Biosketches of Speakers
Interagency Performance & Risk Assessment Community of Practice (P&RA CoP)
2018 Annual Technical Exchange Meeting
Aiken, South Carolina
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Ming Zhu, Ph.D., PE, PMP

Dr. Ming Zhu currently advises senior management of the U.S. Department of Energy's Office of Environmental Management (EM) on national laboratory policy issues, and chairs the Interagency Steering Committee on Performance & Risk Assessment Community of Practice (P&RA CoP). He also advises the International Atomic Energy Agency on mathematical modeling, risk assessment and decision analyses, as well as supports Waste Management Symposia as Co-Chair for Track 9 on cross-cutting issues. Previously, he established the DOE Advanced Scientific Simulation for Environmental Management (ASCEM) Initiative, co-led the DOE Low-Level Waste Federal Review Group (LFRG), and chaired the Interagency Steering Committees on Multimedia Environmental Modeling (ISCMEM).

In 2015 he received a DOE Special Act Award for serving as the Acting Budget Director for the DOE Office of Environmental Management. Between 2010 and 2015 he served as the DOE headquarters Senior Site Program Manager/Site Liaison for Richland Operations of the Hanford Site, and received the DOE Secretary's Achievement Award in 2012. In 2012 he also served as Senior Advisor to the Director of Homeland Security Advanced Research Projects Agency (HSARPA) within the Department of Homeland Security.

Prior to joining DOE headquarters in 2009, he managed natural systems testing and modeling work of Sandia National Laboratories and engineering firms in support of the licensing and construction of the Yucca Mountain repository for high level radioactive waste and nuclear spent fuel; and led large-scale modeling efforts on a number of CERCLA and RCRA sites in the U.S. and overseas for URS Dames & Moore. He earned a Ph.D. in Mineral (Hydrogeological) Engineering from the University of California at Berkeley; graduated from a Senior Executive Service Development Program; and completed the Federal Executive Institute's Leadership for Democratic Society Program. A licensed civil engineer, Dr. Zhu was elected Fellow by the American Society of Civil Engineers.

Dr. Vahid Majidi

As Savannah River Nuclear Solutions Executive Vice President and Savannah River National Laboratory (SRNL) Director, Vahid Majidi is responsible for the management, operation, and strategic direction of SRNL. Employing approximately 1,000 technical and support staff, SRNL conducts research and development for diverse federal agencies, providing practical, cost-effective solutions for the nation's environmental, nuclear security, energy and manufacturing challenges. As the United States Department of Energy's (DOE's) Environmental Management Laboratory, SRNL provides strategic scientific and technological direction and program support for the nation's $6 billion per year legacy waste clean-up program.

Dr. Majidi is a decorated former member of the senior executive service and senior intelligence service with direct reporting responsibilities to the U.S. Secretary of Defense, U.S. Director of National Intelligence and the Director of the Federal Bureau of Investigation. He has more than 30 years of experience in the areas of chemistry, measurement science and technology, national and homeland security, science and technology policy, and nuclear nonproliferation.

Most recently he was Senior Vice President for Strategic Initiatives at Stinger Ghaffarian Technologies, Inc. Dr. Majidi previously served as the Deputy Assistant Secretary of Defense for Nuclear Matters, responsible for nuclear weapon surety and the acquisition and modernization of the nuclear weapons stockpile. Prior to joining the Department of Defense, he was Chief Scientist for Infrastructure Protection and Security at TASC Inc. and Director of University Multispectral Laboratories focusing on national and homeland security. From 2006-2012, Dr. Majidi served as Assistant Director for the Federal Bureau of Investigation's Weapons of Mass Destruction (WMD) Directorate, responsible for coordinating and managing its equities, activities, and investigations involving WMD. In 2003, he was appointed Chief Science Advisor to the Department of Justice (DOJ) and was detailed to DOJ from Los Alamos National Laboratory (LANL), where he coordinated science and technology policy among DOJ component agencies and with state and local law enforcement entities. Dr. Majidi also served as the Chemistry Division Leader at LANL and was a tenured associate professor of chemistry at the University of Kentucky.

Mr. Tom Foster

As Savannah River Remediation (SRR) President and Project Manager and AECOM Group Vice President, Tom Foster oversees a complex, integrated set of Savannah River Site (SRS) liquid waste facilities that are connected to virtually every SRS mission involving nuclear materials.

Mr. Foster oversees all areas of the liquid waste disposition program. These facilities include removing high-level waste from the large underground waste storage tanks at SRS and turning the waste into a safe, immobile glass form. He also oversees removal of low-level radioactive materials from the tanks, safe demonstration of new technologies for the treatment and disposition of waste, and operational closure of the waste tanks.

Mr. Foster has more than 30 years of experience in the nuclear industry, leading efforts in decommissioning, operations, project management, and engineering. His most recent assignment was serving as the Chief Decommissioning Officer at the Sellafield site in the United Kingdom. He has held other roles at Sellafield, including Waste and Effluent Disposition Director and Head of Programme for the Pile Fuel Cladding Silo.

Prior to joining Sellafield, Mr. Foster was Director of Remediation for the River Corridor Cleanup project at Hanford, Washington. Prior to working at Hanford, Mr. Foster held a number of senior management appointments at the Savannah River Site, mostly in the Tritium facility.

Mr. Michael D. Budney

Michael D. Budney was appointed Manager of the Department of Energy's Savannah River Site in February 2018. As DOE-SR Manager, Mr. Budney leads a workforce of about 11,000 government and contractor personnel to perform the Office of Environmental Management's important missions that include nuclear material storage and disposition, tank waste cleanup and management of Savannah River National Laboratory, EM's corporate lab.

Prior to his assignment to SRS, Mr. Budney was the Director of the Office of Business Operations in the DOE Office of Energy Efficiency and Renewable Energy where he led EERE's workforce planning, information technology and project management efforts and coordinated support service contract and acquisition activities.

Before joining EERE in May 2015, Mr. Budney worked at the Northrop Grumman Corporation leading efforts to win major missile defense contracts in information technology, modeling and simulation, wargames and exercise support, radar, and electronic warfare sensor development. He also led corporate-wide initiatives to demonstrate technologies applicable to military missile defense missions.

Mr. Budney is a retired Navy Captain with 29 years of service. At sea, he served aboard four submarines and three ships, commanding a Trident ballistic missile submarine. In his major command, he spent two years as commanding officer of the USS Emory S. Land, a U.S. Navy submarine tender. He also served two and a half years as commanding officer of the USS Pennsylvania (SSBN 735B). During these tours, he and his family lived in Japan, Scotland and Italy.

Mr. Budney's final military assignment was as Deputy Director of the Nuclear Command and Control System Support Staff, performing oversight duties of all aspects of the national nuclear command and control system for the Commander of U.S. Strategic Command. Other shore assignments included the Chief of Navy Operations Executive Panel, the U.S. Naval Academy and the Chief of Navy Operations Strategic Studies Group.

He earned a bachelor's degree in physics from the U.S. Naval Academy. He also holds a Master of Science degree in electrical engineering from the Naval Postgraduate School and an MBA from the University of Maryland University College.

Mr. Michael Truex

Michael Truex has 26 years of experience at Pacific Northwest National Laboratory in environmental remediation research and field applications. His experience includes work at Department of Energy, Department of Defense, and private remediation sites. Mike has also authored multiple technical guidance documents on remediation exit strategies, monitored natural attenuation, vadose zone contaminant transport, and development of conceptual site models. Mike also led chapter development and serves as a trainer for the Interstate Technology & Regulatory Council (ITRC) Remediation Management of Complex Sites document. He is also the chair for the IAEA Determination of Environmental Remediation End States document.

Dr. David Esh

David Esh is a Senior Risk Analyst with the Nuclear Regulatory Commission with over twenty years of experience in performance assessment. Prior to joining NRC he worked at Argonne National Laboratory on wasteform development. David is one of the youngest dual recipients of NRC's highest and second highest awards. He is a proponent of probabilistic analyses, simulation modeling, and assessment of uncertainty. David has four degrees including a PhD in engineering from Penn State University.

Mr. Robert Pope

Mr. Pope holds degrees in Biology and Geology, was a commissioned officer in the U.S. Army Corps of Engineers and has been working in the environmental field over 30 years. Mr. Pope has been with the United States Environmental Protection Agency since 1991. Mr. Pope's background is in the fields of groundwater and surface water chemistry and project management. He is currently a Senior Remedial Project Manager in EPA's Region 4 office in Atlanta, Georgia. Mr. Pope has worked on sites throughout the United States, including Alaska, and Puerto Rico. He is currently the lead federal regulator for hazardous and radioactive waste cleanup work at Savannah River Site, Tyndall Air Force Base, and a former chlor-alkali facility in Georgia.

Dr. Mark Fuhrmann

Mark Fuhrmann is a geochemist at the U.S. Nuclear Regulatory Commission where he has worked for 11 years. Prior to that he was a researcher at Brookhaven National Laboratory for 26 years. He holds a Ph.D. from the Earth and Space Sciences department of the State University of New York at Stony Brook.

Dr. Brian Looney

Brian Looney received his PhD in Environmental Engineering from the University of Minnesota in 1984. He is an environmental engineer in the Savannah River National Laboratory (SRNL) and an adjunct professor in the Environmental Engineering and Earth Science Department at Clemson University. Over the past 35 years, Brian has developed and deployed a wide range of environmental characterization and clean-up technologies and has supported the DOE Offices of Environmental Management and Legacy Management.

Mr. Roger Seitz

Roger Seitz is a Senior Principal Consultant with Inspection Experts, Inc. with more than 33 years of experience in waste management. He currently provides technical and policy support to US DOE, the IAEA, and to multiple DOE sites on performance assessments and waste management related activities. His career has included support for activities related to disposal, site remediation and facility decommissioning and closure across the United States and in more than 15 different countries. He has also contributed to peer reviews and/or recommendations for the IAEA, US DOE, US NRC,

US EPA, National Academy of Sciences, and National Council on Radiation Protection and Measurements.

Dr. Edward Winner

Edward Winner has been the Assistant Director of the Division of Waste Management in Kentucky since 2016. He started his employment with the Commonwealth of Kentucky in 1999 with the Risk Assessment Branch in the Division of Environmental Services. In 2007, he became the supervisor of the Paducah Gaseous Diffusion Plant Section in the Hazardous Waste Branch. In 2011 he became the manager of Kentucky's Underground Storage Tank Branch. Edward came to state government from the University of Louisville, Lion's Eye Research Center where he had been a postdoctoral fellow. Ed has a B.A. from Tennessee Temple University, and B.S. and Ph.D. from the University of Louisville. He also pursued additional studies at the University of Louisville, Brandeis School of Law. Ed live in Louisville with his wife Jung Ju Lee an employee of the Presbyterian Church USA.

Dr. David Kosson

Dr. David Kosson is Cornelius Vanderbilt Professor of Engineering at Vanderbilt University, where he has appointments as Professor of Civil and Environmental Engineering, Chemical Engineering, and Earth and Environmental Sciences. Professor Kosson also is the Principal Investigator for the multi-university Consortium for Risk Evaluation with Stakeholder Participation, supported by the Department of Energy to improve the risk-informed basis for remediation and management of nuclear waste from former defense materials production and nuclear energy. Dr. Kosson leads the Cementitious Barriers Partnership which is a multi-institution initiative focused on developing advanced tools for predicting the long-term performance of cementitious materials in nuclear applications. Professor Kosson has participated in or led many external technical reviews on nuclear waste processing for the Department of Energy including for tank wastes and a range of technology approaches at Hanford, Savannah River and Idaho sites. Dr. Kosson served as a member of U.S. DOE Secretary Chu's team to address design challenges associated with the Hanford Waste Treatment Plant. Professor Kosson also has provided expertise and leadership for the National Academies, and as advisory to the Department of Defense, for two decades on demilitarization of chemical weapons in the United States and abroad. He received his Ph.D. in Chemical and Biochemical Engineering from Rutgers University, where he subsequently was Professor of Chemical and Biochemical Engineering.

Dr. Brian Powell

Brian A. Powell holds the Fjeld Professorship of Nuclear Environmental Engineering and Science in the Department of Environmental Engineering and Earth Sciences at Clemson University. He previously held postdoctoral appointments at the Lawrence Livermore National Laboratory and the Lawrence Berkeley National Laboratory. He has a B.S. degree in Chemistry from the University of Montevallo (1999), and M.S. and Ph.D. degrees in Environmental Engineering and Science from Clemson University (2001, 2004). In addition to his duties at Clemson University, Dr. Powell also serves on the Radiation Safety Committee of the USEPA Scientific Advisory Board, is a member of

the National Council on Radiation Protection, Program Activity Committee 5: Environmental Radiation and Radioactive Waste Issues and holds a joint appointment with Savannah River National Laboratory. Dr. Powell is the 2018 Fred C. Davidson Distinguished Scientist from the Citizens for Nuclear Technology Awareness, the 2018 McQueen-Quattlebaum award winner from Clemson University and the winner of the 2014 South Carolina Governor's Young Researcher Award for Excellence in Scientific Research. He has published over 70 refereed journal articles (h-index 22) and garnered over $16.9M in funding from various agencies.

Dr. Emily Stein

Emily Stein is a computational hydrogeologist at Sandia National Laboratories, where she specializes in post-closure performance assessment modeling of deep geologic repositories for nuclear waste. She is involved in development and application of GDSA Framework, a software toolkit for repository PA that includes subsurface flow and transport and uncertainty and sensitivity analysis tools; and in development of a 3-D conceptual model and simulation capability for the Waste Isolation Pilot Plant performance assessment. She earned her M.S. and Ph.D. in Earth Sciences from the University of California, Santa Cruz.

Dr. Paul Black

Principal, co-founder and current Chairman of Neptune and Company, Inc., including managing Neptune's Performance Assessment projects at Government and Commercial disposal sites. He has supported several initiatives with the National Academies and the IAEA to consider alternative approaches to solving nuclear contamination problems. Paul earned a Ph.D. in Statistics and Decision Analysis in 1996 from Carnegie Mellon University

Dr. Bruce Napier

Bruce Napier has been an environmental Health Physicist at PNNL for the past 41 years. While his primary efforts over the past 30 years have been related to historical radiation dose reconstruction projects around nuclear sites like Hanford or the Russian Mayak complex, he has a long-standing sideline of supporting decommissioning and demolition of DOE facilities – such as the Plutonium Finishing Plant and other Hanford facilities. Bruce is a Council Member, Scientific Vice President, and past Board-of-Directors member of NCRP - the US National Council on Radiation Protection and Measurements. Bruce has been a member of the US delegation to UNSCEAR - the United Nations Scientific Committee on the Effects of Atomic Radiation - for the past 5 years. He is author of over 90 peer-reviewed journal articles and several hundred technical reports.

Dr. Paul Lemieux

Paul Lemieux is the Acting Division Director of the Decontamination and Consequence Management Division of EPA's National Homeland Security Research Center. Paul has a BS in Chemistry from Seattle University and a PhD in Chemical Engineering from the University of Utah. He has been with the EPA's Office of Research and Development for 31 years initially studying formation and control

of pollutants from combustion systems, and more recently has been working on management of residues from cleanup after chemical/biological/radiological incidents and foreign animal disease outbreaks and has been working on decision support tools to aid decision makers during wide-area contamination incidents.

Dr. Kevin Brown

Kevin Brown is Senior Research Scientist in the Department of Civil and Environmental Engineering at Vanderbilt University. His research has been supported by the multi-university Consortium for Risk Evaluation with Stakeholder Evaluation (CRESP). Dr. Brown's current research focuses on life-cycle risk evaluation, model integration, and waste management issues related to proposed advanced nuclear fuel cycles and cementitious barriers for nuclear applications.

Between 1986 and 2002 at the Savannah River Laboratory, he was recognized as a DOE Complex-wide authority in process and product control for high-level waste vitrification. His activities supporting the Defense Waste Processing Facility (DWPF) included: 1) optimizing waste loading, 2) modeling critical properties, 3) managing uncertainties, and 4) supporting variability studies and waste form acceptance. He served a similar role across the DOE Complex supporting vitrification projects at Idaho, Hanford, and West Valley.

Dr. Brown spent 2002-2003 at the International Institute for Applied Systems Analysis (IIASA) in Laxenburg, Austria where he estimated potential transboundary radiation doses resulting from hypothetical accidents at Russian Pacific Fleet sites. They were the first such studies known in the West.

In 2009 Dr. Brown was a member of the External Technical Review Team chartered by DOE-HQ to evaluate the system-level modeling and simulation tools in support of Savannah River Site and Office of River Protection liquid waste processing and disposal. In 2010 and 2011 Dr. Brown participated on the Tank Waste Subcommittee of the DOE Environmental Management Advisory Board (EMAB) charted to provide independent technical reviews of liquid waste capital and operations projects related to DOE-EM's tank waste cleanup program at major DOE Sites. He participated in Construction Project Reviews for the Hanford Tank Waste Treatment and Immobilization Plant in 2011 and 2013 and the Savannah River Salt Waste Processing Facility in 2011 through 2015. In 2011 and 2012, Dr. Brown applied the model developed by CRESP to prioritize remediation and associated projects at DOE sites to Melton Valley, Experimental Molten Salt Reactor Experiment, East Tennessee Technology Park, and Bear Creek Burial Grounds at the Oak Ridge National Laboratory.

Dr. Vicky Freedman

Dr. Freedman is the Soil and Groundwater Program Manager for the DOE Office of Environmental Management Sector at Pacific Northwest National Laboratory with nearly 20 years of experience in practical applications of contaminant fate and transport in environmental systems. At PNNL, she leads the Deep Vadose Zone program, integrating investments from basic science, applied research, and site contractors to collaboratively identify innovative remediation alternatives for deep vadose

zone challenges in characterization, prediction, remediation, and monitoring. In addition, Dr. Freedman collaborates with the site contractor on Hanford tank performance assessments, and has led the development of Akuna, an open-source, cross-platform software, designed to support multiple simulators for modeling subsurface flow and transport and complete tracking of the simulation workflow.

Dr. Greg Flach

Dr. Flach is an Advisory Engineer at Savannah River National Laboratory with 30 years of experience related to groundwater hydrology, computational simulation, numerical code development, and DOE Performance Assessments. He has been the principal investigator on several groundwater modeling studies at the DOE Savannah River Site involving regional and local scale hydrology, contaminant migration from waste sites, and evaluation of environmental cleanup alternatives. Over the last decade his efforts have focused subsurface flow and transport simulations supporting DOE Performance Assessments (PA) at the Savannah River Site, including the Saltstone Disposal Facility, F- and H-Tank Farm closures, and the E-Area Solid Low-Level Radioactive Waste Disposal Facility. Dr. Flach was awarded the DOE Secretary's Achievement Award in 2013 for his key contributions to the F-Tank Farm Closure PA. His research efforts focus on dual-domain formulations of contaminant transport. He earned a PhD in Mechanical Engineering from North Carolina State in 1988.

Mr. Steve Hommel

M.S. Information Systems – University of Phoenix
B.S. Earth Science – University of Nevada, Las Vegas
Mr. Hommel is a Principal Engineer with Savannah River Remediation, LLC (SRR) and has more than 15 years of experience working on Performance Assessments (PAs). He is currently the Subject Matter Expert (SME) for the Saltstone Disposal Facility (SDF) PA. In his current role, he has been the lead author on multiple PA-related documents, including technical reports related to FEPs analyses, conceptual model development, dose calculations, quantitative inventory analyses, and probabilistic uncertainty analyses. In addition to technical writing, his expertise includes modeling, statistical and data analyses, and coding. Prior to coming to the Savannah River Site (SRS), he used GoldSim and other quantitative tools to develop validation models for the Total System Performance Assessment (TSPA) for the Yucca Mountain Project.

Dr. William King

Dr. William King received his degree in Inorganic Chemistry from the University of Tennessee in 1996 and subsequently worked as a post-doctoral research associate at Vanderbilt University. He began his career at the Savannah River National Laboratory in 1998 and he is currently working within the Chemical Processing Technology Group in the Environmental Stewardship Directorate. Dr. King has experience in inorganic synthesis, materials science, and chemical process development. His research assignments have included numerous projects associated with Hanford Waste Treatment Plant flow sheet development and supporting SRS operations through testing to support HLW characterization, ion exchange processing, and HLW tank cleaning and closure. The

current presentation is focused on testing conducted to support SRS tank closure efforts.

Mr. Pat Lee

Pat Lee is a chemical engineer with ORANO Federal Services. He has a BS and MS degree from the University of Delaware. He has 19 years of experience in the nuclear industry. In the early part of his career, he worked on the total system performance assessment models for the Yucca Mountain Project. For the last four years he has been the technical lead on the Hanford Integrated Disposal Facility performance assessment. His presentation today describes the modeling results done in accordance with DOE requirements for low-level and mixed low-level waste disposal facilities.

Mr. Will Nichols

Will Nichols' professional experience as water resources engineer has focused on the areas of hydrology, environmental site characterization, fate and transport modeling, pathway and exposure modeling, uncertainty and sensitivity analysis, integrated risk assessment, probabilistic modeling and simulation, and software quality assurance. He has applied his expertise in these areas to help solve problems of national importance in the areas of Resource Conservation and Recovery Act, Comprehensive Environmental Response, Compensation, and Liability Act, remedial investigations and feasibility studies, radioactive waste disposal facility licensing, National Environmental Policy Act (NEPA) reviews and environmental impact statement development. Will's expertise has been applied in support of environmental restoration, dose reconstruction for legacy radioactive waste practices, and demonstration of compliance with applicable waste disposal regulatory requirements. He has successfully led science and engineering teams in software development efforts and scientific studies to deliver high-impact products including scientific simulators used to evaluate environmental dose and total system performance assessment. Will's NEPA experience includes contributing to long-term consequences portions of environmental impact statements for nationally important facilities, including proposed and operating radioactive waste repositories.

Dr. Dibakar (Dib) Goswami

Program Lead hydrogeologist, Nuclear waste Program, WA State Dept., of Ecology (Ecology)

As the lead/head hydrogeologist, Dib supports the mission of the program by providing necessary direction for the environmental cleanup of soil and groundwater at the Hanford Federal Facilities dealing with complex problems associated with the flow and transport of groundwater contamination and remediation of radionuclides and chemicals. This position assists the program with cross section, cross program, interagency and interstate duties, and responsibilities. Responsibilities include coordination with various expert panels, National Academy of Science, Nuclear Regulatory Commission, inter-state, federal agencies, Tribal Nations and other stakeholders in developing and communicating site wide policies on groundwater and Columbia River. Dib is responsible in providing expert testimonies before such bodies as the legislature, litigation/court on complex hydrogeologic and surface water issues of the Hanford Site. He has served as team leaders of a number of technical teams dealing with the innovative technology development and deployment for

the Interstate Technology and Regulatory Council (ITRC), USA.

Mr. Brad Stephenson

- Professional Geologist with the Tennessee Dept. of Environment & Conservation (TDEC)
- B.S. with honors in Natural Resources (geology & forestry) from the University of the South in Sewanee, Tennessee
- M.S. in Geography (karst hydrogeology) from Western Kentucky University in Bowling Green
- 25 years in environmental consulting before joining TDEC in 2016
- Managed investigation & remediation of hazardous waste sites under CERCLA & RCRA for private-sector and government clients, particularly in karst areas
- Since 1994, served on the organizing committee of the *Multidiciplinary Conference on Sinkholes and the Engineering and Environmental Impacts of Karst*; co-editor for three proceedings volumes
- Currently working with TDEC's Division of Remediation office in Oak Ridge, where DOE, EPA, and TDEC partner to cleanup legacy contamination under a Federal Facility Agreement
- Has lived and worked in Oak Ridge since 1994, but still relatively new to working with DOE and the special challenges of cleaning up the Oak Ridge Reservation