

Evaluating Testing, Costs, and Benefits of Advanced Spectroscopic Portals

Committee

Robert C. Dynes

Chair

Robert C. Dynes (NAS) is the 18th president of the University of California (UC) and a professor of physics at UC Berkeley, where he directs a laboratory that focuses on superconductivity. Dr. Dynes served as chancellor of UC San Diego from 1996 to 2003 after six years in the physics department, where he founded an interdisciplinary laboratory in which chemists, electrical engineers, and private industry researchers investigated the properties of metals, semiconductors, and superconductors. Prior to joining the UC faculty, he had a 22-year career at AT&T Bell Laboratories, where he served as department head of semiconductor and material physics research and director of chemical physics research. Dr. Dynes received the 1990 Fritz London Award in Low Temperature Physics, was elected to the National Academy of Sciences in 1989, and is a fellow of the American Physical Society, the Canadian Institute for Advanced Research, and the American Academy of Arts and Sciences. He serves on the Executive Committee of the U.S. Council on Competitiveness. A native of London, Ontario, Canada, and a naturalized U.S. citizen, Dr. Dynes holds a bachelor's degree in mathematics and physics and an honorary doctor of laws degree from the University of Western Ontario, and master's and doctorate degrees in physics and an honorary doctor of science degree from McMaster University. He also holds an honorary doctorate from L'Université de Montréal.

Richard E. Blahut

Member

Richard E. Blahut (NAE) is the Henry Magnuski Professor of Electrical and Computer Engineering at the University of Illinois and the head of that department. He also holds the title of research professor in the Coordinated Science Laboratory. From 1964 to 1994, Blahut was employed in the Federal Systems Division of IBM, where he had general responsibility for the analysis and design of coherent signal processing systems, digital communications systems, and statistical information processing systems. He was responsible for the original development of passive coherent location systems, now a major technique used in the U.S. Department of Defense. Other contributions to industry include the development of error-control codes for the transmission of messages to the Tomahawk missile, codes to protect text data transmitted via the U.S. public broadcasting network, and the design of a damage-resistant bar code for the British Royal Mail. Dr. Blahut has authored a series of advanced textbooks and monographs in error-control coding, information theory, and signal processing, including ten books either published or in manuscript form. Dr. Blahut served as president of the Information Theory Society of the Institute of Electrical and Electronics Engineers (IEEE) in 1982, and was editor-in-chief of the IEEE Transactions on Information Theory from 1992 until 1995. He was elected to the National Academy of Engineering in 1990. He is a fellow of the IEEE. He is the recipient of the IEEE Alexander Graham Bell Medal, the IEEE Claude E. Shannon Award, the Tau Beta Pi Daniel C. Drucker Eminent Faculty Award, and an IEEE Millennium Medal. He received his Ph.D. degree in electrical engineering from Cornell University.

Robert R. Borchers

Member

Robert R. Borchers, a physicist and expert in computation, is chief technology officer for the Maui High Performance Computing Center at the University of Hawaii. Prior to joining the University of Hawaii, he served eight years at the National Science Foundation as director of the Division of Advanced Computational Infrastructure and Research. Earlier in his career, he was a professor of physics before holding several high-level management positions in universities and laboratories, including associate director for computation at Lawrence Livermore National Laboratory, vice chancellor for academic affairs at the University of Colorado – Boulder and the University of Wisconsin, Madison, and director of the Physical Sciences Laboratory at Madison. Dr. Borchers has received numerous awards and is a fellow of the American Physical Society. Dr. Borchers received his B.S. degree from the University of Notre Dame and M.S. and Ph.D. degrees from the University of Wisconsin, Madison, all in physics.

Philip E. Coyle, III

Member

Roger L. Hagengruber

Member

Roger L. Hagengruber is the director of the Office for Policy, Security and Technology (OPS&T) and the Institute for Public Policy (IPP) and a research professor (political science and physics) at the University of New Mexico. Until June 5, 2008, he is also chief security officer and chief cyber security officer for Los Alamos National Laboratory. He was formerly a senior vice president at Sandia National Laboratories and directed Sandia's primary mission in nuclear weapons during the transition following the end of the Cold War. Dr. Hagengruber spent much of his 30-year career at Sandia in arms control and non-proliferation activities including several tours in Geneva as a negotiator. In recent years, he has focused on the nuclear transition in the former Soviet Union and on security issues associated with counter-terrorism and has chaired or served on numerous panels that have addressed these issues. His work at the University of New Mexico includes directing the IPP work in public surveys including sampling of U.S. and European views on a wide range of security issues. The OPS&T creates multidisciplinary teams from labs and universities to explore policy options for issues in which security and technology are interrelated. He previously served on the Nuclear and Radiological Panel of the National Research Council's Committee on Science and Technology for Countering Terrorism. He received his Ph.D. degree in experimental nuclear physics from the University of Wisconsin and is a graduate of the Industrial College of the Armed Forces.

Carl N. Henry

Member

Carl N. Henry retired from Los Alamos National Laboratory in December 2001, where he worked for over 40 years. Following retirement, he did part-time consulting for Sandia National Laboratories at U.S. Department of Energy headquarters in 2006. From 1994 to 2001, Henry worked on foreign nuclear weapons intelligence and counter-intelligence analysis. In 1997, he received the Intelligence Community Seal Medallion for meritorious service. From 1975 until 1994, he worked on the Nuclear Emergency Search Team (NEST) Program. During that time he served many roles including staff member, group leader, and program manager. Over his career Henry has participated in search and diagnostics activities, real deployments and exercises, and led the planning for one major exercise. In addition, he has conducted nuclear safeguards research as part of a team using active analysis of nuclear material with a Cockcroft-Walton accelerator and neutron and ray detectors for portal monitoring applications.

John M. Holmes

Member

John M. Holmes is deputy executive director of operations at the Port of Los Angeles, overseeing the operations of the Los Angeles Port Police, the Homeland Security Division, emergency preparedness planning, and the Port Pilot service. Before his current position, he most recently served as a principal and chief operating officer of the Marsec Group, a full service security consulting firm specializing in supply chain security, technology and operations. Prior to forming the Marsec Group, Captain Holmes held the position of vice president and director of business development for Science Applications International Corporation (SAIC), where he assisted government and commercial customers in the development of technological solutions to homeland security challenges, with emphasis on port, border and military security solutions. Captain Holmes retired from the United States Coast Guard in 2003 with 27 years of service as commanding officer, officer in charge of marine inspection and captain of the Port for the Los Angeles-Long Beach port complex. While in the Coast Guard, he also served as deputy chief of the Coast Guard Office of Congressional Affairs, was attached to the staff of the governor of American Samoa and the U.S. ambassador to the Republic of Singapore, and also served as delegate and committee chairman at the International Maritime Organization in London. Captain Holmes received bachelor's degrees in English and education from Boston College, and an M.B.A. degree from the John M. Olin School of Business at Washington University in St. Louis.

Karen Kafadar

Member

Dr. Karen Kafadar is a statistics professor in the Department of Mathematical & Statistical Sciences at the University of Colorado at Denver. Her research focuses on robust methods, data analysis, and characterization of uncertainty in the physical, chemical, biological, and engineering sciences. Her previous appointments include National Institute of Standards and Technology (NIST), Hewlett Packard, and the National Cancer Institute. At the University of Colorado, she directs the Statistical Consulting Service, collaborates with researchers in the School of Medicine, and teaches courses in applied and theoretical statistics. She is currently serving as chair of the NRC's Committee on Applied and Theoretical Statistics (CATS) and on the Board of Mathematical Sciences and their Applications (BMSA). She has served as Editor or Associate Editor on several editorial review boards and on the governing boards of the American Statistical Association (ASA), the Institute of Mathematical Statistics, and the International Statistical Institute. Dr. Kafadar is a fellow of the ASA and has authored over 80 journal articles and book chapters. She received her B.S. in mathematics and M.S. in statistics from Stanford in 1975 and her Ph.D. in statistics from Princeton in 1979.

C. M. Lederer

Member

C. (Charles) Michael Lederer is a research chemist and deputy director emeritus of the University of California Energy Institute, where he is responsible for the planning and management of the Energy Institute's grant programs. For 20 years, he was a lecturer teaching courses in radiation detection and measurement, and chemical methods in nuclear technology in the Department of Chemistry and the Department of Nuclear Engineering at the University of California at Berkeley. Prior to joining the Energy Institute, Dr. Lederer was head of the Information and Data Analysis Department and director of the Isotopes Project at Lawrence Berkeley Laboratory. He is most widely known as co-author of the 6th and 7th editions of the Table of Isotopes, for which he evaluated nuclear structure and decay data for all known nuclides and computerized the Isotopes Project. Dr. Lederer received an A.B. degree in chemistry from Harvard University and a Ph.D. degree in nuclear chemistry from the University of California at Berkeley.

Keith W. Marlow

Member

Keith W. Marlow is a part-time staff augmentation contractor to Sandia National Laboratories with Orion International Technologies, Inc. Prior to joining Orion, Dr. Marlow was a sole proprietor consultant for Sandia. He has more than 50 years of experience in detection and analysis of nuclear radiation, beginning with the development of methods of detection for nuclear weapon testing in Nevada and Eniwetok in 1952. Dr. Marlow participated in the design of a nuclear reactor, brought the reactor critical for the first time and used the nuclear reactor to develop techniques in neutron activation analysis, neutron radiography and to produce radioactive nuclides for his basic research. This was followed by a lengthy period of research and development in neutron and gamma-ray sensors and data analysis for the U.S. Navy and other government agencies. The sensors were deployed in various environments, including air, maritime, terrestrial and space. He also contributed to development and techniques for the INF and START treaties to verify treaty compliance, to confirm compliance with potential dismantlement treaties, and to confirm the presence of weapons and weapon components for accountability purposes at the Pantex Plant. Dr. Marlow received his Ph.D. degree in nuclear physics from the University of Maryland.

John W. Poston, Sr.

Member

John W. Poston, Sr., is a nationally recognized expert in health physics and shielding, occupational dosimetry, and health effects of radiation releases from accidents and terrorist events. He is professor and past chair of the Department of Nuclear Engineering and a consultant at the Veterinary Teaching Hospital at Texas A&M University. His dosimetry research is supported by the Department of Energy's Office of Nuclear Energy, and he consults with Sandia National Laboratories and a Texas nuclear utility on operational safety issues. He chaired the National Council on Radiation Protection and Measurements committee that produced the 2001 report "Management of Terrorist Events Involving Radioactive Material," and he served as a peer reviewer for the American Association of Railroads on a risk assessment for rail transport of spent nuclear fuel. He was employed at Oak Ridge National Laboratory from 1964-1977, finishing as head of the Medical Physics and Internal Dosimetry Section of the Health Physics Division. Dr. Poston is president emeritus of the Health Physics Society and is a member of the American Nuclear Society, the National Council on Radiation Protection and Measurements, and Sigma Xi, the Scientific Research Society. He received his B.S. degree in mathematics from Lynchburg College and M.S. and Ph.D. degrees in nuclear engineering from the Georgia Institute of Technology.

Henry H. Willis

Member