

2016 Science of Nuclear Energy and Radiation Workshop VOLUNTEER BIOS

Hunter B. Andrews obtained a B.S. in Mechanical Engineering with a Nuclear Engineering Concentration from Virginia Commonwealth University (VCU) in the spring of 2016. He has previously interned at Newport News Shipbuilding in the Radiation Control department where he gained experience with nuclear safety procedures and aided in radiation surveys. He is currently a research assistant in the Radiochemistry Laboratory at VCU studying the properties of molten salts for used nuclear fuel reprocessing applications. Hunter will enter the Mechanical and Nuclear Doctorate Program in the fall of 2016 as a Nuclear Energy University Program Fellow and plans to continue his research in the nuclear reprocessing and safeguard field.



Carol L. Berrigan is Senior Director for Supplier Policy and Programs at the Nuclear Energy Institute. In this role, she is responsible for the organization's nuclear manufacturing infrastructure, international trade, nuclear technology exports, and supplier-related activities. Ms. Berrigan, who re-joined NEI in 2003, also manages the U.S. Women in Nuclear program. Ms. Berrigan was with USCEA, an NEI predecessor organization, from 1992-1994.



From 1998 to 2003, Ms. Berrigan was Director of Marketing for Pulseworks, where she was responsible for managing marketing and business development functions. Ms. Berrigan was a Program Manager for Camber Corporation, a specialized engineering and management consulting firm in Washington, DC from 1994-1998. She supported several U.S. government programs related to climate change, renewable energy, energy efficiency and trade issues.

Ms. Berrigan received a Bachelor of Arts degree from the University of Chicago. She is a member of the boards of directors of the American Nuclear Society and WiN Global.

Sama Bilbao y León joined the Department of Mechanical and Nuclear Engineering at Virginia Commonwealth University (VCU) in January 2011 as Director of Nuclear Engineering Programs and Associate Professor. She is one of the key individuals involved in the creation and development of the thriving new Nuclear Engineering program at VCU. Until December 2010, Sama was the Technical Head of the International Atomic Energy Agency (IAEA) Water Cooled Reactors Technology Development Unit and she was in charge of all IAEA activities in support of the development and near term deployment of advanced water cooled reactors and their associated fuels. From February 2001 until March 2008, Sama was a Nuclear Safety Analysis Engineer at Dominion Generation, where she worked on the development and licensing of new methodologies in core thermal-hydraulics and nuclear safety analysis in support of Dominion's nuclear power stations. Previously, as a researcher at the University of Wisconsin – Madison, Sama conducted research on experimental and computational thermal-hydraulics and nuclear safety, energy and environmental policy, as well as public perception. She also participated in the design of nuclear micro-batteries to power nano-devices. At the Escuela Técnica Superior de Ingenieros Industriales of the Universidad Politécnica in Madrid she was involved in the simulation and analysis of severe accidents and nuclear safety. In November 2013 Sama was appointed by Virginia Governor McDonnell and VCU President Rao to the Virginia Nuclear Energy Authority Board, and elected Treasurer. In January 2014 Sama was appointed to the Institute of Nuclear Power Operations (INPO) National Accreditation Board. She is currently the Chair of the Board of the Virginia Nuclear Energy Consortium.



Sama is one of the seven founders of the North American Young Generation in Nuclear (NA-YGN), and served as Public Information Chair since its creation in 1999 until May 2005. Sama is also an active member of the American Nuclear Society (ANS) since 1995, both nationally and locally (currently VCU student section and Virginia local section). Her dedication to spreading the good news about nuclear earned her the ANS 2002 Public Communications Award. In 2007 she received the NA-YGN Founder Award, the highest award given to an NA-YGN member, which

rewards leadership, vision and dedication. In 2007, and again in 2010, Sama was elected to the national Board of Directors of the American Nuclear Society. In 2011, she received the ANS Mary Jane Oestmann Women's Achievement Award. In 2014 she received an ANS Presidential Citation for her continuous dedication to ANS. Sama is also a member of ASME, ASEE, SWE and WIN.

Sama holds a bachelor's degree in Mechanical Engineering and a master's degree in Energy Technologies from the Polytechnic University of Madrid; a master's degree and a PhD in Nuclear Engineering and Engineering Physics from the University of Wisconsin – Madison; and an MBA from Averett University.

Robert Brackmann is currently a Nuclear Fuel Procurement Specialist for Dominion. Robert has spent his entire nuclear fuel career at Dominion and has held various other nuclear fuel engineering positions in the areas of fuel performance and safety analysis. Robert received his B.S. in Nuclear Engineering from Purdue University in 2006 and an MBA from Virginia Commonwealth University in 2013. In his years at Dominion, Robert has the opportunity to touch every aspect of the nuclear fuel cycle that Dominion is involved in from front-end uranium procurement through fuel fabrication, including the associated nuclear fuel engineering analysis and inspections.



Steve Clement obtained a B.S. in physics and physics education from State University of New York College at Buffalo. He taught high school physics, math and engineering for 4 years before deciding to go back to school. He is currently a graduate student at Virginia Commonwealth University where he is pursuing a Master's degree in mechanical and nuclear engineering while working as a research assistant under the direction of Dr. Sama Bilbao y León.



Mark Crosthwaite earned his Master in Education with an emphasis on Occupational Administration from the University of Louisville, Louisville, KY, in 1999. He received his Certificate in Nuclear Medicine Technology from St. Joseph Hospital, in Paramus, NJ, in 1978, and he earned a Bachelor of Arts in Biological Sciences from Drake University in Des Moines, IA, in 1976.

Mark accepted his second academic appointment in Louisville, KY in 1985 as an Instructor and Program Director of the Nuclear Medicine Technology Program at the University of Louisville. While there he completed his Master's degree, was promoted to Associate Professor and received tenure. The School of Allied Health closed in 2002 and the NMT program made its transition to the community college. Afterwards Mr. Crosthwaite returned to clinical arena prior to accepting his appointment at VCU.

He has also served as a regional president in to different areas of the country for the Society of Nuclear Medicine Technology. Ha been a member of the Nuclear Medicine Technology Certification Board for ten years which included Chairing the organization for a year and a half. He has also lectured for continuing education in his profession.

His teaching interests include nuclear medicine, web based education, writing HTML programs for web based education, manipulating and creating graphic/photographic presentations. Mark also is an open water SCUBA instructor.

Angelina Deagle holds a Bachelors of Science in Clinical Radiation Sciences-Nuclear Medicine Track. She has 11 years clinical experience at VCU Health Nuclear Medicine. She also holds professional certifications in nuclear medicine technology, MRI, and CT.



Sundaresan Gobalakrishnan serves as the Head of Multi-modality Imaging Laboratory and Scientist Manager of the VCU Center for Molecular Imaging (CMI). Dr. Gobalakrishnan joined CMI in 2009 and with Dr. Zweit established the PET/SPECT/CT and Optical Imaging Laboratory, and more recently co-established the new MRI/PET preclinical imaging laboratory. His research focus is on the *in vivo* evaluation and validation of multi-modal imaging approaches, including studies of targeted hybrid probes.



Eugene S. Grecheck is Principal of Grecheck Consulting LLC. He provides management and technical consulting to the nuclear industry, with emphasis on performance improvement, regulatory issues, and developing and integrating emerging technologies. He is also the Immediate Past President of the American Nuclear Society, representing nearly 11,000 worldwide members active in nuclear science and technology. Under his leadership, ANS has taken an active role, both in the US and internationally, in informing stakeholders of the vital role existing, and future advanced, reactors must play in meeting the world's growing energy needs in an environmentally responsible manner.



He retired from Dominion Nuclear in late 2013, following more than 38 years with the company. His career there included a wide variety of leadership positions at the company's nuclear stations as well as the corporate offices. He served as Plant Manager at North Anna, Site Vice President at Surry and Vice President of Nuclear Operations at Millstone. He led Dominion's new plant development activities for over a decade, including the submittals of the Early Site Permit and Combined Operating License applications for the proposed North Anna 3 project. He was also responsible for support services for the entire Dominion nuclear fleet, including training, security, emergency planning, and licensing, as well as all engineering support for the fleet, including systems, programs, design, project management, safety analysis and nuclear fuels.

Grecheck received a bachelor's degree in physics and a master's degree in nuclear engineering from Rensselaer

Polytechnic Institute, as well as an MBA from Virginia Commonwealth University. He also completed The Executive Program at the Darden Graduate School of Business at the University of Virginia. He is an affiliate faculty member of the VCU Department of Mechanical and Nuclear Engineering and a member of the Strategic Advisory Council for the Department of Mechanical, Aerospace and Nuclear Engineering at Rensselaer Polytechnic Institute.

John Harrell is currently Dominion's Manager of Nuclear Safety Engineering. His organization is responsible for reactor core and nuclear plant system thermal/hydraulic design, safety analysis, and probabilistic risk assessment for Dominion's nuclear fleet (North Anna, Surry, and Millstone Power Stations). His technical background is in nuclear safety analysis methods development, engineering analysis, licensing, and station support in the areas of reactor core thermal/hydraulic design, reload safety evaluation, accident analysis, containment analysis, and resolution of as-found conditions for safety-related systems, structures, and components. He previously served in various management positions in Dominion's corporate Nuclear Engineering and Fuel organization, and as Manager of Engineering Programs at North Anna Power Station. He has Bachelor's and Master's degrees in Nuclear Engineering from the University of Virginia, and a Master's degree in Business Administration from the University of Richmond.



John Lawson is a senior at Virginia Commonwealth University and will receive a B.S. Degree in Mechanical Engineering in 2017. He has an A.S. Degree in Engineering from J Sergeant Reynolds Community College. In 2010, he graduated from Longwood University with a B.S. in Criminal Justice and Sociology. He is currently an Intern with Professor Sama Bilbao y León. Some projects that he has worked on include; designing a solar powered cooler using a thermoelectric Peltier device, designing a solar powered system to power small boat motors, and reverse engineering tetrix gear motors.



Lauren Lopez has worked at Dominion in the Nuclear Analysis and Fuel department for 7 years. She has a Nuclear Plant Management Certification from Millstone Power Station Unit 2. She is a Nuclear Safety Analysis Applications Engineer who works to maintain the bounding conditions of safe operation of all 6 of Dominion's operating nuclear units. She also served as a Temporary Supervisor of the Probabilistic Risk Assessment group leading Millstone Units 2 and 3. Prior to this, Lauren worked as a Fuel Performance Analyst, monitoring core chemistry and performing fuel inspections. Lauren also worked in Fuel Project Engineering and led fuel reload campaigns. Lauren graduated from the University of Virginia in 2009 with a Bachelor's Degree in Systems Engineering and a Minor in Business Engineering.



Dr. Brian Mays has been employed in the nuclear industry for the past 13 years during which time he has worked on a wide variety of government and industry projects in North America and Europe. Much of his work has focused on advanced nuclear reactor designs, such as gas-cooled and sodium-cooled reactors. He is currently a member of the technical staff at AREVA Federal Services in Lynchburg, Virginia.

Dr. Mays earned a B.S. in Physics and Mathematics and a Ph.D. in Engineering Physics, both from the University of Virginia. He has long been connected with the Virginia Section of the American Nuclear Society, having received a special award from the section when he was still a high-school student. He served as the chair of the section in 2004-2005.

Dr. Kevin McCoy is a technical consultant with System One and is recently retired from AREVA Inc. in Lynchburg, Virginia. His areas of specialization are nuclear fuel materials and radioactive waste management. His work for AREVA covered a wide variety of subjects:

- Licensing a new structural material for fuel assemblies
- Working with the Electric Power Research Institute and Nuclear Regulatory Commission to develop a new regulation for performance



- during loss of coolant accidents
- Licensing and testing a fuel assembly design that can be used to destroy surplus plutonium from nuclear weapons
- Selection of materials for waste containers to be used at the proposed radioactive waste repository at Yucca Mountain, Nevada.

In 2008, Kevin served as Adjunct Instructor of Engineering at Sweet Briar College.

Kevin has graduate and undergraduate degrees in materials engineering from Purdue University. He holds two U.S. patents and one European patent, and is author or co-author of 50 technical articles and papers.

Greg Meinweiser is excited to have recently begun his career at Dominion in the Nuclear Safety Analysis – Design group. He is a graduate from the University of Tennessee with an M.S. in Nuclear Engineering, Certificate in Maintainability and Reliability, and a minor in Business Administration. For the last three years at UT, he was webmaster, treasurer, and then president of their ANS student section as well as a Nuclear Engineering Department Ambassador. He enjoys backpacking on the Appalachian Trail and has always dreamed of being in a Broadway production.



James Miller holds a B.A. degree in physics from Shippensburg University and a M.S. degree in nuclear engineering from the Pennsylvania State University. He has also completed graduate work in astrophysics at the University of Maryland and Penn State, and is a veteran of the U.S. Navy. He worked as a nuclear engineer for 36 years in the Nuclear Analysis and Fuel department of Dominion Virginia Power. He is presently an assistant professor in the Department of Mechanical and Nuclear Engineering at Virginia Commonwealth University where he has taught courses in introductory nuclear engineering, reactor theory, the nuclear fuel cycle, nuclear power plants, computer modeling and simulation, thermodynamics, and the economics of nuclear power.



Maria Molina Higgins is a second year student of the mechanical and nuclear engineering PhD program at VCU. She synthesizes nanomaterials using ionizing radiation such as Gamma Rays and X rays. Additionally, her research involves manufacturing of novel nanostructures that enhance the sensitivity of tissue to radiation therapy in clinical applications. Finally, regarding social activities she is an active member of the American Nuclear Society (ANS) chapter at VCU.



Joe Montague has been a Science Teacher Workshop staff member since the 1990's and as the 2015 Technical Program Director, he has been an active member and former Chair of the Va ANS. With 34 years experience, Joe is currently fleet initial engineering training instructor for Dominion. He holds a B.S. in Nuclear Engineering and a Masters in Resource Economics from the University of Florida. Joe worked in Dominion's Nuclear Fuel group on nuclear fuel fabrication and spent fuel support.



Supathorn Phongikaroon earned his PhD and BS degrees in chemical engineering and nuclear engineering from University of Maryland, College Park in 2001 and 1997, respectively.

Prior joining the Virginia Commonwealth University (VCU) in January 2014, he held academic and research positions at University of Idaho in Idaho Falls, ID; Idaho National Laboratory in Idaho Falls, ID; and Naval Research Laboratory, Washington, D.C. During his research career, Dr. Phongikaroon has established chemical and electrochemical separation of used nuclear fuel through pyroprocessing technology and extended his expertise toward material detection and accountability in safeguarding applications. These developments include kinetics in ion exchange process, advanced chemical separation routines via cold fingers and zone freezing, electrochemical methods, laser induced breakdown spectroscopy, and computational modeling for electrorefiner. This effort has led to establishing a strong Radiochemistry and Laser Spectroscopy Laboratories at VCU. Dr. Phongikaroon's work has been published in over



thirty papers in peer-reviewed journals and presented at over fifty international and national conferences and workshops.

Paul Riley is a certified nuclear medicine technologist and nuclear cardiology technologist. He has 11 years' experience and 10 years' experience teaching at VCU's Nuclear Medicine Technology Program. He routinely performs continuing education lectures for the profession.



David Sanderson has worked in the nuclear power field for almost fifty years. He participated in the Navy nuclear power program, and served on the USS Enterprise. He went to work for Vepco (now Dominion) at Surry Power Station in 1971 as an operator. He has held Reactor Operator and Senior Reactor Operator licenses. After a few years, he moved into the Training Department and works as an Operations instructor until his retirement in 2010. He has since worked as a contractor in projects involving nuclear fuel manufacturing, post-Fukushima modifications, and cyber security.



Celina Thadigiri works at the VCU Center for Molecular Imaging and is responsible for the development of radioanalytical methods for the detection and identification of imaging probes and metabolites. She is also responsible for manufacturing and chemical analysis of clinical grade PET radiopharmaceuticals.



Daniell Tincher is a Ph.D. student in the Mechanical and Nuclear Engineering Department at VCU. His research focuses on real-time, event-driven modeling and simulation of nuclear power plants to engage nuclear engineering students and improve the efficiency of nuclear power plant studies. Prior to attending VCU, Daniell worked as a mechanical engineer in the Reactor Plant Planning Yard at Newport News Shipbuilding, in Newport News, VA. He performed engineering studies to improve performance and/or reduce operational and maintenance costs of aircraft carrier reactor plant fluid systems. Daniell received a master's degree in nuclear engineering from the University of South Carolina in 2010. His thesis examined the feasibility of minor actinide transmutation in light water reactors to reduce the burden of high level waste, and he co-authored a paper regarding this work. Daniell received his bachelor's degree in physics from Presbyterian College in Clinton, SC in 2007.



Miguel Toro received his B.Eng. degree in Mechanical Engineering from the National University of Colombia in 2014. He is currently pursuing the Ph.D. degree in Mechanical and Nuclear Engineering Program with Virginia Commonwealth University. His research is related with the development of multifunctional nanoparticles that can be used for the diagnostic and treatment of cancer. His current project is focused on magnetic nanoparticles that can be used for multiple molecular imaging techniques such as MRI and PET. His research interests include nanomaterials synthesis, radiation shielding, nuclear medicine, and molecular imaging.



Keith Welch is a health physicist with 35 years' experience in radiation protection. He is currently the deputy manager of the radiation control department at Thomas Jefferson National Accelerator Facility, where he has worked for 24 years. Prior to working in accelerator health physics, he worked as a technician, supervisor and technical trainer at a commercial nuclear power station. He began his radiation safety career as a radiation control technician supporting overhaul and refueling of naval nuclear power plants. Keith is a Certified Health Physicist



and registered Radiation Protection Technologist. Keith has a B.S. degree in technical management and a Master's degree in health physics.

Nick Wilson currently works in Dominion's Nuclear Engineering & Fuel (NEF) department in the Fuel Project Engineering group. Previously, he worked in the Nuclear Core Design group, starting with the company in 2013. In addition to his normal work duties, Nick leads the NEF department's University Partnership program helping to recruit prospective students and maintain relationships with universities. Nick is also the President of the Dominion-Innsbrook chapter of North American Young Generation in Nuclear (NAYGN). He graduated with his Bachelor of Science from Purdue University in Nuclear Engineering in 2013. Currently he is enrolled at North Carolina State University pursuing a Master of Nuclear Engineering and at Averett university pursuing a Master of Business Administration. While attending Purdue, Nick was an active member of Purdue's local ANS chapter and an ambassador for the Purdue Professional Practice Program.



Connie Wooldridge was an instructor in Henrico County at the Advanced Career Education Center at Highland Springs. She taught the High Tech Academy program from 2003-2016. Each year she taught VCU Chemistry, VCU Calculus, VCU Pre-Calculus, Engineering Explorations I, and Engineering Studies. Connie studied theatre and chemistry at Mary Baldwin College before getting a master in chemistry at Louisiana State University. She completed her education with a master in Mechanical and Nuclear Engineering at Virginia Commonwealth University. This year, she is excited to take some time off to be with her 3-year-old daughter.

