

CINTACS



Newsletter of the Cincinnati Section of the American Chemical Society

March, 2015
Vol. 52 No. 6

Section Calendar

Upcoming Events

March 18	Chemist of the Year Miami U
Mar 22-26	Spring National ACS Meeting, Denver, CO
April 22	Teacher and Student Awards, Northern Kentucky University
May 15	Party Night, Great American Ballpark

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March Monthly Meeting

Wednesday, March 18, 2015

Miami University

Shriver Center, 701 E. Spring St., Oxford, Ohio

Honoring the 2015 Chemist of the Year

Stacey Lowery Bretz

Volwiler Distinguished Research Professor of Chemistry
Miami University

and

Honoring the 2015 Research Associate of the Year

Ms. Jennifer L. Roberts

National Institute for Occupational Safety and Health

Program:

6:00 – 7:00 PM	Registration & Reception Beer, wine & soft drinks
7:00 – 8:00 PM	Buffet Dinner Chicken, fish and vegetarian options
7:45 – 8:00 PM	Presentation of Awards to Prof. Lowery Bretz and Ms. Roberts
8:00 – 8:45 PM	Award Address by Dr. Stacey Lowery Bretz “Measuring Misconceptions: Student Understanding of Multiple Representations in Chemistry”

\$25.00 (\$15.00 students, emeritus, unemployed & new members)

Directions: From the Cincinnati area, drive north on US Hwy. 27 into Oxford; Highway 27 becomes Patterson Avenue in Oxford. Turn left (west) from Patterson Ave. onto Spring St. The Miami University Shriver Center is at the first left turn on the south side of Spring St., at the southwest corner of Patterson & Spring.

Miami University campus map:

<http://miamioh.edu/about-miami/visiting-miami/oxford-campus-map.html>

Register at <http://www.acscincinnati.org/meetings/>

THE CINTACS NEWSLETTER**Vol. 52, No. 6 March 2015**

Editor.....Adam Bange

CINTACS is published eight times a year (September through May) by the Cincinnati Section of the American Chemical Society. The submission deadline will be approximately March 25 for the April 2015 issue. Electronic submission is strongly preferred. All materials should be sent to:

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From the Chair

This month's section meeting will take place on Wednesday, March 18th at Miami University in Oxford. At this meeting we will recognize the 2015 Chemist of the Year and Research Associate of the Year: Stacey Lowery Bretz of Miami U and Jennifer Roberts of NIOSH, respectively. Please read the write-ups on the awardees in this issue of CINTACS. The section thanks Prof. Michael Crowder for helping to arrange this event at Miami U. Congratulations to Prof. Lowery Bretz and Ms. Roberts!

Last month's presentation on chemistry and nanomedicine by Prof. Daniel Feldheim of the University of Colorado at Boulder was absolutely outstanding. Dr. Feldheim discussed his laboratory's work on the use of nanostructures to facilitate drug delivery for treatment of chronic diseases. In addition to being a top-notch researcher, Dan is an accomplished public speaker, as was evidenced by his terrific, highly informative presentation. Thanks to everyone at Mount St. Joseph University who helped arrange this successful event!

The revised section bylaws have at last been approved by the ACS National office, in accordance with the version that was approved by the section in December 2014. Thanks once again to Bruce Ault, Beth Reno, Diana McGill and Dan McLoughlin for their tireless efforts in revising the bylaws. As a result of the new bylaws, the Cincinnati Section is now on a calendar year schedule rather than an academic one. Consequently the terms of elected officers will be adjusted from a service period of July à June to a January à December term, to commence in January 2016. I have agreed to stay on as chair through December of this year. Keith Walters has thankfully agreed to continue on as treasurer until December 2015 as well. (Here's hoping that the other section officers will also offer to stay at their posts until the end of the year.) Elections that would normally take place this spring will now occur in the fall. Members of the election nominating committee will be announced at the May event at Great American Ball Park.

I'd like to put in a final request for nominations for teacher awards, particularly emphasizing the need for nominations of primary and middle school teachers. We want to be able to recognize our best elementary and middle school science educators! The deadline for teacher award nominations is imminent: March 28th; send to Lynn Hogue at HogueLM@miamioh.edu. (See the announcements for these as well as other awards on the section's website at www.acscincinnati.org.)

Important: please note that the date of the April meeting at Northern Kentucky University has been moved back a week, from the 15th to the 22nd. Teacher and student awardees will be recognized at the April meeting. Also, members of the Society for Applied Spectroscopy (notably Gloria Story and the current SAS President, Diane Parry) are arranging a program in celebration of the U.N. International Year of Light. Put it on your calendar!

(Continued on page 3)

Dan McLoughlin is a leading organizer of the Central Regional Meeting to be hosted by our section in 2016. The conference will feature several special symposia, including topics such as pharmaceutical chemistry, the chemistry of beer, environmental chemistry, and a symposium to celebrate the career of the distinguished UC chemistry professor, William R. Heineman.

Speaking of Dr. Heineman ... I am delighted to inform the section membership that the Award for Distinguished Service in the Advancement of Analytical Chemistry has been accorded to Professor Heineman by the ACS Analytical Division.

We were recently saddened to learn of the passing of a long-time distinguished member and sponsor, Robert G. Laughlin. Dr. Laughlin was an internationally renowned expert in the chemistry of surfactants and phase chemistry. He leaves an amazingly impressive chemistry legacy. Dr. Laughlin's obituary is republished in this issue of CINTACS.

Our webmaster, Michele Mangels, who had a medical emergency over the holidays, is recovering quickly after her surgery. Please join me in wishing Michele a continued fast recovery; we hope to see her at the March meeting! I'd like to again thank Gloria Story for keeping us apprised of Michele's situation and progress.

As always, please consider submitting potential items of interest to Adam Bange and Michele Mangels for web posting, newsletter blurbs, publicity & etc.

Best wishes,

Kevin Ashley
Chair, ACS Cincinnati Section

Classroom Grant Opportunity for High School Chemistry Teachers

The American Chemical Society is currently seeking applications from teachers interested in enhancing their high school chemistry class with the ACS-Hach High School Chemistry Classroom Grant. The grants can be used to cover basic classroom or laboratory needs as well as support innovative ideas in chemistry education. Teachers can request up to \$1,500 to support ideas that improve student learning and achievement within the classroom. Grant writing assistance and application details are available at www.acs.org/hachgrants. Applications are due by **April 1, 2015**.



Stacey Lowery Bretz is the Volwiler Distinguished Research Professor of Chemistry at Miami University in Oxford, OH. She earned her B.A. in chemistry from Cornell University in 1989 and an M.S. in chemistry from Penn State in 1992. She earned her Ph.D. in chemistry education research (CER) at Cornell University in 1994 and completed a post-doc in CER in the Department of Chemistry at UC Berkeley. Dr. Bretz's research expertise includes the development of assessments to characterize chemistry misconceptions and learning in the chemistry laboratory. Of particular interest is method development with regard to the use of multiple representations (particulate, symbolic, and macroscopic) to generate cognitive dissonance,

including protocols for establishing the reliability and validity of these measures. She has published 68 papers, given 131 invited seminars, and been awarded external research funding in excess of \$4.5M. Dr. Bretz is both a Fellow of the American Association for the Advancement of Science and a Fellow of the American Chemical Society. She chaired the Gordon Research Conference on CER in 2005. She has served on the Board of Trustees for the American Chemical Society Examinations Institute since being appointed in 2002; she served as Chair of the Board from 2009-2014. She served on the National Academy of Science National Research Council Committee on Discipline-Based Education Research. Stacey Lowery Bretz was honored with both of Miami University's highest awards for teaching: the E. Phillips Knox Award for Undergraduate Teaching in 2009 and the Distinguished Teaching Award for Excellence in Graduate Instruction and Mentoring in 2013.

March 18, ACS Cincinnati Local Section Award Address

Measuring Misconceptions: Student Understanding of Multiple Representations in Chemistry

Learning chemistry requires students to not only interpret information encoded in symbolic and particulate representations, but also to connect multiple representations of one or more chemical phenomena. Failure to accurately interpret and connect such representations is one source of students' alternative conceptions. Our research group has designed a suite of measurement tools to advance our understanding of how students interpret representations for a variety of core concepts. Findings regarding alternative conceptions will be presented. Creating such measures has also presented multiple challenges with regard to establishing the reliability and validity (precision and accuracy) of the data. Emerging insights regarding the underlying assumptions and appropriateness of commonly used psychometrics will be discussed as well.

Jennifer L. Roberts
National Institute for Occupational Safety and Health



2015 Research Associate of the Year

Jennifer L. Roberts is a BS Chemistry graduate of Xavier University working as a chemist for the National Institute for Occupational Safety and Health (NIOSH) in the agency's Division of Applied Research and Technology (DART). Jennifer is a model research associate for our agency, fulfilling multiple roles. She is an analytical chemist who specializes in GC-MS analysis of organics in the air of workplaces captured on thermal desorption tubes for exposure assessment purposes.

In support of NIOSH research studies, Ms. Roberts analyzes field samples for volatile organic compound screening for critical health hazard assessment studies. These studies include exposure assessments at nano-material manufacturing sites, chemical processing plants, electronic manufacturing facilities, polyurethane foam application sites, and local hospitals. She also coordinated the work efforts of a summer students to review information on analytical reports supporting NIOSH researchers. As a result of these investigations, Jen has co-authored at least a half-dozen peer-reviewed research papers and has presented her work at national conferences on several occasions. Moreover, Ms. Roberts coordinated a research effort installing and troubleshooting new instrumental chemistry technology within CEMB. She conducted maintenance of laboratory instruments and equipment changing gas cylinders, filling hydrogen generators, arranging for preventative maintenance visits and repair, and organizing calibrations for lab accreditation. Also, Jen has helped develop a new Laboratory Information Management System (LIMS) for NIOSH.

Through Jennifer's hard work, dedication, organizational skills, and amiable nature, she has made significant contributions to NIOSH's research mission to prevent illnesses from occupational exposures.

Nominations Open for Science Teacher of the Year Awards

Think of a teacher that changed your life. Maybe it was a science teacher that opened your eyes to the wonders of the world around you and the joy of discovering how things worked; a teacher who encouraged your curiosity and motivated you to learn more. Here is an opportunity to reward teachers for all they do. Each year the Cincinnati Section gives awards for outstanding science teaching in three categories: elementary science, middle school science, and high school chemistry.

Nominating an outstanding teacher is simple. All that is required is a nominating letter, a second letter of support, and a cv. Easy! All materials should be sent via email to Lynn Hogue (HogueLM@miamioh.edu). Deadline for submitting is March 28, 2015.

Everyone knows there is a need for more scientists and a better informed public. Excellent teachers are a way of achieving both goals. Take a moment and think of a great teacher you would like to see recognized for all that they do for students and science and get the nominating process going.



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The Bioscience Event for Innovators and Intellectual Property Professionals

The Horseshoe Casino --- April 21, 2015

CincyBio is proud to welcome speakers this year from Eli Lilly & Co, Procter & Gamble, Finnegan, CincyTech, Cincinnati Children's Hospital Medical Center, Mintz Levin, and others.

CincyBio's speakers will cover such topics as *Withstanding Scrutiny During Biotech IPR and PGR, Natural Products Strategies for an Uncertain Future, International Strategies in Light of US Eligibility, and Protecting the IP of Future Biotech Innovation.*

CincyBio is geared towards not only attorneys, but also the innovators, entrepreneurs, and businesses that work tirelessly to bring their ideas and inventions to life.

<http://cincyip.org/cincybio-2015/>

 A photograph of a female scientist with red hair in a ponytail, wearing safety goggles and a white lab coat. She is focused on adjusting a piece of laboratory glassware, specifically a round-bottom flask containing a blue liquid, which is part of a larger apparatus. The background is a bright, clean laboratory setting.

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