



Spectroscopy Society of Pittsburgh

January Meeting

Wednesday, January 17, 2018

held at Duquesne University



- 5:30 PM** Technology Forum Speaker's Presentation – **Power Center Ballroom Section C**
5:30 PM Social Hour – **Power Center Fides Shepperson Suite**
6:45 PM Dinner – **Power Center Ballroom Section C**
8:00 PM Business Meeting – **Power Center Ballroom Section C**
8:15 PM Technical Program Speaker's Presentation – **Power Center Ballroom Section C**

Dinner Reservations:

Please register on-line at <http://www.ssp-pgh.org> to make dinner reservations **NO LATER THAN Monday, January 8, 2018 at noon**. Dinner will cost **\$10** (\$5 for students) and checks must be made payable to the SSP. This month's Main Entrée: **Beef Brisket**. Vegetarian Entrée: **Leek Risotto**. If you have any dietary restrictions, please indicate them when you RSVP.

Parking:

The Duquesne University Parking Garage is located on Forbes Avenue. Upon entering the garage, receive parking ticket and drive to upper floors. Pick up a parking chit at the dinner or meeting.

TECHNOLOGY FORUM - 5:30 PM

Martin H. Bluth, MD, PhD

Chief Medical Officer, Consolidated Laboratory Management Systems



Dr. Bluth completed his MD and PhD (Immunology) degrees at SUNY Downstate Medical Center, residency in Clinical Pathology at Kings County Hospital, his fellowship training in Transfusion Medicine at the New York Blood Center and post-doctoral fellowship in tumor markers at the Veteran's Affairs Medical Center in NY. He maintains board certification in his disciplines. He currently serves as Chief Medical Officer for Consolidated Laboratory Management Systems, holds an appointment as Professor of Pathology at Wayne State University School of Medicine, Medical Director of Pathology Laboratories for Michigan Surgical Hospital and National Medical Director for Kids Kicking Cancer. He also serves as Associate Editor for Henry's Clinical Diagnosis and Management by Laboratory Methods, the premier textbook on Clinical Pathology and Laboratory Medicine, serves as Editor in Chief for four peer reviewed medical journals, and reviews for over a dozen other journals in various disciplines. He is a serial

entrepreneur in maturing novel biomarkers as well as devices and therapeutics (www.bluthbio.com), serves on numerous committees including the Michigan State Medical Society Committee on Health Care Quality, Efficiency and Economics, is considered an expert in his field, has authored over 250 publications, and is sought after for speaking engagements worldwide.

William R. Heineman

**Distinguished Research Professor, Department of Chemistry,
University of Cincinnati**

“Electrochemical Sensors for Biomedical and Environmental Applications”



William R. Heineman received a B.S. degree in Chemistry from Texas Tech University in 1964 and a Ph.D. in 1968 in Analytical Chemistry from the University of North Carolina at Chapel Hill. He was a Research Chemist at Hercules Research Center for two years before becoming a Postdoctoral Research Associate in 1970 at Case Western Reserve University and then at The Ohio State University in 1971. He joined the faculty at the University of Cincinnati in 1972 where he is now Distinguished Research Professor. Heineman's research interests include spectroelectrochemistry, chemical sensors and biosensors, electrochemical immunoassay, and bioresorbable medical implants. He has published over 500 research papers and patents and is coauthor of the laboratory manual *Chemical Experiments for Instrumental Methods*, the instrumental analysis textbook *Chemical Instrumentation: A*

Systematic Approach; and coeditor of the textbook *Laboratory Techniques in Electroanalytical Chemistry*. He has received numerous awards including Humboldt Preis from Germany, Charles N. Reilley Award in Electroanalytical Chemistry from the Society for Electroanalytical Chemistry, Chemical Sensors Award from the International Meeting on Chemical Sensors, Award for Excellence in Teaching from the Division of Analytical Chemistry of the ACS, Torbern Bergman Medal 1999 from the Analytical Section of the Swedish Chemical Society, EAS Award for Outstanding Achievement in the Fields of Analytical Chemistry from the Eastern Analytical Symposium, Outstanding Achievement in Sensors Award from the Electrochemical Society, Award for Distinguished Service in the Advancement of Analytical Chemistry from the Analytical Division of the ACS in 2015, and the ACS Award in Analytical Chemistry in 2016. He is a Fellow of the AAAS and the ACS. Heineman was a co-founder and the first President of the Society for Electroanalytical Chemistry and was a member of the Board of Directors. He has been active in the ACS where he served as Treasurer, Chair, and Councilor for the Division of Analytical Chemistry and in the Cincinnati Section where he served as Secretary, Chair, Trustee, and Councilor.

Biography

Electrochemical sensors such as the pH electrode, the glucose biosensor and the Clark oxygen electrode are widely used in biomedical, industrial, and environmental areas. Although these and many other sensors are commercially available, new sensors are needed to address existing needs for detecting and monitoring chemicals and biological materials in other applications. However, developing new sensors with the selectivity required to measure a single analyte in complex, real world samples without interferences is difficult. This talk focuses on highly selective sensors that were used for three very different applications: hydrogen gas sensors for development and point-of-care patient monitoring of biodegradable metal implants used for repairing broken bones; spectroelectrochemical sensors that combine spectroscopy and electrochemistry to achieve the exceptional selectivity needed to monitor critical components in stored nuclear waste; and highly selective immunosensors for rapid detection of biological agents (toxins, viruses, spores, and bacteria) in drinking and recreational water.