

Biosketches of Speakers
Interagency Performance & Risk Assessment Community of Practice (P&RA CoP)
Technical Exchange Meeting
Germantown, MD
October 19-20, 2016

Mr. Rob Seifert

Mr. Rob Seifert is the Acting Director for Regulatory, Intergovernmental, and Stakeholder Engagement for the Department of Energy (DOE) Environmental Management (EM) Program in Washington, D.C. This office provides leadership for the implementation and monitoring of the environmental regulatory compliance function to support EM cleanup efforts while interacting with communities and interested EM stakeholders.

In addition, he continues to serve as the Director of the Office of Regulatory Compliance for DOE EM. The mission of this office is to develop policy and guidance on regulatory compliance and to assist sites in establishing and maintaining compliant and risk-informed cleanup strategies and programs. His office is also responsible for conducting analysis and evaluation of regulatory options for cleanup and compliance with environmental statutes, regulations (e.g., Resource Conservation and Recovery Act - RCRA, Comprehensive Environmental Response, Compensation, and Liability Act - CERCLA), agreements, and DOE Orders (e.g., Radioactive Waste Management). Additionally, his office is responsible for interaction with external regulators and for sharing compliance lessons learned.

He has been working in DOE environmental management program for over 23 years as both a contractor and a federal employee. Mr. Seifert joined EM as a contractor to DOE at the Paducah Gaseous Diffusion Plant in 1993 implementing the first major remedial investigations. He began his federal service with DOE in 2007 serving in a variety of functions, but primarily as a federal project director of D&D and waste management projects. Mr. Seifert has B.S. degrees in chemistry and biology from Murray State University.

Ming Zhu, Ph.D., PE, PMP

Dr. Ming Zhu is currently the Integrated Performance Assessment Lead in the Office of Regulatory Compliance within U.S. Department of Energy's Environmental Management (EM) Program. He chairs the Interagency Steering Committee on Performance & Risk Assessment Community of Practice (P&RA CoP) to promote best practices in performance assessments and risk analyses, and co-leads the DOE Low-Level Waste Federal Review Group (LFRG) to support DOE management decisions in self-regulating its on-site nuclear waste disposal facilities. He also advises the International Atomic Energy Agency on mathematical modeling, risk assessment and decision analyses in association with the cleanup of radioactively contaminated sites, as well as supports Waste Management Symposia as Co-Chair for Track 9 on cross-cutting issues. Previously, he established and served as founding Program Manager for the DOE Advanced Scientific Simulation for Environmental Management (ASCSEM) Initiative that aims at reducing the \$300B life cycle cost of the EM program, and led the Interagency Steering Committees on Multimedia Environmental Modeling (ISCMEM) on collaboration of R&D activities.

He recently received a DOE Special Act Award for serving as the Acting Budget Director in 2015 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 on Hanford, the largest legacy waste 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 in Nevada; 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.

Mr. Timothy McCartin

Mr. Tim McCartin is the Senior Advisor for Performance Assessment at the U.S. Nuclear Regulatory Commission. Mr. McCartin has over 35 years of experience in the development and application of (1) performance assessment approaches and computational tools for evaluating the safety of geological disposal and (2) national and international regulations for geologic disposal. Mr. McCartin has participated in international model validation activities for hydrogeologic flow and transport models used in performance assessment and served as the technical lead for development of the NRC's total system performance assessment code (TPA) for evaluating a geologic repository for high level waste disposal. Mr. McCartin also is the technical lead for the development of 10 CFR Part 63 – the regulatory criteria that would govern any U.S. Department of Energy license application for a high level waste repository at Yucca Mountain. Mr. McCartin was responsible for ensuring NRC's regulations at 10 CFR Part 63 implemented a risk-informed, performance-based approach. Most recently, Mr. McCartin was a lead reviewer of the U.S. Department of Energy's License Application for Yucca Mountain. In particular, Mr. McCartin was the technical lead with respect to the review of compliance with the overall post-closure performance objectives, a key contributing author in all three technical volumes of the Safety Evaluation Report (i.e., Pre-closure Safety – published in 2015, Post-Closure Safety – published in 2014, and the Administrative and Programmatic Requirements - published in 2014), and the primary author of the Proposed Conditions on the Construction Authorization and Probable Subjects of License Specifications in the Safety Evaluation Report – published in 2015. Mr. McCartin obtained a Master of Science degree in Physics from Wayne State University, and a Bachelor of Science degree in Physics from Xavier University.

Alicia Frame. Ph.D.

Dr. Alicia Frame is a biologist for the US Environmental Protection Agency's Office of Land and Emergency Management, in the Superfund Program. Her primary areas of expertise are statistics and data analysis, predictive modeling, and human health risk assessment. Prior to joining Superfund, Alicia worked in R&D for Dow AgroSciences, and as a postdoctoral fellow with the US EPA's Office of Research and Development. She received a BS in Biology and Mathematics from

The College of William and Mary, and a PhD in computational biology from the University of North Carolina at Chapel Hill.

Mr. Chris McKenney

Christopher McKenney has a Bachelor of Science in Nuclear Engineering from Oregon State University and has been with the U.S. Nuclear Regulatory Commission since 1991. He is currently the Chief of the Performance Assessment Branch in the Division of Decommissioning, Uranium Recovery, and Waste Programs in the Office of Nuclear Material Safety and Safeguards. His group is responsible for reviewing and performing modeling related to the long-term impacts of decommissioning, disposal of low-level waste, and waste incidental to reprocessing and ensuring that material licensees have adequate financial assurance for decommissioning. Over his twenty-five years at the NRC, he has primarily worked the waste and radiation protection arenas. He has primarily worked on modeling biosphere transport and establishing exposure scenarios for regulatory compliance in low-level waste, decommissioning, geologic disposal and uranium recovery

Dr. Bo Strömberg

Bo Strömberg is working as an analyst at the department of Radioactive materials at the Swedish Radiation Safety authority (SSM). Bo has a background as a researcher at the department of inorganic chemistry at the Royal Institute of technology in Stockholm Sweden. Since 1997 he has been working as a regulator with post-close safety assessment for the final disposal of spent nuclear fuel as well as low and intermediate level waste, mostly in areas related to groundwater and radionuclide chemistry. In the recent years he has been extensively involved in SSM's review of the license application for construction of a spent nuclear repository in Sweden. He has most recently worked as an editor of SSM's review report covering aspects of the application related to post-closure safety.

Mr. Marcel Bergeron

Mr. Marcel P. Bergeron is a Senior Hydrogeologist in the Single-Shell Tank Closure & Interim Measures Group within Washington River Protection Solutions, LLC in Richland, WA. He has 35 years of experience in a wide variety of hydrogeologic investigations and studies at radioactive and hazardous waste sites. Marcel has significant experience in the application to subsurface flow and transport modeling with emphasis on risk and performance assessments supporting closure of hazardous chemical and radioactive waste facilities. At WRPS, Marcel has been using his past experience and expertise in hydrogeologic characterization/interpretation, risk assessment, and performance assessment for tank-related waste management, remediation, and closure issues.

Matt Kozak, Ph.D.

Dr. Matthew Kozak has more than 30 years of experience in performance assessment radioactive waste repositories. He is the author of over 100 publications on these topics. In the U.S., Dr. Kozak has led projects to support the U.S. Environmental Protection Agency (EPA), Electric Power Research Institute (EPRI), the U.S. Department of Energy (DOE), and the Nuclear Regulatory Commission (NRC) on a wide variety of radioactive waste disposal and contamination issues. In

addition to his U.S. work, he has supported a number of national radioactive waste management programs in Europe, Asia, and Africa to site.

Dr. Kozak is the former chair of Scientific Committee 87-3 for the National Council on Radiation Protection (NCRP) on safety assessment of radioactive waste disposal facilities. Dr. Kozak is also a past member of NCRP Umbrella Scientific Committee 87 on Radioactive and Mixed Waste. Dr. Kozak was a member of the National Research Council Committee on Cesium Processing Alternatives for High-Level Waste at the Savannah River Site. He was also on the IAEA's International Peer Review Team for the Australian National Repository for low and intermediate level waste at Woomera South Australia.

Alaa Aly, Ph.D.

Dr. Alaa Aly is an environmental engineer with 26 years of experience and graduate degrees in irrigation engineering and statistics from Utah State University. His team is responsible for risk and performance assessments in support of major remedial decisions. The team is contractually responsible to the U.S. Department of Energy to integrate human health and ecological risk assessment, vadose zone and groundwater modeling, and performance assessment activities across three major contractors with many subcontractors. In addition to his project management responsibilities, Dr. Aly's experience includes fate and transport modeling, human health risk and ecological assessment, uncertainty analyses, hydrologic and environmental characterization, environmental remediation, and water resources and supply evaluation.

Mrs. Sherry Ross

Mrs. Ross has 31 years of Government service. The last 27 years have been spent with the Department of Energy at the Savannah River Operations Office. Since 2004, Mrs. Ross has been a general engineer in the Office of Assistant Manager for Waste Disposition Projects, Programs Division responsible for waste removal and tank closure activities. These activities include contractor oversight and direction pertaining to project cost, scope and schedule. Additionally, she is responsible for regulatory compliance which involves extensive coordination with State and Federal agencies including consultation and monitoring activities with the Nuclear Regulatory Commission under implementation of Section 3116 of the National Defense Authorization Act for Fiscal Year 2005. Mrs. Ross is directly involved with the development and interpretation of long term radiological risk analyses called Performance Assessments for the closure of two tank farm facilities and one low level waste disposal facility at the Savannah River Site. She is a voting member on the DOE Low Level Radioactive Waste Disposal Facility Federal Review Group responsible for the review, interpretation and approval of radioactive waste disposal facility performance assessments.

Paul Black, Ph.D.

Principal and co-founder of Neptune and Company, Inc., an environmental consulting company that specializes in the technical disciplines of statistics, decision analysis, risk assessment, ecology, environmental modeling, QA and chemistry. Manager of Neptune and Company's Statistics, Decision Analysis, and Modeling Group. The main focus of the group is to provide consulting services in environmental decision analysis, covering disciplines such as environmental modeling, cost-benefit (economic) analysis, options analysis, statistics, probability, elicitation, earth sciences, and human health and ecological risk assessment. Responsibilities include managing a group of

about 10 people who are focused and motivated to efficiently and effectively solve environmental problems, working in a collaborative environment on interesting problems that call for innovative or cutting edge solutions, and managing various projects in which the group is engaged. Responsibilities also include involving the group in professional societies and conferences, company publications, presentations, and proposals, and marketing and business development.

Mr. Heeho Park

Mr. Heeho Park is a technical staff member at Sandia National Labs. He is the team lead for PFLOTRAN development at Sandia Carlsbad Program Group. His work consists of developing the code, creating simulation models, and writing scripts to streamline the future WIPP PA process. He has a bachelor's and master's degree in nuclear engineering from the University of Michigan and he plans to attend University of Illinois in civil engineering for his PhD this coming January.

Dib Goswami, Ph.D.

As the lead/head hydrogeologist, Dr. Dib Goswami 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, monitoring, sampling and remediation of radionuclides and other 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 sitewide policies on groundwater and vadose zone characterization, monitoring, remediation and risk/impact assessments. Also responsible in providing expert testimonies before such bodies as the legislature, litigation/court on complex hydrogeologic and surface water issues of the Hanford Site. Dib is also a Subject Matter Expert of the American Nuclear Society of the groundwater and vadose zone group and helped to publish the "Evaluation of subsurface radionuclide transports at commercial nuclear power plants", an American National Standard. 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 since 1997.

Edward Winner, Ph.D.

Dr. Edward Winner is the manager for Kentucky's Underground Storage Tank Branch, Energy and Environment Cabinet in Frankfort. He has been manager since 2011. His specific areas of experience include statistical analysis, groundwater sampling design, site assessment and conceptual site modeling, exposure analysis, and risk assessment. Prior to his present position, Dr. Winner was supervisor and Federal Facilities Agreement Manager for the Paducah Gaseous Diffusion Plant Section. He started his employment with the Commonwealth of Kentucky in the Risk Assessment Branch. He came to state government from the University of Louisville, Lion's Eye Research Center where he had been a postdoctoral fellow. Dr. Winner has published peer review articles and white papers on a variety of topics such as the mechanisms of acrylonitrile toxicity, slow adapting receptors in the lung, probabilistic modeling of ground water plume ½-life, analysis of monitor comingled plumes, and anthropogenic background of inorganic elements in Kentucky. He earned Bachelor of Arts degree in 1984 in (Theology) from Tennessee Temple University in Chattanooga, Tennessee, and Bachelor of Science degree in 1989 in (Zoology) and

Ph.D. in 1997 in (Environmental Biology), both from the University of Louisville in Louisville, Kentucky. He also pursued additional studies at the University of Louisville, Brandeis School of Law.

Jon Richards

Mr. Jon Richards is a U.S. Environmental Protection Agency Project Manager and Regional Radiation Expert managing nuclear waste projects and overseeing radiation and other types of remediation for EPA at U.S. Department of Energy sites, including the Paducah Gaseous Diffusion Plant, Oak Ridge Y12 Nuclear Complex and Oak Ridge National Laboratory, and Savannah River Site, as well as mining and commercial nuclear and radiation sites. He has over 28 years of experience working on low level rad waste, transuranic waste, and high level waste projects at these sites. Other areas of expertise he has used at these nuclear sites, include remediation of radioactively and mercury contaminated soil and groundwater, buildings, performance and risk/dose assessments, as well as radiological emergency guidance for nuclear plants and nuclear incidents and recovery from nuclear incidents, including the use of EPA's Protective Action Guides. He has worked on many national multi-agency radiation workgroups including MARSSIM, MARLAP, superfund radiation guidance, and TENORM guidance. Mr. Richards has a B.S. Nuclear Engineering from the Univ. of Tennessee, and M.S. Environmental Health Physics from Georgia Tech.

Ms. Kathy Economy

Ms. Economy is a currently employed with EPA's Radiation Protection Division team as a Physical Scientist. She has a Bachelor of Science degree in Anthropology from University of California Riverside and a Master's of Science degree in Hydrology from New Mexico Institute of Mining and Technology. From 1992 to 1999 she was a member of Sandia National Labs Performance Assessment team for the Waste Isolation Pilot Project (WIPP). From 1999 to 2007 she was a member of the Yucca Mountain Performance Assessment team. She joined EPA in 2010 where she primarily serves as a regulator for the WIPP and is current the lead in the Agency's review of DOE's Compliance Recertification Application for WIPP.

Steven Simner, Ph.D.

Dr. Steve Simner has over has over twenty years of engineering, design, and research experience associated with the development of materials for extreme chemical, temperature, and radiological applications. Steve obtained his PhD in Materials Science from the University of Oxford in 1996 and then took a two-year post-doctoral position at UCLA researching oxygen ion conducting ceramics. For the next 10 years he worked as a senior researcher at PNNL working on the development of high temperature fuel cells under the DOE SECA Program. In 2007 Steve embarked upon a significant change in career focus and joined the engineering group designing the facilities and remote handling equipment for processing nuclear waste planned for permanent disposal at the Yucca Mountain geological repository. In 2010, following cessation of design activities for the geological repository, Steve transferred to Savannah River Remediation for whom he is a member of the Waste Disposal Authority working on technology development with the primary focus directed towards enhanced understanding of grout materials for the encapsulation of low-level radioactive waste.

John Seaman, Ph.D

John Seaman is a Senior Research Professor and the Associate Director for Research with the University of Georgia's (UGA) Savannah River Ecology Laboratory (SREL). Dr. Seaman received B.S. and M.S. degrees in Soil Chemistry from Texas A&M University in 1987 and 1990, respectively, and a Ph.D. in Environmental Soil Science from UGA in 1994. Working in collaboration with various site contractors, Dr. Seaman has over twenty years of experience in addressing heavy metal and radionuclide contamination at the Department of Energy's Savannah River Site (SRS), including the use of cementitious materials for the long-term disposal of radioactive wastes. Dr. Seaman has over eighty peer-reviewed publications, and has served on numerous review panels for DOE, USDA, EPA and NSF. Much of his research has focused on the development of in situ soil and groundwater remediation methods, more specifically the use of reactive soil amendments as a means of lowering the mobility and bioavailability of contaminants.

Craig H. Benson, Ph.D., PE, DGE, NAE

Dr. Craig H. Benson is Dean of the School of Engineering and the Janet and James Hamilton Endowed Chair in Civil & Environmental Engineering at the University of Virginia (UVA). Prior to his appointment at UVA, Benson was Wisconsin Distinguished Professor of Civil & Environmental Engineering and Geological Engineering at the University of Wisconsin-Madison. Dr. Benson has a BS from Lehigh University and MSE and PhD degrees from the University of Texas at Austin, all in Civil Engineering with an emphasis in geoenvironmental engineering. Dr. Benson has been conducting research and consulting related to protection of the environment for three decades, with primary focus on environmental containment of solid, hazardous, radioactive, and mining wastes; beneficial use of industrial byproducts; and sustainable infrastructure. He is recognized as the foremost international authority on engineered barriers for waste containment and is widely sought after for his expertise in design and performance assessment, especially for disposal facilities containing low level waste (LLW), mixed waste (MW), and/or uranium mill tailings. Dr. Benson leads the Landfill Partnership for the US Department of Energy's (DOE) Consortium for Risk Evaluation with Stakeholder Participation (CRESP), which provides research and technical support on issues related to performance assessments for LLW and MW disposal facilities as well as evaluation of the performance of existing and historic disposal facilities owned and/or operated by DOE. Dr. Benson is former Editor-in-Chief of the *Journal of Geotechnical and Geoenvironmental Engineering*, past President of the ASCE Geo-Institute (GI), past Chair of the GI Geoenvironmental Committee, past Vice Chair of the Executive Committee of ASTM Committee D18 on Soil and Rock, and past Chair of ASTM Committee D18.04 on Hydraulic Properties and Barriers. Dr. Benson is a member of the National Academy of Engineering.

Greg Flach, Ph.D.

Dr. Greg Flach is an Advisory Engineer at Savannah River National Laboratory. Over the past 15 years he has performed numerous subsurface flow and contaminant transport analyses for DOE Performance Assessments of waste tank closures, salt waste disposal, and solid radioactive waste disposal. He currently supports Performance Assessments of the Savannah River Saltstone Disposal Facility, E-Area Solid Waste Disposal Facility, and F-Area and H-Area Tank Farm closures through porous-media transport simulations and material degradation analyses. He previously supported RCRA and CERCLA groundwater cleanup activities at the Savannah River Site, and developed simulation software and models for nuclear reactor thermal-hydraulic systems. Dr. Flach earned his

Ph.D. in Mechanical Engineering from North Carolina State University. He received the Department of Energy Secretary's Achievement Award in 2013.

George Alexander Ph.D.

Dr. George Alexander is a Systems Performance Analyst for the U.S. Nuclear Regulatory Commission. He has worked in the Performance Assessment Branch for the past 8 years as a technical reviewer for the Savannah River Site tank closures and Saltstone Disposal Facility, materials decommissioning sites, and uranium mill tailing sites. His areas of focus include geochemistry, degradation of cementitious materials, groundwater flow and transport. Dr. Alexander earned his degrees from Penn State University in Energy and Geo-Environmental Engineering.

Kevin G. Brown, Ph.D.

Kevin G. Brown, PhD, BCEEM is a Research Associate Professor in the Civil and Environmental Engineering Department at Vanderbilt University. His research is 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 materials and barriers for nuclear applications.

- 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.
- In 2009 Dr. Brown participated in the External Technical Review chartered by DOE-HQ to evaluate system-level modeling and simulation tools in support of SRS and ORP liquid waste processing.
- In 2010 - 2011 Dr. Brown participated on the Tank Waste Subcommittee of the DOE Environmental Management Advisory Board (EMAB) chartered to provide independent technical reviews of DOE-EM liquid waste capital and operations projects.
- He participated in Construction and Project Peer Reviews for the Hanford Tank Waste Treatment and Immobilization Plant in 2011 & 2013 and the Savannah River Salt Waste Processing Facility from 2011 - 2016.
- He holds a BE in Chemical Engineering, an MS in Environmental and Water Resources Engineering, and a PhD in Environmental Engineering from Vanderbilt University.

Ms. Carol Eddy-Dilek

Ms. Carol Eddy-Dilek is an environmental scientist at the Department of Energy Savannah River National Laboratory in Aiken SC. For the past 27 years, she has facilitated development of innovative approaches and tools for environmental characterization and remediation, particularly, cone-penetrometer methods for solvent and DNAPL investigations. Her efforts resulted in the successful development or deployment of over fifty innovative methods for subsurface access and characterization applied within the DOE complex. For three years, she coordinated technical assistance activities for the DOE Ohio Closure Sites (Fernald, Ashtabula and Mound) which provided technical experts to address challenging environmental issues that were encountered during the expedited closure process. She currently is the coordinator for the Technical Assistance

program within the Center for Sustainable Groundwater and Soil Solutions at the Savannah River National Laboratory.

