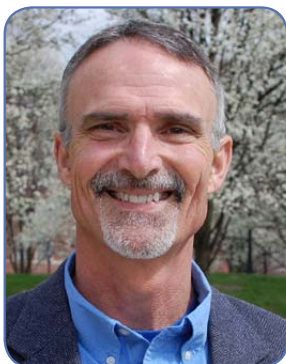


AWARD FOR A DISTINGUISHED CONTRIBUTION IN MASS SPECTROMETRY
2016 RECIPIENT: SCOTT A. McLUCKEY
AWARD LECTURE: 4:45 PM MONDAY, HALL 1, LEVEL 1



Dr. Scott A. McLuckey is the recipient of the 2016 ASMS Award for a Distinguished Contribution in Mass Spectrometry for his pioneering contributions to the understanding of the gas-phase ion/ion reactions of polyatomic molecules and their applications in analytical mass spectrometry.

Gas-phase ion chemistry has played a central role in mass spectrometry since its inception. Unimolecular and ion/neutral reactions, for example, have been observed, studied, and used throughout the entire history of molecular mass spectrometry. While the study of ion/ion reactions originated with J.J. Thomson and has been pursued within the context of plasma chemistry, atmospheric chemistry, and chemistry in the interstellar medium, ion/ion reactions have not been exploited in mainstream mass spectrometry until relatively recently. Keys to this development have been the introduction of techniques capable of generating multiply charged ions, electrospray being chief among them, and the use of electrodynamic ion traps, which can store efficiently oppositely charged ions in overlapping time and space. McLuckey and co-workers, beginning at Oak Ridge

National Laboratory in the mid-1990s and continuing at Purdue University since 2000, initiated and sustained a line of research employing electrospray and ion traps that has revealed a wide and expanding array of ion/ion reactions that significantly expand the scope of tandem mass spectrometry, particularly in biological mass spectrometry.

Dr. McLuckey's efforts in this area have focused both on understanding the dynamics of ion/ion reactions and on developing ion/ion reactions for analytical applications. He and his co-workers demonstrated that ion/ion reactions in ion traps can be both highly efficient and fast. Furthermore, ion/ion reactions are universal in that some form of reaction will occur for any combination of oppositely charged ions. Dr. McLuckey's initial work was focused on proton transfer, and to a lesser extent, electron transfer reactions. Proton transfer reactions have been demonstrated to be particularly useful for charge state manipulation and have been used for mixture analysis, concentrating charge, inverting ion charge, etc. Electron transfer has proved to be particularly useful for generating structural information. For example, the discovery in Donald Hunt's lab of reagent anions that transfer electrons to peptide and protein cations led to the development of electron transfer dissociation. These developments, which leveraged much of what was known about proton transfer ion/ion reactions in ion traps, catalyzed the commercial introduction of ion/ion reactions tools that rely on electrospray and ion traps.

In recent years, McLuckey's group has expanded ion/ion chemistry to include selective metal ion insertion/removal and functional group specific covalent bond formation. Collectively, these chemistries, along with proton and electron transfer, significantly expand the power of MS/MS in characterizing peptides, proteins, oligonucleotides and lipids. The wide-ranging efforts of McLuckey and his colleagues in instrumentation, fundamentals, and applications of ion/ion reactions over the past two decades constitute a distinguished contribution to mass spectrometry.

Dr. Scott A. McLuckey is the John A. Leighty Distinguished Professor of Chemistry at Purdue University, West Lafayette, IN.

RON A. HITES AWARD OUTSTANDING RESEARCH PUBLICATION IN JASMS
AWARD PRESENTATION: ASMS MEETING, 4:45 PM WEDNESDAY, STARS BALLROOM 1, LEVEL 3



The Ron Hites Award recognizes an outstanding publication of original research, based on a paper's innovative aspects, technical and presentation quality, likely stimulation of future research and impact on future applications. The award is named to honor Professor Ron Hites of Indiana University, who led the creation of *JASMS* in 1988 while president of ASMS. The award includes \$2,000 and a certificate for each author.

The 2016 award recognizes Kevin Pagel, Max Planck Society Berlin, and, co-authors Waldemar Hoffmann and Johanna Hofmann for their paper Energy-Resolved Ion Mobility-Mass Spectrometry: A Concept to Improve the Separation of Isomeric Carbohydrates: *JASMS* (2014) 25, 471-479.

Left to right Johanna Hofmann, Kevin Pagel, and Waldemar Hoffmann

