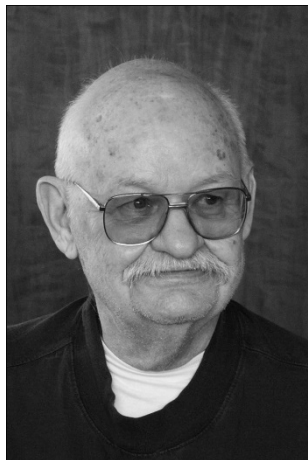


## ASMS AWARDS

### AWARD FOR A DISTINGUISHED CONTRIBUTION IN MASS SPECTROMETRY

2010 Recipient: **Marvin L. Vestal**

Award Lecture: 4:45 – 5:30 pm, Monday, Hall 4



The different components of a mass spectrometer need to be carefully integrated for optimum design and performance. The focused efforts of **Marvin L. Vestal** on the development of practical MALDI-TOF and TOF-TOF mass spectrometers culminated in the first commercial MALDI-TOF instrumentation – the Voyager series. More than one half of MALDI-TOF instruments in use are based on Dr. Vestal's designs. A significant accomplishment of his work is the development of a comprehensive theoretical model for the various components of a TOF analyzer with a view toward optimizing performance of a complete system for particular applications. Dr. Vestal implemented this theoretical approach to design a family of MALDI-TOF instruments that employed delayed extraction, and through further refinements, the construction of a tandem time-of-flight instrument introduced commercially as the 4700 Proteome Analyzer and later the 4800 TOF-TOF by Applied Biosystems. Advances in related technology have been combined with Dr. Vestal's theoretical predictions to provide MALDI-TOF MS and MS-MS systems that out-perform earlier instruments by orders of magnitude. The MALDI-TOF MS and MS-MS systems designed by Dr. Vestal have had and are continuing to have an enormously positive impact on many important areas of research, including proteomics, glycomics, cell signaling, structural biology, tissue imaging, and polymer science.

Dr. Vestal is Founder, CEO, and CSO of Virgin Instruments.

### THE BIEMANN MEDAL

2010 Recipient: **David C. Muddiman**

Award Lecture: 4:45 – 5:30 pm, Tuesday, Hall 4

Mass spectrometric analysis requires analytes to be introduced as gaseous ionized species into the mass analyzer of choice. However, signal abundance is not a direct function of analyte concentration but depends on numerous instrumental and chemical parameters. **David C. Muddiman** discovered that one strand of a PCR amplicon appears more intense than the complementary strand in an electrospray ionization (ESI) mass spectrum. He understood that the extent of hydrophobicity contributed to this effect and his research group was able to obtain a sensitivity gain of one order of magnitude by adding a hydrophobic alkyl chain. Dr. Muddiman has extended this "hydrophobic tagging" approach to also improve the ESI response of peptides. In another major research direction, Dr. Muddiman has developed alternative ion sources for FT-ICR mass spectrometry, including the dual ESI source, matrix-assisted laser desorption electrospray ionization (MALDESI), liquid MALDESI, and an "air amplifier" for more efficient ESI. The significance of these advances is that they allow generation of multiply charged species, which are uniquely suited for FT-ICR MS due to the inverse relationship between frequency and  $m/z$ . Dr. Muddiman has published over 150 papers in peer-reviewed journals and is recognized for his unusual combination of depth and breadth in the field of biological mass spectrometry.



Dr. Muddiman is Professor of Chemistry at North Carolina State University.

### RON A. HITES AWARD FOR OUTSTANDING RESEARCH PUBLICATION IN JASMS

Award Presentation: ASMS Meeting, Wednesday 4:45 – 5:30 pm, Ballroom ACE

The Ron Hites Award recognizes a high quality presentation of outstanding original research. Selection is based on a paper's innovative aspects, technical quality, likely stimulation of future research, likely impact on future applications, and quality of presentation. The Award is named in honor of Professor Ronald A. Hites of Indiana University, who led the creation of *JASMS* in 1988 while president of ASMS.



The 2010 award is presented to **Prof. Facundo Fernandez** for the article "Direct Quantitation of Active Ingredients in Solid Artesunate Antimalarials by Noncovalent Complex Forming Reactive Desorption Electrospray Ionization Mass Spectrometry;" Leonard Nyadong, Sameer Late, Michael D. Grren, Ajay Banga, and Facundo Fernández; *JASMS* 2008, Vol. 19, 380-388. Prof. Fernández is in the School of Chemistry and Biochemistry, Georgia Institute of Technology.

