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Richard Ward is a Senior Research Scientist in the Modeling and Simulation Group of the Computational Sciences and Engineering Division at Oak Ridge National Laboratory. His primary interests are in physics, biomedical engineering, human dosimetry, and modeling and simulation. His early focus was in pharmacokinetics and radiobiokinetics. This research included developing human phantoms for Monte Carlo simulation of exposure to ionizing radiation.

His principal area of research in the last decade has been the development of computational environments for human physiological systems modeling. Along with other ORNL scientists, Dr. Ward pioneered the concept of the Virtual Human: a computational modeling environment that includes both anatomy and physiology, incorporating models at multiple scale levels, for predicting response to trauma, injury and disease. He presented this concept, and the associated underlying computer-based data standards, in an invited talk to the Second Bioindustrialization Workshop at the Wellcome Trust Center in Hinxton, England. In addition, Dr. Ward led the Oak Ridge National Laboratory portion of the Virtual Soldier Project, an initiative of the Defense Advanced Research Projects Agency to revolutionize medical care for the soldier. Most recently, Dr. Ward led a very large team, including ORNL staff and subcontractors, in support of blast prevention technologies including analysis of blast simulation software and development and implementation of improvised explosive device prevention planning software for the Department of Homeland Security's Office for Bombing Prevention.

Dr. Ward has worked on a wide variety of other computational problems including modeling resistivity in binary alloys, groundwater flow in correlated soils, monitoring internal exposure to radionuclides, and pulmonary system flow modeling. He has authored/coauthored more than 45 reports and papers in the open literature, including one book chapter. He has a B.A., M.A. and Ph. D. in physics from the University of California, Riverside, and is a member of the American Physical Society, the Biomedical Engineering Society and Sigma Xi.