Ruff's project experience includes site management and implementation of large-scale field investigations; design and implementation of direct-sensing projects; design and implementation of GIS and database systems; design and implementation of XRF metals delineation programs; design and implementation of Monitored Natural Attenuation (MNA) programs for sites containing dissolved-phase petroleum hydrocarbons and chlorinated solvents; and complex vertical and horizontal delineated and source area mapping of contaminants.

Javier Santillan retired on 30 July 2011 from the Technical Support Division at the Air Force Center for Engineering and the Environment (AFCEE) where he served as the Optimization and Restoration Subject Matter Expert. Dr. Santillan has opened his own corporation JAS Environmental Solutions from where he continues to provide environmental consultation services. His area of expertise includes Analytical Chemistry, Geochemistry, Environmental Engineering, Process Optimization, Streamlined Site Characterization, and Performance-Based Management. Dr. Santillan holds a BS in Chemistry (University of Arizona-1968), M.S. in Agricultural Chemistry (University of Arizona-1971), and a Ph.D. in Soils Chemistry and Irrigation Engineering (Utah State University-1974).

Christopher Saranko, Ph.D., DABT, is a Principal Toxicologist with EPS in Atlanta, Georgia. He has more than 15 years of research and consulting experience evaluating potential risks associated with exposures to chemicals in the environment, the workplace, and consumer products. He has managed numerous human health and/or ecological risk assessment projects under CERCLA, RCRA and more than 17 different state risk-based corrective action programs. He was a member of the Interstate Technology & Regulatory Council's (ITRC) Incremental Sampling Methodology (ISM) Team and has used ISM to support the evaluation of potential human and ecological risks at multiple sites. Dr. Saranko holds a B.A in Biological Sciences from Clemson University and a Ph.D in Toxicology from North Carolina State University. He is a Diplomate of the American Board of Toxicology and is also an adjunct professor in the Department of Environmental Health Science at the University of Georgia where he lectures on topics related to toxicology, risk assessment, and hazardous waste regulations.

John Schaffer has over twenty years of experience as an aquatic ecologist and risk assessment specializing in the assessment of stressor effects on benthic and fishery communities. He holds a Bachelor of Science and Masters of Arts Degree in Biology from the William Paterson University of New Jersey. He is a certified ecologist with the Ecological Society of America (ESA) and Certified Hazardous Materials Manager (CHMM). His professional experience includes assessment of contaminant bioaccumulation/bioconcentration within aquatic, marine and terrestrial food chains and sediment quality

assessments within freshwater and marine ecosystems in the continental United States, Alaska and the Virgin Islands. This experience includes baseline ecological risk assessments, pre-remediation planning and restoration goal development, data quality objective identification, preliminary remedial goal development, post remediation recovery monitoring programs for wetland, lacustrine, riverine and estuarine ecosystems. He has remained very active in developing remedial goals for sediments through engagement of trust resource managers and regulating parties for private, state and federally funded project sites. He has developed remedial goals for PCBs, PAHs, metals, mercury, dioxins, pesticides and munitions constituents using sediment toxicity testing, benthic community analysis, benthic fish health assessment and food chain modeling.

Richard Schaffner, Jr. has been with GZA GeoEnvironmental, Inc. in their Manchester, New Hampshire since 1990, and currently serves as a Senior Consultant in their Hydrogeology Services Group. His practice includes hydrogeologic investigations and remediation of contaminated sites, with principal focus on applied environmental biotechnology. Mr. Schaffner has worked on intrinsic and enhanced bioremediation projects throughout the United States as well as the Caribbean, Canada, Japan, India, Saudi Arabia, Australia, and the Algerian Sahara. Completing undergraduate studies in geology and graduate studies in contaminant hydrogeology and environmental engineering, Mr. Schaffner is registered as a Professional Geologist in New Hampshire and is a Certified Ground Water Professional (CGWP) through the National Ground Water Association. He holds two patents on remedial additives, one in the USA and the other in Japan, and has moderated the BioGroup (<http://www.bioremediationgroup.org>) on the World Wide Web since 1996, which consists of a Listserver serving up to about 8,000 environmental scientists/engineers worldwide. The BioGroup was established to facilitate global environmental biotechnology transfer on biological remediation, natural attenuation, and related topics.

Craig Schultz is a Principal at ICF International (ICF), a global consulting firm with over 4,500 employees in total and over 700 performing energy and environmental work. Mr. Schultz is the team leader for ICF's Renewable Energy practice and manages renewable energy projects ranging from market assessments and feasibility analyses to project selection, policy formulation, procurement, negotiation, and implementation. Recently, he has performed renewable energy work for several Federal agencies including DoD, DOE, DHS, and EPA, for state energy and environmental agencies, for universities, and for private-sector clients. Mr. Schultz has spent 17 years in the energy industry, working with solar, wind, and other renewable electricity projects, as well as conventional energy supply, pricing, and risk management. Mr. Schultz managed ICF's recent work with the Massachusetts Department of Environmental Protection on a technical and financial feasibility study of a solar PV system fully offsetting the electricity requirements of a large groundwater pump-and-treat system at a Superfund site. Mr. Schultz received his MBA from The University of Chicago Booth School of Business with Beta Gamma Sigma honors and his Bachelor's degree in Economics from Wesleyan University with Phi Beta Kappa honors.

Jennifer Seiter is a Research Physical Scientist/Soil Scientist and a member of the Soils & Sediment Geochemistry team at the U.S. Army Engineer Research and Development Center in Vicksburg, MS. Jennifer has a Bachelors degree from the State University of New York at Brockport in Environmental Earth Science and a Doctorate in Environmental Soil Chemistry from the University of Delaware. Jennifer's research interests include: trace metal(loid) chemistry in soils and natural systems using a multi-scale approach. She utilizes synchrotron-based techniques to characterize contaminants of concern in environmental media ranging from soils and sediments to biological materials. She is interested in creating awareness of metal(loid) chemistry in soils and fragile ecosystems, and bringing soil science and geochemistry to the forefront of environmental research.

Mike Sequino, Vice President, Directional Technologies, Inc., has a BS in Electrical Engineering from Northeastern University. He has more than 28 years experience in directional drilling and more than 20 years of experience with the design and installation of horizontal remediation wells and horizontal remediation systems in his role as Vice President/Owner of Directional Technologies, Inc. He has successfully designed and installed hundreds of horizontal remediation wells at Superfund sites, industrial facilities and commercial sites around the country by adapting vertical well technologies to horizontal remediation systems. He has authored numerous technical papers, including a recent publication

demonstrating successful bioventing/closure of a large NAPL release at a bulk petroleum storage facility. He began his career in the Gulf of Mexico oil fields as a Wire Line Engineer with Schlumberger and from there joined Teleco Oil Field Services as a Field Test and Marketing Engineer before starting Directional Technologies with his wife, Katherine, in 1992.

Jack Sheldon is a Senior Professional with Antea Group located in West Des Moines, Iowa. He has 30 years of experience in the fields of environmental microbiology and remediation. Jack has a BS in Bacteriology & Public Health and an MS in Environmental/Industrial Microbiology from Wagner College in Staten Island, NY. In his current role, he advises on remediation technology selection, performance, and optimization. His key technology areas are bioremediation and chemical oxidation. Jack has authored numerous papers and posters, and co-authored two best-selling books on bioremediation.

Alex Sherrin started at the US Environmental Protection Agency (EPA) in 1987 as an On-Scene Coordinator in the Superfund Removal group conducting emergency responses and time critical removal actions. In 1995, Alex moved to Sydney Australia where he worked with CH2M HILL as a consultant for four years. In 1999, Alex returned to Boston and worked for Knoll Environmental and CH2M HILL. In 2001, he obtained his Massachusetts Licensed Site Professional license. In 2004, Mr. Sherrin rejoined the US EPA as an On-Scene Coordinator and an FRP/SPCC inspector. In 2009, he became the SPCC Coordinator for Region 1 New England which he continues to perform today.

Robert Shoemaker is a Project Manager who manages a variety of projects ranging from small industrial clients to Federal clients. In addition, Mr. Shoemaker is a Project Chemist for a large scale RI of contaminated sediments in a tidal river. Mr. Shoemaker also holds Task Manager and Quality Assurance Manager positions in projects involving Brownfields Redevelopment, In-Situ Chemical Reduction, Enhanced Bioremediation, and RCRA Facility Investigation. He attended Clark University where he earned double major bachelor's degrees in Biology and Environmental Science.

Michael R. Sieczkowski currently serves as JRW Bioremediation L.L.C.'s Technical Sales Director and has been an environmental manager and technical resource since 1977. His specialties include aerobic and anaerobic enhanced bioremediation of chlorinated solvent and petroleum product sites, remediation of mine impacted water, site assessments, and remedial project management. Mr. Sieczkowski has published a number of professional papers and has presented at over 50 conferences and seminars. He is also the primary inventor for a US patented process related to the bioremediation of mine influenced water. Mr. Sieczkowski has been responsible for the management of a number of complex programs involving RCRA closures, chlorinated solvent site research and remediation projects, PCB cleanups, UST assessment and removals, real estate assessments, and compliance and guarantee testing. Mr. Sieczkowski has been involved in Federal, State, and private cleanup and research programs including projects at Rocky Mountain Arsenal, Rocky Flats, Whiteman AFB, Offutt AFB, and numerous investigation and remediation programs for CERCLA and petroleum sites and retail, energy, and manufacturing companies. He is the lead technical resource for JRW for several current Mine Influenced Water research projects being conducted by the USEPA Office of Research and Development and is responsible for the technical aspects of the development of new products for chlorinated solvent remediation and Mine Influenced Water remediation.

Cannon Silver, P.E., is a Principal Environmental Engineer with CDM Smith. He has worked in the environmental field since 1994. Cannon designs, installs, and optimizes innovative remedial systems for industrial and federal clients, and specializes in technology transfer. He has authored or co-authored more than 15 technical presentations on innovative technologies. He has installed and optimized the performance of multiple remedial systems, including permeable reactive barriers (PRBs), biosparging and bioventing systems, air sparging/soil vapor extraction, groundwater pump and treat, and in situ bioremediation. He served as part of an expert team conducting remedial process optimization (RPO) evaluations at multiple Air Force sites. In 2011, Cannon prepared a document for the Navy comparing the cost, performance, and sustainability of various types of PRBs. He has served on the Interstate Technology & Regulatory Council (ITRC)'s PRB Update Team since 2008, and is currently an internet-based training instructor. He developed Whole Installation Sustainability Enhancement (WISE™), an approach to sustainable facilities. Cannon earned a bachelor's degree in Mechanical and Materials

Engineering from Harvard University in Cambridge, MA in 1993, and a master's degree in Environmental Engineering from Stanford University in Palo Alto, CA in 1994, and is a registered professional engineer in multiple states.

Russell Sirabian, PE, PMP, LEED Green Associate (Battelle). Mr. Sirabian is a Program Manager with Battelle Memorial Institute, headquartered in Columbus, Ohio. Mr. Sirabian has 27 years of environmental consulting experience and has managed various site remediation and wastewater treatment projects. He has a broad background in remediation and is experienced in the application of in situ and ex situ technologies, methods of applying innovated remedial solutions in real world situations, and optimizing the design and operation of remedial systems. More recently, Mr. Sirabian has been focused in the area of green and sustainable remediation (GSR). He has supported the Navy in development of their GSR program, including working with the Navy's optimization workgroup on the GSR Fact Sheet, guidance document and Web Portal. Mr. Sirabian along with his colleagues worked with the Navy and the Army Corps of Engineers on the development the SiteWise™ tool to characterize sustainability metrics. He has applied this tool for several remediation projects including those in the remedy evaluation phase and the system operation phase. As a member of the Interstate Technology & Regulatory Council (ITRC) GSR team, he contributed to the development of the ITRC GSR overview document and technical regulatory document. He is an active member of the Sustainable Remediation Forum (SURF) and has served as the conference chair and steering committee member for several of the Battelle International Conferences where he worked with various peers in developing GSR tracks. He has earned a bachelor's degree in Chemical Engineering from Tufts University, in Medford, MA in 1983, and a master's degree in Environmental Engineering from Manhattan College in Riverdale, NY in 1988, and is a registered professional engineer in New York and a certified project manager professional and LEED Green Associate.

James W. Smiley was involved in the Design and Development of Nuclear Power Plants for the US Navy at the Knolls Atomic Power Laboratory. He was responsible for all aspects of the Nuclear Reactor and Propulsion Plant Design. His primary area of interest was in the design and development of the new propulsion plants, advanced energy conversion concepts, and Research and Development of technology for future designs. Dr Smiley's last assignment was as Project Manager for the new Virginia Class Submarine program. He retired from the Knolls Atomic Power Laboratory in 2001 with 38 years of service. After retirement he was asked to be a member of the technical staff that investigated the Columbia Shuttle accident. Dr Smiley's long time interest in advanced energy sources and conversion efficiencies has lead to a deep interest in this country's (and the World's) political debate on how 1) to accurately characterize our energy situation, 2) assess the options based on the science, and 3) identify the solutions that are realistic. Dr Smiley's talk will put this large, complex issue in understandable terms and assess the various options based on their technical viability, not their "political correctness". Dr Smiley received his Undergraduate degree in Engineering Science from The Pennsylvania State University; a Masters Degree in Nuclear Science and Engineering from Rensselaer Polytechnic Institute, and a Doctorate in Nuclear Engineering from Pennsylvania State University. He also earned a Masters Degree in Industrial Administration from Union College in Schenectady.

Zackary Smith is a Senior Hydrogeologist at AECOM, located in Rocky Hill, Connecticut. In this role, Mr. Smith provides technical and management support for environmental site characterization and remediation projects. Mr. Smith's experience includes consulting for large manufacturing, petroleum, and mining clients, with a particular emphasis on solving complex groundwater contamination issues.

John Sohl, CEO and co-founder of COLUMBIA Technologies utilizes his 35 years of experience in senior technical project management and business development to direct the innovative business solutions fusing technology and geochemistry in the growing field of environmental services. John holds a Bachelors of Science degree from the U.S. Naval Academy and served 20 years in the U.S. Navy nuclear submarine for after graduating in 1972. In 1987, John received a Master's in Business Administration from Chaminade University in Honolulu. Upon leaving the service in 1992, John served in senior management positions with several small companies in the environmental industry. In 1999, he co-founded COLUMBIA Technologies with the goal of significantly advancing the state-of-the-art process in data acquisition and delivery for underground site assessments on a global level. John's integral role in

providing his clients with remediation focused real-time data has resulted in long-term cost savings for approximately 1,000 high resolution site characterizations throughout Mexico, Canada, and North America including Hawaii. John has supported over 300 customers including 20 of the top 40 environmental design firms, Fortune 500 companies, and state and federal agencies.

Dean Soutanian is responsible for proposal development, cost estimating, bidding and management of large public and private projects. Dean has over 20 years of experience in environmental & construction project management and estimating, including: Cost Estimating & Scheduling, Cost Control & Forecasting, Environmental Remediation Engineering, TSCA and Non-TSCA PCB Remediation, Hazardous Waste Disposal, and Environmental Monitoring. His estimating experience has been primarily with public sector bids and proposals, as well as large governmental task orders and indefinite quantity contracts. His experience in soil and groundwater remediation along with building material abatement construction projects has enabled him to develop innovative cost and value engineered solutions for design build opportunities and competitive bid awards. His most recent projects for both public and private clients have been valued over several million dollars. Serving as the principal in charge of several jobs involving universities and high-profile clients, Dean is well versed in the design and mechanical concepts involved with PCB building materials and other environmental remediation and abatement, oil recovery systems, and groundwater treatment systems.

Gregory H. Sovas has over 40 years of experience in NY environmental issues. He is currently President of his own one-person consulting firm, XRM, LLC; and a principal and director of Lake Country FracWater Specialists, LLC, a company that treats and recycles various oil and gas wastewaters. Mr. Sovas worked at the NYS Department of Environmental Conservation (NYSDEC) for 33 years until his retirement in 2001. For the last twenty-two years at the NYSDEC, he was the Director of the Division of Mineral Resources overseeing the management and regulation of the oil and gas industry and the mining industry in NY. After 2001, Mr. Sovas joined Spectra Environmental Group as Vice President of Governmental Affairs and managed the Minerals and Mining Group. In late 2007, he formed XRM, LLC, an environmental consulting group focusing on mining and oil and gas issues. Mr. Sovas was the primary author of the 1981 Amendments to the NYS Oil, Gas and Solution Mining Law. He holds a bachelor's degree in Management Engineering from Worcester Polytechnic Institute and a Master of Science in Environmental Engineering from the University of Massachusetts.

Richard Spiese received a Bachelors Degree in Geological Sciences from The Pennsylvania State University in Geological Sciences. Richard has worked for the State of Vermont, Department of Environmental Conservation, Waste Management Division (WMD) as a Project Manager of hazardous waste sites since 1987. Richard has worked on over 400 hazardous waste sites, included LUST sites, chlorinated solvent sites, PCB sites, metal sites, PAH sites, and coal tar sites. He has been a member of the WMD Spill Program since 1989, responding to many hundreds of spills ranging from fuel oil to gasoline to acids and bases. These spills have impacted surface waters, drinking water wells, and indoor air. Richard is also a member of the Vermont Hazardous Materials Response Team and is Technician Qualified as a hazardous materials responder. Richard also works with New England Waste Management Officials Association on workshops and conferences as a planner and a speaker, on the National Tanks Conference with EPA, and on the LUST Task Force for the Association of State and Territorial Solid Waste Managers Association. Richard was the Task Force Chair from 1997 through 2009.

Gary Stevens is the Business Development Manager at VeruTEK Technologies in Bloomfield, CT. He oversees marketing of the company's patented remedial technologies to clients in the fields of environmental remediation and enhanced oil recovery. Gary's experience in the environmental field extends to industrial wastewater treatment and wet process expertise, where he cultivated an understanding of contamination-related issues through his work in sales and marketing management. Gary's educational background includes a BA in Biology and Chemistry from St. Michael's College.

Alina Stingu is a Ph.D. student in Chemical Engineering Department at "Gheorghe Asachi" Technical University of Iasi, Faculty of Chemical Engineering and Environment Protection, Iasi, Romania. She is

studying the morpho-physiological changes of different plant species under heavy metal stress and polyphenolic extracts treatment obtained from different vegetal raw material (spruce bark, chestnuts shell, grape seeds, *Asclepias syriaca* plant). Based on polyphenolic profile of tested aqueous extracts, she is trying to propose a potential mechanism for naturally bioactive compounds modulator aspects in phytoremediation process. Her main goal is to identify nondestructive and efficient chelate agents to improve the phytoremediation of heavy metal contaminated soil. Ms. Stingu has a Bachelor in Environmental Engineering from "Gheorghe Asachi" Technical University of Iasi, Romania (awarded in 2006) and a Master of Science Degree in Environmental Management (awarded in 2007) from Iasi University of Iasi, Romania.

Michael Stroh is a senior project manager with the Missouri Department of Natural Resources in Jefferson City, Missouri. He joined the department in 1997 to oversee site assessment and cleanup activities in the state's Voluntary Cleanup Program before joining the state' Superfund Site Assessment group in 2002. Before joining MDNR, Michael worked as an analytical chemist and section supervisor for environmental laboratories in the private sector. He has also worked as a chemist for the US Geological Survey, and as a bihydrologist for The Nature Conservancy in Arlington, Virginia. Michael joined the ITRC (Incremental Sampling Methodology (ISM) team at its inception in 2009 and has served as a chapter lead in drafting the technical and regulatory guidance document. Michael earned a bachelor's degree in biology from Truman State University in Kirksville, Missouri in 1985 and a master's degree in environmental science from the Indiana University School of Public and Environmental Affairs in Bloomington, Indiana in 1994.

Ed Sullivan is a Vice President and Technical Director with Birdsall Services Group's Environmental Remediation Group. He has over 24 years of experience in environmental consulting. His responsibilities include the management of complex hydrogeological investigations, environmental investigations, and the development and implementation of remedial actions. He has been involved in many site cleanups where innovative in-situ remedial technologies were used to remediate contaminated soil and groundwater. He is a licensed site remediation professional in the state of New Jersey.

Bill Swanson is a registered professional engineer and Massachusetts Licensed Site Professional. He has over 39 years' experience in environmental engineering with the bulk of the time spent on study and remediation of oil and hazardous materials releases. He has worked on a number of large soil management projects, urban/historic fill projects and landfills including the Central Artery/Tunnel project.

Robin Swift is a Project Manager and Project Engineer at TerraTherm, Inc. Ms. Swift has a strong background in the environmental field with over 17 years experience as a field lead, engineer, and manager. She received a Civil and Environmental Engineering degree from the University of Massachusetts. For the past decade, she has been involved with the design, construction, implementation and management of several remedial systems, including pump and treatment, vapor intrusion, and bioremediation at several Superfund sites. Additionally, Ms. Swift regularly oversaw data management and quality control/quality assurance programs on a variety of projects with direct supervision from the EPA. She currently designs and manages several ISTR projects within the United States. Ms. Swift has contributed to several publications on pump and treatment systems, monitored natural attenuation, and vapor intrusion.

Samuel C.N. Tang received his BEng degree in Chemical and Environmental Engineering in 2009. Currently he is pursuing his PhD degree in Civil and Environmental Engineering at The Hong Kong University of Science and Technology. His research is on the synthesis and the application of magnetic nano- and micro-particles for water and wastewater treatment. He has 6 international publications in this research area.

Christopher M. Teaf is a Board-certified toxicologist and public health specialist with over 3 decades of experience in risk and safety issues for water quality, air quality, soil contamination, risk assessment, and environmental health involving metals, petroleum, PCBs, dioxins, pesticides, solvents, particulates, and bacteria/molds, among other subjects. He is Associate Director of the Florida State University Center for Biomedical & Toxicological Research, and has served on the FSU faculty since 1979. Experience includes industrial facilities, power plants, agricultural sites, waste management facilities,

health institutions, and products in commerce. Chris has taught toxicology, risk assessment and environmental health & safety at the undergraduate and graduate levels, as well as for the private sector and for USEPA, the World Health Organization, NATO, ATSDR and state/local agencies. He is Senior Human Health Editor for *Human & Ecological Risk Assessment*, an international journal, and has served on Technical Advisory Committees for many environmental symposia in the US, Europe and Central Asia. Chris has provided toxicology and health testimony in state and federal courts, as well administrative and legislative venues, for over 25 years.

Neil Teamerson is a principal scientist with Tetra Tech, Inc. in Philadelphia, PA. Since 1985, he has been primarily involved in managing multiple programs and projects involving the investigation, design, and cleanup of Superfund hazardous waste sites. Neil has in-depth experience in environmental sampling and analysis to characterize these sites, and for the past 6 years has specialized in the use of advanced tools for in-situ groundwater remediation. He holds a BS in biology from St. Lawrence University, a MS in environmental resource management and policy from SUNY College of Environmental Science and Forestry, and is a retired Colonel in the US Army Corps of Engineers.

Karen Thorbjornsen holds Bachelor of Science and Master of Science degrees in Geology and is a registered Professional Geologist. She has 16 years of environmental consulting experience with Shaw Environmental & Infrastructure in Knoxville, Tennessee. She performs background studies for metals and PAHs in environmental media and statistical analyses of environmental data at numerous sites across the United States. She specializes in geochemical evaluations of metals — a technique to distinguish natural concentrations from site-related contamination in soil, groundwater, sediment, and surface water. Ms. Thorbjornsen performs geochemical evaluations to refine lists of chemicals of concern, delineate the extent of contamination, optimize long-term monitoring programs, confirm the success of soil-removal actions, and characterize background distributions. She has authored several papers on geochemical evaluations of metals and teaches short courses on the technique.

Keith Tolson is a principal with Geosyntec Consultants with a professional practice focusing on environmental sciences. His background experience includes the areas of toxicology, environmental fate and transport, analytical chemistry, and statistical modeling. Dr. Tolson also serves on the faculty at the Center for Environmental and Human Toxicology at the University of Florida where he teaches classes on risk assessment and applied toxicology. He is a member of the ITRC Incremental Sampling Team.

Kevin D. Trainer, P.G., L.S.P. is a senior geologist with nearly 20 years of professional experience in the assessment and remediation of oil and hazardous material release sites in New England. Mr. Trainer is a Licensed Site Professional in Massachusetts and a professional geologist in Maine and New Hampshire. Mr. Trainer obtained his B.A. in Geology from Boston University in 1991 and his M.S. in Geology from the University of New Hampshire in 1997.

Rita Turkall received a baccalaureate degree in chemistry and mathematics from Kent State University, a Ph.D. in pharmacology from the Ohio State University and completed postdoctoral training at the Johns Hopkins Medical Institutions. For the past thirty years, she has been a member of the Faculty of the University of Medicine and Dentistry of New Jersey, holding joint appointments at the New Jersey Medical School and the School of Health Related Professions. In addition to providing instruction and conducting research in pharmacology and toxicology at the University, she was responsible for directing a baccalaureate Toxicology Program and serving as Chairman of the Department of Clinical Laboratory Sciences. Dr. Turkall achieved the rank of full Professor in 1994 and is currently Emeritus Professor...Her research interests include the bioavailability of chemicals from contaminated soils as well as mechanisms of inflammation. She is the author/coauthor of over 50 peer-reviewed journal articles and 17 book chapters and is a full member of major professional societies in pharmacology and toxicology and a member of the Advisory Board for Research Centers in Minority Institutions at Florida A&M University.

Toshiyuki Ueki is a research scientist in the laboratory of Dr. Derek Lovley at Department of Microbiology, University of Massachusetts Amherst. He is interested in microbial production of valuable chemicals including fuels from renewable sources. Currently, he is engaged in developing the acetogenic microorganism *Clostridium ljungdahlii* as a chassis organism for microbial chemical production.

Michael J. Wade is Principal Scientist of Wade Research, Inc.[™], a small business that provides geochemical consulting services to a variety of government agencies, industrial clients, and law firms. Dr. Wade is an organic geochemist with over 33 years post-doctoral experience with an overall total of 40 years of strong technical and project management experience in a variety of research programs with special emphasis on study of anthropogenic contamination of the natural environment. He regularly provides expert forensic geochemical services both through deposition process as well as testimony in various U.S. Federal and State Courts in the areas of environmental contamination, including assessment of sources of contamination, identification of petroleum product types, quantification of weathering effects on petroleum products, and age-dating of petroleum product releases.

Yi Wang is Director of ZymaX Forensics Isotope Laboratory, an environmental isotope laboratory serving clients in all 50 states as well as numerous international locations for decades. He has a Ph.D. in Environmental Science from Chinese Academy of Sciences, Beijing, China. He received his training on the state-of-art technology Compound Specific Isotope Analysis (CSIA) at Brown University in Rhode Island and Princeton University in New Jersey. He has over twenty years of experience in environmental research and development on issues related to air, soil, and water contamination. Dr. Wang is a senior environmental geochemist and a specialist in the analysis of isotope ratios for carbon, hydrogen, chlorine, nitrogen, oxygen, and sulfur. He has authored over 50 peer-reviewed articles and books on water, soil, and air contamination topics, shared this information via invited lectures throughout the world, and peer-reviewed manuscripts to be published in Journals including "Environmental Science & Technology" and "Environmental Forensics". He authored the chapter of "Sampling and Analysis" in the Environmental Law Series "Environmental Science Desk Book" published by the West Group. Since 2009, Dr. Wang has worked with the U.S. Environmental Protection Agency (EPA) and the State Coalition for Remediation of Drycleaners (SCRD) to give the following CSIA technical seminars: National Meeting and Region 6 in San Antonio, TX; Region 9 in San Francisco, CA; Region 4 in Atlanta, GA; and Region 1 in Boston, MA. Active member of the Interstate Technology & Regulatory Council (ITRC). He has worked on 15 U.S. EPA lead Superfund Sites, where advanced site diagnostic tool CSIA was successfully used to locate source zones, allocate responsibility, assess the viability of in situ remediation, and optimize remediation strategy. Dr. Wang's CSIA work was announced in EPA's Newsletter "Technology News and Trends" in February 2010 and March 2011.

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

Chuck Whisman manages and leads business strategy across business sectors (including Exploration & Production, Energy, Oil & Gas, Government, and Industrial) and oversees GES' engineering program, R&D initiatives, and technology group. He is heavily involved in many industry projects with regard to soil and groundwater remediation and upstream oil & gas exploration. He initiated the development of GES' Max-Ox remediation division (www.max-ox.com) and has existing and pending patents on chemical oxidation and reductive technologies. He helps incorporate HSSE and engineering lessons learned into standards, procedures, and operations. Chuck develops strategic partnerships with clients, government agencies, and engineering/consulting firms & vendors. Works w/ oil and gas clients to develop and improve their environmental and engineering programs in upstream operations and downstream environmental cleanup programs. Chuck has a BS in Civil/Environmental Engineering from the University of Pittsburgh.

Jason C. White is the head of the Analytical Chemistry Department at the Connecticut Agricultural Experiment Station. His research has focused on the potential phytoremediation of weathered persistent organic pollutants such as DDT/DDE and chlordane from soil by Cucurbita species. Dr. White also has a research program evaluating the potential uptake of nanoparticles by agricultural plant species. He earned his B.S. in Environmental Science from Juniata College and his Ph.D. from Cornell University. Dr. White is currently Managing Editor of the *International Journal of Phytoremediation* and President of the

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