

CEP Outlier Expert Bios
May 28, 2020 Meeting

Michael L. Corradini - is a professor in the Department of Engineering Physics at the University of Wisconsin, Madison. Dr. Corradini's research focus is nuclear engineering and multiphase flow with specific interests that include reactor safety, and energy policy analysis. He received his B.S. in mechanical engineering from Marquette University and his M.S. and Ph.D. degrees in nuclear engineering from the Massachusetts Institute of Technology. He is a member of the American Institute of Chemical Engineers, the American Society of Engineering Education, and the American Society of Mechanical Engineers, and a Fellow of the American Nuclear Society. Dr. Corradini has received numerous awards including the National Science Foundation's Presidential Young Investigator Award, the American Nuclear Society reactor safety best paper award, and the University of Wisconsin, Madison, campus teaching award. He has served on various technical review committees, including the research review panel of the U.S. Nuclear Regulatory Commission. He currently serves on the U.S. Nuclear Regulatory Commission's Advisory Committee on Reactor Safeguards and was president of the American Nuclear Society in 2013-2014. Dr. Corradini was elected to the National Academy of Engineering in 1998.

Kevin D. Crowley - Dr. Kevin D. Crowley's professional interests focus on the application of science & technology to improve societal wellbeing, advance public policymaking, and enhance international cooperation, particularly with respect to the safety, security, and efficacy of nuclear and radiation-based technologies and applications. He held several positions at the National Academies of Sciences, Engineering, and Medicine in Washington, DC, from 1993 until his retirement in 2019, including senior board director of the Nuclear and Radiation Studies Board; director of the Board on Radioactive Waste Management; and principal investigator for a long-standing cooperative agreement between the National Academy of Sciences and the U.S. Department of Energy for the scientific study of radiation health effects in World War II atomic bombing survivors at the Radiation Effects Research Foundation in Hiroshima, Japan.

Dr. Crowley directed approximately 30 National Academies' studies on nuclear safety and security, radioactive waste management and environmental cleanup, medical isotope production, and a variety of other issues. These include a study on nuclear and radiological threats in *Making the Nation Safer* (2002), undertaken at the request of the U.S. government after the September 11, 2001, terrorist attacks on the United States; *Going the Distance? The Safe Transport of Spent Nuclear Fuel and High-Level Radioactive Waste in the United States* (2006); *Analysis of Cancer Risks in Populations Near Nuclear Facilities: Phase I* (2012); and the congressionally mandated studies *Safety and Security of Commercial Spent Nuclear Fuel Storage* (2004, 2006) and *Lessons Learned from the Fukushima Nuclear Accident for Improving Safety and Security of U.S. Nuclear Plants* (2014, 2016).

Dr. Crowley holds M.A. and Ph.D. degrees, both in geology, from Princeton University and held positions at Miami University of Ohio, the University of Oklahoma, and the U.S. Geological Survey before joining the National Academies staff. He received the Lifetime Achievement Award from the

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National Academies in 2013 for outstanding contributions to the Academies' missions and the Order of the Rising Sun, Gold Rays with Rosette, from the Government of Japan in 2018 for promoting international cooperation in the nuclear field.

Tom Isaacs - Tom Isaacs is an internationally recognized expert whose work focuses on issues at the intersection of nuclear energy, national security, waste management, siting controversial facilities, complex decision making, and earning public trust and confidence. Mr. Isaacs is the Independent Strategic Advisor to Southern California Edison (SCE) for nuclear waste. He is also chair of the Experts Team formed by SCE to provide advice on options to move the spent fuel off the site of the shutdown San Onofre Nuclear Generating Station. He is a long time senior advisor to the Nuclear Waste Management Organization of Canada. He is a senior advisor to NTI, a Washington, D.C. based NGO bringing together senior nuclear specialists from around the world to collaborate on scientific and sociopolitical issues of mutual importance. He was the Director of Planning for Lawrence Livermore National Laboratory and Consulting Professor at Stanford University's Center for International Security and Cooperation. Previously Mr. Isaacs served in a number of executive positions in the Department of Energy and led the comparative evaluation of sites for the nation's first geologic repository. He was the senior advisor to the presidentially mandated Blue Ribbon Commission on America's Nuclear Future. He has served as a member of the National Academy of Sciences Nuclear and Radiation Studies Board and the DOE Nuclear Energy Advisory Committee. He has degrees in engineering and applied physics from Harvard University and the University of Pennsylvania.

David Lochbaum - Former director, Nuclear Safety Project, Mr. Lochbaum received a BS in Nuclear Engineering from the University of Tennessee in 1979 and worked as a nuclear engineer in nuclear power plants for 17 years. In 1992, he and a colleague identified a safety problem in a plant where they were working. When their concerns were ignored by the plant manager, the utility, and the Nuclear Regulatory Commission (NRC), they took the issue to Congress. The problem was eventually corrected at the original plant and at plants across the country. Lochbaum joined UCS in 1996 to work on nuclear power safety. He spent a year in 2009-10 working at the NRC Training Center in Tennessee. He retired in 2018. Areas of expertise: Nuclear power safety, nuclear technology and plant design, regulatory oversight, plant license renewal and decommissioning

Edwin Lyman - is a summa cum laude from NYU with a M.S. and Ph.D. from Cornell in theoretical physics. For the last 16 years he has been Senior Scientist at the Union of Concerned Scientists in Washington, D.C. He has an "L" security clearance from the NRC and has written and spoken widely on nuclear issues. His vitae (<https://www.nrc.gov/docs/ML1814/ML18141A892.pdf>) include 37 journal articles and scientific reports, 39 conferences papers, 69 invited lectures, and 18 Op-Ed articles. Edwin Lyman is an internationally recognized expert on nuclear proliferation and nuclear terrorism as well as nuclear power safety and security. He is a member of the Institute of Nuclear Materials Management, and has testified numerous times before Congress and the Nuclear Regulatory Commission. Since joining UCS in 2003, he has published articles in a number of journals and magazines,

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including Science, the Bulletin of the Atomic Scientists, Science and Global Security, and Arms Control Today, and he has been cited in thousands of news stories, including articles in the Boston Globe, Chicago Tribune, Los Angeles Times, New York Times, Wall Street Journal, Washington Post, and USA Today, and in segments on ABC, CBS, CNN, C-SPAN, MSNBC, NBC, NPR and PBS. Dr. Lyman also co-authored the critically acclaimed book, [Fukushima: The Story of a Nuclear Disaster](#) (New Press), which was published in February 2014. In 2018, Dr. Lyman was awarded the 2018 Leo Szilard Lectureship Award from the American Physical Society.

Some years back he authored a 66 page report "The Health and Economic Impacts of a terrorist attack at the Indian Point Nuclear Plant." I would suggest him as one of our top choices who might focus on the physics of extreme events and what might happen with a terrorist attack.

Arthur T. Motta - is Professor of Nuclear Engineering and of Materials Science and Engineering at the Pennsylvania State University. His research focuses on the environmental degradation of materials in the reactor environment with specific emphasis on nuclear fuel cladding, including radiation damage, corrosion and hydrogen ingress, mechanical behavior of materials, and materials characterization. He holds a B.Sc. in mechanical engineering and an M.Sc. in nuclear engineering from the Federal University of Rio de Janeiro, Brazil, and a Ph.D. in nuclear engineering from the University of California, Berkeley. Before coming to Penn State, he worked for the CEA at the Centre for Nuclear Studies in Grenoble, France, and for Atomic Energy of Canada Limited at the Chalk River Laboratories in Canada. He is a member of the editorial board of the Journal of Nuclear Materials. He received the Mishima Award from the American Nuclear Society for sustained contributions to nuclear fuel research and was awarded the Kroll Medal from ASTM for significant contributions to zirconium metallurgy.

Patrick Papin - (SDSU, Professor of Physics) Professor Patrick Papin received his B.S. degree in physics from Cleveland State University, M.S. degree in radiological physics from San Diego State University, and Ph.D. in biomedical physics from UCLA. He joined the physics faculty at SDSU in 1985. He has served as Chair of both the Department of Physics and the University Senate. He also has served as associate and interim Dean of the College of Sciences. He is actively involved in the mentoring and advising students in physics, environmental sciences, and homeland security. He has been involved with the Homeland Security Science and Technology Testbed and the Regional Technology Center (RTC) in efforts related to Golden Guardian 2010 and DHS-DNDO West Coast Maritime Preventative Radiological and Nuclear Detection Pilot (PRND).

Research Interests:

Dr. Papin's work involves both experimental and computer modeling in radiological physics and homeland security. His research involves novel scintillation radiation detectors for use in medical physics and homeland security. Radiation transport modeling work includes predictions of radiation dose distributions as a result of a nuclear accident or by actions of terrorism. His research involves the use of positron emitting radionuclides for mammography imaging. Radiation transport modeling work is within the areas of imaging and dosimetry. Also, these transport models predict radiological dose distributions as a result of a nuclear accident or by acts of terrorism.