



ISOTOPICS

The Cleveland Section of the American Chemical Society

Volume 90 Issue 1

January 2014

On Deck:

February 19, 2014

Cosponsored with Iota Sigma Pi

Speaker: TBD

Title: TBD

Crop Restaurant

January Meeting Notice

Wednesday, January 15, 2014

Past-Chairs Night

Sterle's Country House Restaurant, Cleveland

| | |
|---------|-----------------------------|
| 4:30 pm | Executive Committee Meeting |
| 5:30 pm | Social/Networking |
| 6:00 pm | Dinner |
| 7:00 pm | Presentation |

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The National Historic Chemical Landmarks Program of the ACS

Alan Rocke, Henry Eldridge Bourne Professor of History and Distinguished University Professor, Case Western Reserve University

Since 1993, 72 National Historic Chemical Landmark designations have been conferred by the ACS; 68 are in the United States, and four of them are in Europe. In addition to a plaque which is displayed on the historic site, each of these designations comes with extensive online historical and educational materials. The speaker will discuss this highly successful program, with particular attention to the eight landmarks which have been designated in the Cleveland area between 1995 and 2012.

DINNER RESERVATIONS REQUIRED:

Please RSVP by Sunday, January 12 via email to eigensolutions@gmail.com. An email acknowledgement including dinner menu and a phone number for additional questions will be sent at that time. Checks made out to "Cleveland ACS" are greatly appreciated; cash otherwise. \$20 for members and guests, \$10 for retirees or unemployed, \$5 for students. Dinner will include salad, Weinerschnitzel, Chicken Paprikash, sausage, steamed vegetable, and dessert. Cash bar.

Cleveland Section Web Site:

http://www.csuohio.edu/sciences/dept/cleveland_acs/

Directions to Sterle's Country House Restaurant

1401 East 55th St.
Cleveland, OH 44103

Take I-90 and exit at E. 55th Street. Proceed south on E. 55th St. Sterle's will be on the left, about 2 blocks south of St. Clair Ave.

Speaker Bio

Alan Rocke is Henry Eldridge Bourne Professor of History and Distinguished University Professor at Case Western Reserve University. Before he became a historian of science, his first training was in chemistry, and he has published widely on the development of the science in 19th-century Europe. Last year he was elected a Fellow of the ACS.

From the Past-Chair's Desk

By Don Jaworske

As I move into the office of Past-Chair, I thank all those in the Cleveland Section who have made 2013 a wonderful year. The Cleveland Section of the ACS had numerous meetings, including Past-Chair's Night in January, a joint meeting with Iota Sigma Pi in February, our annual Meeting-in-Miniature in March, the Cleveland Section's Education Awards night in April, and a joint meeting with the Society of Applied Spectroscopy featuring the presentation of our local section's Morley Award in May. The Morley lecture entitled "A Tale of Two Drug Candidates" was presented by Morley Award recipient, Peter Wipf, from the University of Pittsburgh. Our meetings also included a joint meeting with the Akron Section in September, an evening of beer tasting and judging in October, and a discussion of Innovations in Teaching General Chemistry in November. Our annual Meeting-in-Miniature included 60 graduate and undergraduate student presentations during five parallel sessions followed by a plenary lecture entitled "Wind Energy, It's Challenges and Opportunities," and an awards banquet where four undergraduate and four graduate student awards were presented. The

annual Education Awards Night celebrated the winners of National Chemistry Week contests and the Northeast Ohio Science and Engineering Fair. Additional activities and events included a sponsorship at the Cleveland Technical Societies Council banquet, administering the local Chemistry Olympiad exam, our National Chemistry Week Committee presenting 26 library presentations to over 600 young children throughout the Cleveland area, and new in 2013, a National Chemistry Week presentation to over 180 people at the Great Lakes Science Center. Betty Dabrowski was selected to receive the ACS Division of Chemical Education Central Region Award for Excellence in High School Teaching and represented the Cleveland Section at the Central Region Meeting in May. Michael Kenney is now at the helm of the Section and I look forward to a Past-Chairmanship in 2014.

And looking forward to 2014, the election results are in and it is my pleasure to announce the winners of our latest election:

Chair Elect – Theresa Nawalaniec
Secretary – Anna Cronin
Councilor - Dwight Chasar
Alt Councilor – Mekki Bayachou
Trustee - Don Jaworske
Director - Mark Waner

Call for Nominations: Irene C. Heller Award

Presented to an Outstanding High School Chemistry Teacher by the Cleveland Section of the American Chemical Society

The Cleveland Section of the American Chemical Society annually sponsors an award to recognize an outstanding high school chemistry teacher in the Cleveland Section. The award consists of an honorarium of \$1,000 and a framed certificate. The award is named for Irene Heller of North Olmsted High School in recognition of her contributions as an outstanding high school chemistry teacher and her service to the Cleveland Section. Nominations for the award should be presented to Jeff Mathys 11535 Cherokee Street,

Brecksville Ohio 44141 by close of business Friday, March 7, 2014. The nominations should consist of information on the candidate's education, professional experience and activities, awards and honors, offices held and specifics on significant contributions. The letter of nomination should highlight these significant contributions. Seconding letters are suggested. A detailed curriculum vita of the candidate may also be included. Nominations should be sponsored by at least one member of the Cleveland Section. If you do not know a local section ACS member willing to serve as Champion for your candidate, contact Jeff Mathys and he will provide one for you. The Cleveland Section is geographically confined to the counties of Cuyahoga, Geauga, Lorain, Medina, Huron, and Erie. Electronic nominations using Word or PDF Files mailed to jamathys.family@gmail.com will be greatly appreciated. Jeff Mathys may be contacted at 440-812-9666 during business hours for assistance with submissions.

The award will be presented at the April, 2014 meeting of the Cleveland Section.

MIM Call for Abstracts

By Lisa Ponton

This year's Meeting-in-Miniature of the Cleveland Section will be held Wed. March 12 at Baldwin Wallace University, with talks beginning at 3pm.

A highlight of the MIM is the 10-15 minute talks across all areas of chemistry. Again this year there will be cash awards given for the best undergraduate and graduate student talks. Although awards are given to encourage participation by students, we welcome talks by all practicing chemists at the MIM.

Please limit the abstract to 250 words and include names and affiliations of all authors with the presenting author's name underlined. Abstracts should be submitted, as Word or RTF files, to Dr. Lisa Ponton (lponton@bw.edu), by Monday, March 3. Please send abstracts with a subject line

of "MIM-undergrad", "MIM-grad" or "MIM-regular" to insure that they are tracked properly.

Selected from ACS Discoveries!

Toward lowering titanium's cost and environmental footprint for lightweight products

A novel method for extracting titanium, a metal highly valued for its light weight, high strength, corrosion resistance and biocompatibility, could lower its cost and make it more widely accessible, for example, for producing lighter car parts to improve fuel efficiency. The method, which significantly reduces the energy required to separate it from its tightly bound companion, oxygen, appears in the *Journal of the American Chemical Society*.

Zhigang Zak Fang and colleagues note that while titanium is the fourth most common metal in the Earth's crust, the high-energy, high-cost method used to extract it prevents its use in broader applications. The metal's light weight, strength, stability and corrosion resistance earned it valued roles on the Mars Odyssey mission, in wedding rings and in deep-sea submersibles. Titanium also could be used to significantly lighten and strengthen commercial products and materials. But currently, titanium is too expensive for widespread use. The most common technique, called the Kroll process, used to extract the metal from titanium oxide was invented in the 1930s and has undergone slight improvements. But by and large, the method, which requires temperatures over 1,800 degrees Fahrenheit, keeps prices for the metal high. Fang's team decided to try out a new approach to make titanium more accessible.

The scientists discovered that they could eliminate the energy-intensive steps of the Kroll process. In the lab, they successfully tested a new series of reactions for isolating titanium that halves the temperature requirements of the conventional method and consumes 60 percent less energy.

The authors acknowledge funding from the U.S. Department of Energy.

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Isotopics is looking to highlight local chemistry professionals, companies, teachers, research groups, students, events, and more. If you have an idea for an *Isotopics* article, please contact the editor. *Isotopics* is also looking for local members to join our staff. Time commitments for staff members are minimal (a few hours a year!) and your contributions will be invaluable to our local section. If you are interested in joining *Isotopics*, please contact the editor.