

KEYNOTE PRESENTATION 1

Dr. Howard Hall **Director of the UT Institute for Nuclear Security**

Biography

Dr. Hall is the Director of the UT Institute for Nuclear Security. He is appointed as the UT and Oak Ridge National Laboratory Governor's Chair Professor of Nuclear Security, and serves as faculty in both the Department of Nuclear Engineering and the Bredesen Center For Interdisciplinary Research and Graduate Education. Dr. Hall is also a Senior Fellow in Global Security Policy at the Howard H. Baker Jr. Center for Public Policy, where he directs the Baker Center's Global Security Programs.

Professor Hall's research interests include:

Nuclear forensics, particularly developing faster and more reliable radioanalytical processes, and developing a better understanding of the physical, chemical, and nuclear processes underlying nuclear forensics for reducing uncertainty in the interpretation of forensic data.

Nuclear chemistry and radiochemistry, novel separation methods, the evolution of trace material signatures, isotope production and purification research, and physical/chemical properties of isotopes.

Radiation detection and measurement as applied to security-relevant needs, particularly the performance of "systems of systems" against radioactive threats.

Nuclear security policy in the interface between technology, policy and legal frameworks, including treaty verification and arms control, counterterrorism, and nuclear nonproliferation.

Professor Hall received his Ph.D. in Nuclear and Radiochemistry from the University of California, Berkeley, in 1989; and his BS in Chemistry from the College of Charleston in 1985. Prior to joining UT, Dr. Hall spent more than 20 years at Lawrence Livermore National Laboratory, where he led major scientific and operational missions in nuclear and homeland security. During his tenure at LLNL, Dr. Hall led efforts supporting US Government programs in nuclear security applications, aviation safety and security, nuclear threat detection and nuclear emergency response.

Professor Hall is a member of the American Nuclear Society, the American Physical Society, the American Chemical Society, the American Society for Engineering Education, the Institute of Nuclear Materials Management, and is a Fellow of the American Institute of Chemists and the American Association for the Advancement of Science.

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More information on the UT Institute for Nuclear Security is available at nuclear.utk.edu.

TRENDS IN ACADEMIC RADIOCHEMISTRY, WITH HIGHLIGHTS FROM THE UNIVERSITY OF TENNESSEE

Howard L. Hall

The challenges in keeping the radiochemistry field alive in the academic community has been the subject of a number of reviews and studies, including the 2012 National Academies study as the latest example. U.S. academic programs in nuclear and radiochemistry have drastically declined from the levels seen 30 years ago, even as the need (if not the recognition of that need) for radiochemists grows worldwide. These trends are reviewed, and the efforts being undertaken at the University of Tennessee (UT) to develop future generations of radiochemists are highlighted. In particular, the establishment of the NNSA Radiochemistry Center of Excellence at UT has served as a nexus for increasing the development of new radiochemists and research that intersects radiochemistry and nuclear security applications that align with growing needs.

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