J. Clarence Karcher Lecture

DEPARTMENT OF CHEMISTRY AND BIOCHEMISTRY◆THE UNIVERSITY OF OKLAHOMA◆NORMAN, OK 73019-5251◆(405) 325-4811◆

Is Pleased to Announce A Seminar
Presented By

J. Michael Ramsey
University of North Carolina

Friday, September 29, 2017
At 3:45 PM
National Weather Center
David L. Boren Auditorium
Room 1313

"Micro- and Nanofluidic Technologies for Addressing Biochemical Measurements"

The first report of micromachined devices that emulate the functions of laboratory chemical instrumentation, the silicon gas chromatograph, occurred nearly four decades ago. Due largely to the modest performance of these early devices, further developments in microelectromechanical systems (MEMS) based chemical instrumentation were slow to materialize. Microfabricated fluidic devices that accomplished chemical measurement strategies were first reported in the early 1990s and demonstrated significant advantages over conventional approaches. Since that time there has been rapidly growing interest in microfabricated fluidic devices (microfluidic chips). The diversity of chemical and biochemical measurement techniques that have been implemented on micro- or nanofabricated devices is significant, in both the research literature and commercial products. Current activities in our laboratory fall into four categories; microfluidic chemical separations with integrated nano-electrospray, microfluidic point-of-care diagnostic applications, nanofluidic devices for single molecule DNA characterization, and MEMS-based mass spectrometry components that enable the realization of handheld mass spectrometers. Selected topics will be presented.

Refreshments will be served at 3:45 pm

REMINDER ~ WEAR YOUR ID

(Biography for Dr. Ramsey on back.)
Biography for J. Michael Ramsey

Dr. J. Michael Ramsey holds the Minnie N. Goldby Distinguished Professor of Chemistry Chair at the University of North Carolina - Chapel Hill. In addition, he is a member of the faculty in the Departments of Biomedical Engineering and Applied Physical Sciences, and the Carolina Center for Genome Sciences. His present research interests include microfabricated chemical instrumentation, micro- and nanofluidics, single molecule DNA characterization, single cell assays, point-of-care clinical diagnostic devices, and highly miniaturized mass spectrometry. He is a member of the National Academy of Engineering and a Fellow of the Optical Society of America, the American Chemical Society, and the American Institute for Medical and Biological Engineering. Dr. Ramsey is a recipient of a senior Alexander von Humboldt Award, the Frederick Capillary Electrophoresis Award, the A. J. P. Martin Gold Medal for Separation Science, the Marcel J.E. Golay Award in Capillary Chromatography, the Jacob Heskel Gabbay Award in Biotechnology and Medicine, the American Chemical Society Division of Analytical Chemistry Award in Chemical Instrumentation, the Pittsburgh Analytical Chemistry Award, the American Chemical Society Award in Chromatography, the CASSS Award for Outstanding Achievement in Separation Science, and the Ralph N. Adams Award in Bioanalytical Chemistry. Moreover, Dr. Ramsey is the scientific founder of Caliper Technologies (NASDAQ:CALP), renamed Caliper Life Sciences and acquired by PerkinElmer in 2011. He is also the scientific founder of the venture-backed companies 908 Devices Inc., a company developing revolutionary compact mass spectrometry and chemical separations-based products, and Genturi Inc., a genomics tools provider. Prof. Ramsey has published over 300 peer-reviewed papers (H-index = 61) and presented over 500 invited, plenary, or named lectures. In addition, he has over 100 issued and 20 pending patents.