"Mass spectrometric innovations for metabolomics"

Richard A. Yost
Colonel Allen R. and Margaret G. Crow Professor and Head, Analytical Chemistry
Director, Southeast Center for Integrated Metabolomics
Professor, Pathology, Immunology, and Laboratory Medicine
University of Florida

Abstract – Translating rapid advances in mass spectrometry into the metabolomics laboratory portends major changes in metabolomic analyses. Innovations in mass spectrometry, including ion mobility and FAIMS, ambient ionization, and imaging mass spectrometry all offer the opportunity for developing more sensitive, selective, informative and rapid methods for metabolomics. This lecture will include a perspective on the changing landscape for mass spectrometry in metabolomics, insights into instrumental innovations, and examples of metabolomics and clinical applications.

Bio – Rick Yost is the Colonel Allen and Margaret Crow Professor and Head of Analytical Chemistry at the University of Florida. He is also the Director of the NIH-funded Southeast Center for Integrated Metabolomics, and Professor of Pathology, Immunology, and Laboratory Medicine.

The Yost group's research has reflected a unique balance between fundamental studies, instrumentation development, and applications in analytical chemistry. Current research is focused on innovations in imaging mass spectrometry and ion mobility instrumentation and techniques, and the application of these innovations in areas such as clinical and metabolomic analysis. Several instruments conceived and developed by Professor Yost and his group are widely used as commercial instruments (with well over $1 billion in instrument sales each year), including the triple quadrupole mass spectrometer, the ion trap tandem mass spectrometer, and the laser microprobe tandem mass spectrometer. Dr. Yost has also been a pioneer in imaging biomolecules in intact tissue, quantitative MALDI tandem mass spectrometry, and high-field ion mobility (IMS and FAIMS).

Dr. Yost has supervised the research of well over 100 graduate students over the past 36 years, graduating over 80 PhDs. Research in his group has led to over 165 publications and 19 patents. He has served as PI or Co-PI on grants totaling over $40M of funding. His research has been recognized with the highest award in his discipline, the 1993 ASMS Award for Distinguished Contribution in Mass Spectrometry.