



Society for Analytical Chemists OF PITTSBURGH



FEBRUARY MEETING

Monday, February 4, 2008

8:00 PM

Duquesne University
Laura Falk Hall



JAMES JORGENSON, Ph.D..

PROFESSOR
DEPARTMENT OF CHEMISTRY
UNIVERSITY OF NORTH CAROLINA

*“Exploring the Limits of Resolution in
Liquid Chromatography and Capillary Electrophoresis”*



5:30 PM	Social Hour	Student Union - City View Café (6 th Floor)
6:30 PM	Dinner	Student Union - City View Café (6 th Floor)
7:30 PM	Student Affiliate Meeting	Mellon Hall - Room 410
7:40 PM	Business Meeting	Mellon Science Building - Laura Falk Hall
8:00 PM	Technical Meeting	Mellon Science Building - Laura Falk Hall

ABSTRACT:

While the basic separation mechanisms of chromatography and electrophoresis are different, there are still some interesting parallels between them. Pressure is a primary factor controlling separation efficiency (theoretical plates) in liquid chromatography, while electrical potential is a primary factor controlling separation efficiency in electrophoresis. It is possible to increase the separation power of liquid chromatography through the use of smaller particles of packing material and the application of higher pressures for pumping mobile phase. In an analogous manner it is possible to increase the separating power of capillary electrophoresis through the application of higher electrical potentials. Alternatively, enhanced separations can be achieved by creating an "endless" separation system. In capillary electrophoresis, this can be accomplished by doing separations in a circular system (Cyclic Capillary Electrophoresis) or in a linear system with a counterflow (Flow Counterbalanced Capillary Electrophoresis). Similar improvements can be attained by doing liquid chromatography in a cyclic system (Recycling Chromatography).

BIOGRAPHY:

James Jorgenson was born in Kenosha, Wisconsin in 1952. He received his undergraduate education at Northern Illinois University where he received a B.S. in Chemistry in 1974. Following this he entered graduate school at Indiana University, where he worked in the research group of Professor Milos Novotny, and received a Ph.D. in Chemistry in 1979. His Ph.D. research concerned two principal areas; the study of mammalian pheromones, and the development of new detection schemes for liquid chromatography.

Dr. Jorgenson joined the faculty of the University of North Carolina as an Assistant Professor of Chemistry in 1979. He was promoted to Associate Professor in 1985, Professor in 1987, appointed the Francis P. Venable Professor of Chemistry in 1994, and William Rand Kenan, Jr. Distinguished Professor of Chemistry in 1999. He was Chair of the Chemistry Department from 2000 to 2005.

Among the honors he has received are the Esselen Award for Chemistry in the Public Interest in 2004, the Pittsburgh Conference Analytical Chemistry Award in 2005, the American Chemical Society Award in Analytical Chemistry in 2007, and elected to the American Academy of Arts and Sciences in 2007.

Professor Jorgenson is one of the originators of capillary electrophoresis, with his first publications on this topic appearing in 1981. His current research interests include ultrahigh pressure liquid chromatography, multidimensional separations, microscale separations coupled to mass spectrometry, and the design of detectors for chromatography and capillary electrophoresis.

DINNER RESERVATIONS:

Please email Larry Senor, Arrangements Co-Chair at senor@pittcon.org, by Thursday, January 31, 2008 to make dinner reservations. Should you not have email, please call Larry at 724-327-4428. If you want to be placed on the permanent dinner list, let Larry know when you RSVP. The entrée for February is American Pot Roast. Dinner will cost \$8 (\$4 for students) and checks can be made out to the SACP. If you have any dietary restrictions, let Larry know when you leave message.

PARKING:

Duquesne University Parking Garage entrance is on Forbes Avenue. Upon entering the garage receive parking ticket and drive to upper floors. Pick up a parking sticker at the dinner or meeting. Contact Dr. Mitch Johnson at Duquesne University if any difficulties arise.