Nuclear and Radiation Studies Board

Committee

William H. Tobey

Chair

William H. Tobey directs the Office of National Security and International Studies at the Los Alamos National Laboratory. He is also a Senior Fellow with the Avoiding Great Power Wars Project at Harvard Kennedy School's Belfer Center. From 2009-2021, Tobey was a Senior Fellow and Lecturer at the Harvard Kennedy School’s Belfer Center for Science and International Affairs. Tobey served as Deputy Administrator for Defense Nuclear Nonproliferation at the National Nuclear Security Administration from 2006-2009. There, he managed the U.S. government's largest program to prevent nuclear proliferation and terrorism by detecting, securing, and disposing of dangerous nuclear material. He also served on the National Security Council Staff under three presidents, in defense policy, arms control, and counter-proliferation positions. He has participated in international negotiations ranging from the START talks with the Soviet Union to the Six Party Talks with North Korea. Tobey also has a decade of experience in investment banking and venture capital. He currently chairs the Nuclear and Radiation Studies Board of the National Academies of Sciences Engineering and Medicine, and the board of the World Institute for Nuclear Security. He is also on the executive committee of the nonproliferation division of the American Nuclear Society. He received a B.S. from Northwestern University and an M.P.P. degree from Harvard University.

Amy Berrington de Gonzalez

Vice Chair

Amy Berrington de González originally trained in mathematics and applied statistics and then received a DPhil in Cancer Epidemiology from the University of Oxford in 2001. After completing her postdoctoral research in Professor Valerie Beral's department at the University of Oxford she moved to the US in 2005 to take up a position as an Assistant Professor in Epidemiology and Biostatistics at the Johns Hopkins Bloomberg School of Public Health. She joined the Radiation Epidemiology Branch at the US National Cancer Institute in 2008, was awarded scientific tenure as a Senior Investigator in 2011 and promoted to Branch Chief in 2014. Professor Berrington moved back to the UK in 2022 to the Institute of Cancer Research in London where she is a Group leader and Professor of Clinical epidemiology. She is also a Visiting Professor at Imperial College London. Professor Berrington specialises in using real world data to quantify the late-effects from cancer treatments, medical radiation exposures and other medications. She has led several large-scale electronic record linkage studies including a cohort study of breast cancer survivors, the UK Pediatric CT scan cohort and the first multi-center study comparing proton therapy to photon therapy for childhood cancer treatment. She has a particular interest in the epidemiological methods that underpin the use of real world data and is co-editor of a forthcoming book on these methods for bias assessment. Since joining ICR she has become the Principal Investigator for the Generations Study. Professor Berrington is the Vice-Chair of the National Academy of Science Nuclear and Radiation Studies, the founding President of the International Society for Radiation Epidemiology and Dosimetry (ISORED) and has served on many national and international radiation and cancer epidemiology advisory boards and review committees. She previously served on the editorial board for the American Journal of Epidemiology.

Brooke R. Buddemeier

Member

Brooke Buddemeier is a certified health physicist in the Global Security Directorate of Lawrence Livermore National Laboratory (LLNL), providing technical leadership for multi-organizational efforts to deliver sound supporting science for radiological and nuclear terrorism risk assessments and response support. Mr. Buddemeier facilitates response preparedness activities through advanced modeling and close coordination with international, federal, state, and local response organizations. He led the technical team that supported the development of the 2023 edition of the FEMA Planning Guidance for Response to a Nuclear Detonation (2022) and co-authored the FEMA Nuclear Detonation Response Guidance (2023). Throughout his career he has also been part of NNSA's Nuclear Emergency Support Teams, such as the Radiological Assistance Program (RAP), a national emergency response resource that assists federal, state and local authorities in the event of a radiological incident. He also supports international preparedness and response activities such as the International Commission on Radiological Protection, USAID's international Disaster Assistance Response Team, and NNSA Office of Radiological Security. Mr. Buddemeier is a Scientific Vice President and board member of the National Council on Radiation Protection and Measurements (NCRP) and served on the scientific committees for several NCRP Reports, including: Report No. 165 – Responding to a Radiological or Nuclear Terrorism Incident: A Guide for Decision Makers, Report No. 175 – Decision Making for Late-Phase Recovery from Major Nuclear or Radiological Incidents, and Report No. 179 – Guidance for Emergency Response Dosimetry. Mr. Buddemeier is Certified Health Physicist who received a Bachelor of Science in Nuclear Engineering from the University of California, Santa Barbara and a Master of Science in Radiological Health Physics from San Jose State University.

Madelyn R. Creedon

Member

Madelyn Creedon had a long career in federal service; she served most recently as Principal Deputy Administrator of the National Nuclear Security Administration (NNSA) within the Department of Energy, a position she held from 2014 to 2017. She also served in the Pentagon as Assistant Secretary of Defense for Global Strategic Affairs from 2011 to 2014, overseeing policy development in the areas of missile defense, nuclear security, combatting WMD, cybersecurity, and space. She served as counsel for the U.S. Senate Committee on Armed Services for many years, beginning in 1990; assignments and focus areas included the Subcommittee on Strategic Forces as well as threat reduction and nuclear nonproliferation. During that time, she also served as Deputy Administrator for Defense Programs at the NNSA, Associate Deputy Secretary of Energy, and General Counsel for the Defense Base Closure and Realignment Commission. She started her career as a trial attorney at the Department of Energy. Following retirement from Federal Service in 2017, Madelyn established Green Marble Group, LLC, a consulting company and currently serves on several advisory and other boards related to national security. She is also a non-resident senior fellow at The Brookings Institution and a research professor at the George Washington University Elliott School of International Affairs. She holds a J.D. from St. Louis University School of Law, and a B.A. from the University of Evansville.
She holds a Juris Doctor from St. Louis University School of Law, and a bachelor's from the University of Evansville.

Lawrence T. Dauer

Member

Lawrence T. Dauer, Ph.D., DABHP, FHPS, is an Attending Physicist in the Departments of Medical Physics and Radiology at Memorial Sloan Kettering Cancer Center and is their Corporate Radiation Safety Officer. He has spent more than 35 years in the field of radiation protection and health physics, including programs for the nuclear energy and industrial sectors as well as operations and research in medical health physics. His research focuses on low dose radiation epidemiology and dosimetry, improving radiation protection practices and communication avenues to reduce the risk of exposure to ionizing radiation and to facilitate beneficial clinical applications. He is currently a Council member and former Board member of the National Council on Radiation Protection and Measurements (NCRP). He is currently serving NCRP as the Scientific Coordinator for the Million Person Study of Low-Level and Low-Dose-Rate Effects. He served 7 years on the International Commission on Radiological Protection Committee 3, Radiation Protection in Medicine, and has served on several committees for the Health Physics Society (HPS), Greater New York Chapter of the HPS, Radiological and Medical Physics Society, American Association of Physicists in Medicine, American College of Radiology, Society for Interventional Radiology, and Radiation Research societies. He has received the Elda E. Anderson and the Fellow Awards from the HPS.

Shaheen A. Dewji

Member

Shaheen A. Dewji is an Assistant Professor in the Nuclear and Radiological Engineering and Medical Physics Programs in the George W. Woodruff School of Mechanical Engineering at the Georgia Institute of Technology. Prior, Dr. Dewji was a faculty member in Department of Nuclear Engineering at Texas A&M University and a Faculty Fellow of the Center for Nuclear Security Science and Policy Initiatives. In her preceding role at Oak Ridge National Laboratory (ORNL), Dr. Dewji was Radiological Scientist in the Center for Radiation Protection Knowledge. Her recent research has included assessment of patient release criteria for nuclear medicine patients, as well as development of dose coefficients associated with the external exposure and internal uptake of radionuclides due to environmental or nuclear security exposures. Dr. Dewji completed her M.S. (2009) and Ph.D. (2014) degrees in Nuclear and Radiological Engineering at the Georgia Institute of Technology in Atlanta, GA, and is an alumni of the Sam Nunn Security Program. As a native of Vancouver, Canada, she received her Bachelor of Science in Physics from the University of British Columbia (2006). Since 2020, Dr. Dewji has served as a member of the National Academies of Science, Engineering, and Medicine. She was recently appointed to serve on the National Council on Radiation Protection and Measurements (NCRP) PAC-6 and the International Commission on Radiological Protection (ICRP) Task Group 127.

Donald P. Frush

Member

Donald P. Frush is Professor of Radiology at Duke University Medical Center. Dr. Frush's research interests are predominantly focused on pediatric body computed tomography (CT), including technology assessment, techniques for pediatric computed tomography examinations, assessment of image quality, and CT radiation dosimetry and dose reduction as well as radiation risk communication. International affiliations include the World Health Organization and the International Atomic Energy Agency. Dr. Frush is a Fellow of the ACR, and the Society of Advanced Body Imaging and is currently a board member of the Society for Pediatric Radiology and Chair of the Image Gently Alliance. Prior leadership roles have included with the American Board of Radiology, American College of Radiology (ACR) and Radiological Society of North America. Dr. Frush received a BS from The University of California Davis, MD from Duke University, was a pediatric Resident at University of California San Francisco from 1985 to 1987, a radiology resident at Duke, and finished a pediatric radiology fellowship at Children's Hospital Medical Center in Cincinnati in 1992. He returned to Duke after a position as Professor of Radiology at Lucile Packard Children's Hospital at Stanford from 2018-2020.

Suzanne E. Lapi

Member

Suzanne E. Lapi is the Emmet O'Neal II Professor, O'Neal Comprehensive Cancer Center and Professor of Radiology and Chemistry and Cyclotron Facility Director at the University of Alabama at Birmingham. She is also the Vice Chair of Research in the Department of Radiology. Her research interests are in the development and translation of new positive emission tomography (PET) radionuclides and molecular imaging agents. She oversees production of PET radionuclides and imaging radiopharmaceuticals for preclinical research and clinical trials. Her group holds >15 approved investigational new drugs and supplies 64Cu, 89Zr, 203Pb and other isotopes to groups across the United States and internationally. She is a Fellow of the Society of Nuclear Medicine and Molecular Imaging (SNMMI) and a strong advocate of radiopharmaceutical sciences and the training of future nuclear and radiochemists at the graduate, postdoctoral, and faculty levels. In 2024 she received the Micheal J Welch award from the SNMMI for her scientific and mentorship activities in the field of radiopharmaceutical chemistry. Lapi received a Ph.D. in chemistry from the Simon Fraser University, Canada.

Nicole E. Martinez

Member

Nicole E. Martinez is an Associate Professor in the Department of Environmental Engineering and Earth Sciences at Clemson University. Since 2019 she is also a Joint Faculty Appointee within the Center for Radiation Protection Knowledge at Oak Ridge National Laboratory. Her first professional position was as an officer in the U.S. Navy where she served just under four years, first as a nuclear power instructor and later a radiation health officer. After separating from the Navy, she worked for 2 years in industry before attending graduate school. A portion of her doctorate work involved spending ~1.5 years at Savannah River National Laboratory. Her current research focuses on dosimetric modeling and the behavior and effects of radiological contaminants in the environment. She is a Certified Health Physicist since 2015, vice-chair of Committee 4 of the International Commission on Radiological Protection, and a member of the National Council on Radiation Protection and Measurements. She is also a board member on the Centers for Disease Control and Prevention/National Institute for Occupational Safety and Health Advisory Board on Radiation and Worker Health. Martinez received an M.S. and Ph.D. in radiological health sciences from Colorado State University.

Per F. Peterson

Member

Per F. Peterson (NAE) holds the William and Jean McCallum Floyd Chair in the Department of Nuclear Engineering at the University of California, Berkeley. He is also a Senior Advisor and former Chief Nuclear Officer for Kairos Power, where he guides nuclear technology review and advises on scientific and technical topics for KP-FHR technology development and licensing. His research and teaching at UC Berkeley have focused on high-temperature fission and fusion energy systems, as well as topics related to the safety and security of nuclear materials and waste management. He chaired the UC Berkeley Radiation Safety Committee, which provides oversight of the use of radiation and radioactive materials in campus research, from 2002 to 2015. He was appointed in February 2010 as a member of the Blue Ribbon Commission on America's Nuclear Future and co-chaired its Reactor and Fuel Cycle Technology Subcommittee with Senator Pete Domenici. He has served as a member or chair of numerous advisory committees for the national laboratories and National Research Council. He participated in the development of the Generation IV Roadmap in 2002 as a member of the Evaluation Methodology Group, and co chaired its Proliferation Resistance and Physical Protection Working Group until 2017. His research in the 1990's contributed to the passive safety systems in the GE ESBWR and Westinghouse AP-1000 reactor designs. He holds MS (1986) and PhD (1988) degrees from UC Berkeley and a BS (1982) degree from the University of Nevada, Reno, in mechanical Engineering.

Monica C. Regalbuto

Member

Monica C. Regalbuto is the Vice President for Science and Technology at Nuclear Laboratory Partners of Canada, Inc. a Battelle Memorial Institute partnership. Prior to Battelle, Regalbuto led the integrated fuel cycle strategy at the Idaho National Laboratory (INL) and served as a member of the Standing Advisory Group on Nuclear Energy (SAGNE) at the International Atomic Energy Agency. She has served in multiple national leadership roles and she is an INL and American Nuclear Society (ANS) fellow. She previously served as Assistant Secretary for the Office of Environmental Management for the U.S. Department of Energy (DOE Deputy Assistant Secretary for Fuel Cycle Technologies with DOE's Office of Nuclear Energy, and head of the Process Chemistry and Engineering Department in the Chemical Sciences and Engineering Division at Argonne National Laboratory. Regalbuto is a leader in the development of nuclear fuel cycle technologies, combining her knowledge in separations, computer simulations, and proliferation risk reduction. She has over 35 years of experience in radio-isotope processing, recovery and immobilization for environmental remediation, resource conservation and medical applications. She has made key contributions to nuclear fuel cycle technology, beginning with the TRUEX process for removing transuranic elements from aqueous acidic solutions such as those found at DOE waste sites throughout the United States, followed by the development of advanced separations processes as alternatives for recycling spent fuel. She led the development of AMUSE, a computer model used by researchers to optimize processes for separating dissolved spent nuclear fuel. She is a member of ANS, American Institute of Chemical Engineers, American Chemical Society, Society of Women Engineers, and Sigma Xi. Regalbuto received a B.S. from Monterrey Institute of Technology and Higher Education, Mexico and an M.S. and Ph.D. in chemical engineering from the University of Notre Dame.

James A. Rispoli

Member

James Rispoli is Professor of Practice with the Center of Nuclear Energy Facilities and Structures and North Carolina State University. He previously served as a career Naval Officer in the Civil Engineer Corps, from which he retired as Captain, and later as a career executive in the Civil Service, who accepted a Presidential appointment as Assistant Secretary of Energy and served in this capacity for nearly four years. His expertise is in nuclear facilities and infrastructure and in prior roles in the private sector, he was president of two engineering firms, one of which provided project management services to the Department of Energy nuclear programs. His numerous honors include three awards of the Legion of Merit, three national awards from the American Society of Civil Engineers including the Presidents' Award, the Society of Military Engineers' Golden Eagle Award, The Secretary of Energy's Award of Excellence, and designation by the National Academies as "National Associate" in 2020. Rispoli received a B.Eng. in civil engineering from Manhattan College and an M.S. in civil engineering from the University of New Hampshire. He is a licensed Professional Engineer in North Carolia and Virginia and certified in Radiation Protection as a Board Certified Environmental Engineer (American Academy of Environmental Engineers and Scientists). He previously served on the National Academies Board on Infrastructure and the Constructed Environment and as chair of the Federal Facilities Council.

Man-Sung Yim

Member

Man-Sung Yim is the Director of the Center for Nuclear Security Science and Policy Initiatives and Professor in the Department of Nuclear Engineering at Texas A&M University. Formerly, he served on the Nuclear Engineering faculty at Korea Advanced Institute of Science and Technology, North Carolina State University (NCSU) and the Massachusetts Institute of Technology. He was also a joint faculty between Oak Ridge National Laboratory and NCSU, a Sam Nunn International Security Fellow at Georgia Tech, a member of North Carolina Science Advisory Board on Air Toxics Emissions, and a member of Nuclear Nonproliferation External Steering Committee of Idaho National Laboratory. Yim's work seeks to promote the safe and responsible use of nuclear technology with research activities covering nuclear nonproliferation, nuclear waste management, nuclear safety, and nuclear energy policy. He wrote a textbook, "Nuclear Waste Management: Science, Technology, and Policy." He is a member of the Scientific Program Committee of Comprehensive Test Ban Treaty Organization, Council of Advisors on Nuclear Education, Science, Technology and Policy of OECD/NEA, and Korean National Academy of Engineering. Yim received a B.S. and M.S. in nuclear engineering from Seoul National University, South Korea, a Ph.D. in nuclear engineering from the University of Cincinnati, and an S.M. and Sc.D. in environmental health science from Harvard University.