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Gary M. Hieftje is Distinguished Professor and Mann Chair of Chemistry at Indiana University in Bloomington, Indiana. His research interests include the investigation of basic mechanisms in atomic emission, absorption, fluorescence and mass spectrometric analysis, and the development of instrumentation and techniques for atomic and molecular methods of analysis. He is interested also in the on-line computer control of chemical instrumentation and experiments, the use of time-resolved luminescence processes for analysis, the application of information theory to analytical chemistry, analytical mass spectrometry, near-infrared reflectance analysis, metallomics, and the use of stochastic processes to extract basic and

kinetic chemical information. He has won numerous awards in the fields of analytical chemistry, chemical instrumentation, and spectroscopy, has held major offices in several scientific societies, has delivered many named lectures, and has served on the editorial boards of many major journals. He is the author of over 550 publications, 10 books, and 18 patents. More than 65 students have received doctorates under his direction; many others have received M.S. degrees, and scores of undergraduates and visiting scientists have performed research in his laboratories.

Models, Methods, and Machines for Chemical Measurements

Sir Humphry Davy, famous early 19th-Century chemist, once stated that “Nothing begets good science like the development of a good instrument”. If this statement was valid in Davy’s time, it is even more true today. Indeed, entirely new fields of science have been spawned by the introduction of novel measurement tools. In this presentation, several new kinds of instruments will be described and their capabilities and potential impact evaluated. Audience participation will be sought.