



PENN-OHIO BORDER SECTION NEWSLETTER

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February Meeting

Friday, February 27, 2015
Youngstown State University
Ward Beecher Hall Room 3022 at 7 pm

Speaker:

Dr. Bill Simonsick
Senior Research Chemist
Lubrizol Advanced Materials

“Gel Permeation Chromatography Coupled to Mass Spectrometry for Polymer Characterization”

Mass spectrometry (MS) plays an important role in the characterization of polymeric materials because of its sensitivity, specificity, and rapid analysis times. Furthermore, MS has gained prominence in the area of macromolecular characterization due to soft ionization methods in which molecular weight data are preserved. For polymers with molecular weights under 10K daltons the elucidation of the chain composition and distribution are possible and routinely accomplished. These oligomeric materials are used as precursors to complex polymeric architectures such as block, graft or comb copolymers. Soft ionization methods, CO₂ laser desorption or electrospray ionization, afford both the chain length distribution, and with high resolution, the chemical composition at every chain length including end groups. Gel permeation chromatography can be coupled to MS through an electrospray ionization interface to size separate, and simplify the compounds entering the mass spectrometer. This hyphenated approach yields accurate molecular weight information for different polymer architectures. Tandem MS studies performed on polymer molecular ions provide information about the specific sequence and functionality location. Applications of hyphenated MS techniques to polyesters, acrylics and polyethers will be presented.

*Free parking is available in the M1 lot off of Wick Avenue by telling the attendant that you are attending the POBS talk.

Biography:

Dr. William J. Simonsick, Jr. is a senior research chemist with Lubrizol Advanced Materials located in Brecksville, Ohio. Prior to joining Lubrizol Bill worked in R&D at DuPont for over twenty-eight years in automotive coatings, next generation fluorochemicals and crop protection. Bill received his Ph.D. in analytical/environmental chemistry in 1985 from Indiana University, Bloomington, Indiana, and his B.S. from Seton Hall University, South Orange, New Jersey in 1981. His current research interests include polymer characterization using soft ionization techniques in mass spectrometry and pyrolysis methods. Bill has also coupled powerful separation techniques (supercritical fluid extraction/chromatography, gel permeation chromatography) with mass spectrometry for polymer characterization. Bill holds two patents and has over one hundred and thirty refereed publications in these areas.

POBS Tentative Schedule for 2015

March 28	Lake to River Science Fair at YSU
April 17	Annual Awards Banquet at Westminster
April 22	Celebrate Earth Day "Climate Science – It's More than a Weather Report"
May 27-30	Joint Meeting Great Lakes/Central Regions at Grand Rapids, MI.
September 17 or 18	65th Anniversary of POBS at Thiel College, Dr. William Carroll, speaker.
November	POBS Meeting - TBA

POBS Officers for 2015 are:

Chair: Doris Zimmerman
Chair-Elect: Sarah Kennedy
Secretary: Clovis Linkous
Treasurer: Michael Serra

Members - at - Large:
Sherri Lovelace Cameron
Anna Reinsel
Susan Cramer

CERM 2014

October 29 – November 1, 2014

The Pittsburgh Section of the American Chemical Society hosted the 2014 Central Regional Meeting with the theme: *“Bridging Chemistry and Innovation”* at the Doubletree by Hilton Pittsburgh Greentree, Pittsburgh, Pennsylvania. Five hundred thirty papers were presented to over 850 attendees. The Plenary Lectures were “Smart Molecules for Imaging, Therapy, and Health” by Bradley D. Smith, University of Notre Dame; “Characterization and Nucleoprotein Complexes by Ion Mobility Mass Spectrometry” by Vicki H. Wysocki, The Ohio State University; and “From Synthesis to Materials Design: New Nanostructures and New Catalysts” by Sara E. Skrabalak, Indiana University – Bloomington. Patrick B. Smith was the winner of the American Chemical Society Central Region E. Ann Nalley Regional Award for Volunteer Service to the American Chemical Society; Erica Posthuma-Adams from University High School of Indiana in Carmel, Indiana, was the winner of the ACS Division of Chemical Education Central Region Award for Excellence in High School Teaching, and Amanda C. Bryant-Friedrich was the recipient of the Stanley C. Israel Regional Award for Advancing Diversity in the Chemical Sciences.

An all day Saturday Symposium consisting of three parts was in part sponsored by the Penn Ohio Border Section. The morning session featured presentations by Vernier, Erica Posthuma-Adams, Les McSparrin (one of our high school teacher awardees) and Laura Slocum, Elizabeth Dabrowski and Linda Ford, all past Regional Award winners for teaching. Lunch was served during a Project SEED Poster Session using funding obtained by the Pittsburgh Section from an Innovative Project Grant. The afternoon session consisted of more high school teaching award winners – Kathy Kitzmann, Judith Lachvayder and Bonnie Buddendeck. Both Ford and Kitzmann are Conant Award winners.

This CERM was held at a hotel, which made attendance expensive and in the fall rather than the usual spring date. Their attendance figures were one of the highest in the past ten years. There were tours of Pittsburgh and many social events planned. Friday was undergraduate day.

The schedule for upcoming regional meeting is as follows:

46 th CRM	2015	Joint with Great Lakes Western Michigan	Neal Fox nealfox@comcast.net Dr. Mark A. Thomson Dept. Physical Sci. Ferris State Univ. Big Rapids, MI 49307-2955 markthomson@ferris.edu 231-591-5895
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The above meeting will be held May 27-30, 2015, Grand Rapids, MI. The theme is “Chemistry: A Grand Enterprise”. Focus Areas are Food, Health & Environment.

47 th CRM	2016	CINCINNATI	
48 th CRM	2017	DETROIT	
49 th CRM	2018		
50 th CRM	2019	MIDLAND (100 th anniversary)	General Chair to be named

REPORTS:

Heather Juzwa is going to do the website for the Central Region.

Doris Zimmerman was elected Awards Chairman for a three year term.

Directions to YSU:

From the northwest (Cleveland, Toledo): Take Ohio Turnpike to Exit 218. Follow I-80 East to I-680, Youngstown. Take Exit 4A, Route 422 East and proceed to the Wick Avenue exit. Turn right onto Wick Avenue. To park in the deck (you must pay), make a left into the large parking deck after the first light on Wick. Street parking on Lincoln Avenue (make a right at the second light) is available after 5:30 PM.

From the north (Ashtabula): Take Route 11 South to I-80 West. Take Route 711 South (exits left). Exit at Gypsy Lane and make a left onto Gypsy. Cross Belmont Ave. (Rt. 193); at the fourth traffic light after Belmont, turn right onto Fifth Ave. Drive down Fifth until you get to Rt. 422 (look for the YSU stadium), then cross the overpass and turn left onto the Eastbound Service Road, staying on the service road as you pass the stadium. Cross the Elm Street intersection, then turn right onto Wick. To park in the deck (you must pay), make a left into the large parking deck after the first light on Wick. Street parking on Lincoln Avenue (make a right at the second light) is available after 5:30 PM.

From the east (western Pennsylvania): Take I-80 to Route 711 South (Exits left). Exit at Gypsy Lane and make a left onto Gypsy. Cross Belmont Ave. (Rt. 193); at the fourth traffic light after Belmont, turn right onto Fifth Ave. Drive down Fifth until you get to Rt. 422 (look for the YSU stadium), then cross the overpass and turn left onto the Eastbound Service Road, staying on the service road as you pass the stadium. Cross the Elm Street intersection, then turn right onto Wick. To park in the deck (you must pay), make a left into the large parking deck after the first light on Wick. Street parking on Lincoln Avenue (make a right at the second light) is available after 5:30 PM.

From the southeast (Pittsburgh): Take the PA Turnpike to Exit 234 (16A) on the Ohio Turnpike. From there, take I-680 approximately 10 miles to Exit 6 (Route 62 and Hubbard). Follow signs for YSU and take Route 422 West. Take the first Exit (Wick Avenue) and turn left on Wick. To park in the deck (you must pay), make a left into the large parking deck after the second light on Wick. Street parking on Lincoln Avenue (make a right at the second light) is available after 5:30 PM.

From the south: Take Ohio Route 11 North to I-680. From I-680, take Exit 4A, Route 422 East. Exit the freeway at Wick Avenue and turn right on Wick. To park in the deck (you must pay), make a left into the large parking deck after the third light on Wick. Street parking on Lincoln Avenue (make a right at the second light) is available after 5:30 PM.

From the west (Akron): Take I-71 or I-77 to I-76 East. Where I-80 and I-76 divide, follow I-80 until it intersects with I-680 to Youngstown. Follow I-680 to Exit 4A, Route 422 East. Exit the 422 freeway at Wick Avenue and turn right. To park in the deck (you must pay), make a left into the large parking deck after the first light on Wick. Street parking on Lincoln Avenue (make a right at the second light) is available after 5:30 PM.