



Vol. 82 (6) September 2006

# ISOTOPICS

The Cleveland Section of the American Chemical Society

## On Deck:

Wednesday, October 18

Joint with SAS

Chris Jenson

Fiberstars

Fiberoptics

Noveon

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## Cleveland Section Web Site:

[http://www.csuohio.edu/cleveland\\_acs/](http://www.csuohio.edu/cleveland_acs/)

## September Meeting Notice

### 50 Year Member Night

Wednesday, September 20, 2006

Ohio Aerospace Institute

|         |                             |
|---------|-----------------------------|
| 4:30 pm | Executive Committee Meeting |
| 5:30 pm | Social Hour                 |
| 6:30 pm | Dinner                      |
| 7:30 pm | After Dinner Talk           |
| 8:30 pm | Informal Discussion         |

## Spicing up the Research: Capsaicinoids in Chili Peppers

Robert Q. Thompson, Oberlin College

Capsaicinoids, N-vanillyl acyl amides, are the “hot” components of chili peppers (genus *Capsicum*), many spicy foods, some topical pain-relief creams, and most defense sprays. The action and potency of these compounds will be reviewed. More than twenty naturally-occurring capsaicinoids are known with small, but significant differences in structure. Nearly all of the analytical studies of chili peppers, most involving liquid chromatography, are limited to three capsaicinoids for which there exist commercial standards. The author will describe work in his laboratory toward the accurate identification of the minor (low abundance) capsaicinoids and the isolation of milligram quantities of these rare compounds from chili peppers.

**DINNER RESERVATIONS REQUIRED:** Please RSVP by contacting Zedeara Diaz, by phone at 216-368-3621 or by e-mail at [zcd@case.edu](mailto:zcd@case.edu) by **Noon on Friday, September 15**. (For phone reservations, please clearly spell your last name and leave a return phone number.) Cost of the dinner is \$20 for members & guests and \$10 for students. Checks made out to “Cleveland ACS” are greatly appreciated. Menu includes: Chicken Marsala, Baby Redskin Potatoes with Chive butter, Vegetable Medley, Garden Salad with Dressings, Rolls and Butter, Assorted Miniature Pastries and Assorted Cookies, Coffee and Soft Drinks.

### Directions to OAI

OAI's main offices and facilities are located at 22800 Cedar Point Road, Brookpark, Ohio 44142. **From I-480.** Take OH-252/Great Northern Blvd exit and turn south (turn right if traveling from the west and turn left if traveling from the east) onto Great Northern Blvd (0.3 mi). Turn left onto Butternut Ridge Rd. (0.1 mi). Turn left onto Columbia Rd. (0.2 mi). Turn right onto Cedar Point Rd. (1.2 mi). OAI will be on the left. **From I-90.** Take Columbia Rd/OH-252 exit and turn south (turn right if traveling from the west and turn left if traveling from the east) onto Columbia Rd. (4.6 mi). Turn left onto Cedar Point Rd. (1.2 mi). OAI will be on the left.

## Speaker Biography

Rob Thompson earned a B.S. in chemistry from the College of Wooster and the Ph.D. in analytical chemistry from Michigan State University under the direction of Stanley R. Crouch. In 1982 he took a position as faculty member at Oberlin College, where he remains today. He teaches forensic science, general chemistry, analytical chemistry, and a course on chemical information. Rob was Secretary of the ACS Division of Analytical Chemistry from 1996-1999. Rob has taken research leaves at the University of Tennessee, the University of Cincinnati, the Federal Bureau of Investigation (Research Laboratory and Training Center), and the National Institute of Standards and Technology (Chemical Sciences Technology Laboratory), where he first learned about pepper sprays and his interest in capsaicinoids was launched.

## Evening Classes at Cleveland State

The Chemistry Department at Cleveland State University is offering a variety of chemistry courses after 4 p.m., perfect for the full-time or part-time working student. General, organic, physical, analytical and environmental chemistry undergraduate courses are available, as well as several specialty graduate courses. Go to [www.csuohio.edu](http://www.csuohio.edu) and click on the "Class Schedule" link, or call Dr. David W. Ball at 216-687-2456 for more information

## Volunteer for NCW

NCW is Oct 22-28: "Your Home - It's All Built on Chemistry." Whether you want to be in the forefront by helping put on a chemistry/science demonstration in a library for children aged 7-10 or be more in the background helping to assemble demonstration kits, your commitment is important. You don't even need to know kids science to participate, just a desire to share our fun! If you are interested in volunteering, email Kat at [katkat@neo.rr.com](mailto:katkat@neo.rr.com) or call 330-819-0518. Backup emails for the traveling Kat are [ch\\_kuhns@hotmail.com](mailto:ch_kuhns@hotmail.com) and [MarSchiele@aol.com](mailto:MarSchiele@aol.com).

## Call for Nominations: Morley Medal

The Cleveland Section annually sponsors a regional award, which consists of the Morley Medal and an honorarium of \$2,000. The purpose of the award is to recognize significant contributions to chemistry through achievements in research, teaching, engineering, research administration and public service, outstanding service to humanity, or to industrial progress. The geographical area of eligibility includes those parts of the United States and Canada within about 250 miles of Cleveland. For more information about the award and nomination process, please see the Cleveland Section's web pages at [http://www.csuohio.edu/cleveland\\_acs](http://www.csuohio.edu/cleveland_acs).

## Call to Vote

It is important for the members of any organization to take an active part in the governance of that organization. The governing body is to represent the membership (your) interests, which includes the representation to the national organization and the presentation of local programs. Local programs do not just include monthly meetings! Our programs include a large suite of awards to students and teachers, an extensive national chemistry week program and a large number of other fine activities. The easiest way for you to take an active part in your section is to vote for the officers that represent your interests. Please vote in the upcoming election of officers by October 6, 2006. If you have not received your ballot by this time, or received an incomplete ballot, please contact our secretary at the address provided on the front page of Isotopics. Candidates include:

**Chair Elect:** Rachael Barbour

**Secretary:** David Miller and John Pendery

**Treasurer:** Joseph Gorse and Don Jaworske

**Trustee:** Steve Felch and Betty Dabrowski

**Councilor:** David Ball

**Alt Councilor:** Mary Zeller and Mark Waner

**Director:** Ken Street and Art Varne

**Fall 2006 Chemistry Colloquia & Frontiers Lectures**  
**CWRU Department of Chemistry**

4:30 p.m. Goodyear Lecture Hall, Room 108

Visitors are welcome for coffee and cookies at 4:15 p.m. - Clapp Hall, Second Floor Balcony

| <b>Date</b>                   | <b>Title</b>   | <b>Speaker</b><br><i>Institutional Affiliation</i> |
|-------------------------------|--|--|
| <b>August 31</b>              | The Role of Oxidized Phospholipids in Inflammation and Immune Response   | Norbert Leitinger<br><i>University of Virginia</i> |
| <b>September 7</b>            | Asymmetric Catalysis in Complex Molecule Synthesis   | Scott Nelson<br><i>U. of Pittsburgh</i>            |
| <b>September 14</b>           | Plasmonic Nanoparticles: Molecular Orbitals Writ Large   | Naomi Halas<br><i>Rice</i>                         |
| <b>September 21</b>           | Powering the Planet: The Challenge for Science in the 21 <sup>st</sup> Century (Frontiers in Chemistry Lecture)                            | Daniel Nocera<br><i>MIT</i>                        |
| <b>September 28</b>           | A New Role for S-Adenosylmethionine: The Functionalization of Unactivated Alkanes Catalyzed by the Radical SAM Enzyme lipoic acid synthase | Squire J. Booker<br><i>Penn State</i>              |
| <b>October 5</b>              | The Triple Bond as Two Functional Groups in One Package: New Reactions and Concepts in Alkyne Chemistry and Photochemistry                 | Igor Alabugin<br><i>Florida State University</i>   |
| <b>October 12</b>             | Directing Transport and Placement of Functional Nanoparticles: From Motor Proteins to Refrigerator Magnets                                 | Mary Beth Williams<br><i>Penn State</i>            |
| <b>October 13</b><br>(Friday) | DNA Charge Transport Chemistry and Biology (Frontiers in Chemistry Lecture)  | Jacqueline Barton<br><i>Cal Tech</i>               |
| <b>October 19</b>             | The Dynamics of Electrons at Interfaces on the Femtosecond Timescale (Frontiers in Chemistry Lecture)                                      | Charles B. Harris<br><i>U.C. Berkeley</i>          |
| <b>October 26</b>             | The Use of Bioinspired Approaches in the Development of Molecule-based Materials   | Claudio Verani<br><i>Wayne State</i>               |
| <b>November 2</b>             | Catalysis to Polymers and New Materials  | Douglas W. Stephan<br><i>U. of Windsor</i>         |
| <b>November 9</b>             | Single Molecule Spectroelectrochemistry (SMS-EC) (Frontiers in Chemistry Lecture)  | Paul Barbara<br><i>U. of Texas, Austin</i>         |
| <b>November 16</b>            | Molecular Electronics: Driving Electrons Through Molecules (Frontiers in Chemistry Lecture)  | Mark Ratner<br><i>Northwestern</i>                 |
| <b>November 30</b>            | Mechanistic Insights into Proofreading Steps That Help to Ensure Accuracy in Protein Synthesis   | Karin Musier-Forsyth<br><i>U. of Minnesota</i>     |
| <b>December 7</b>             | The Chemistry of Inflammation and Oxidation: From Test Tube to Bed Side  | Stanley L. Hazen<br><i>Cleveland Clinic</i>        |

**ACS Cleveland Section**  
2006-2007 Tentative Meeting Schedule

**September 20, 2006**

Honoring 50 years members  
*Ohio Aerospace Institute*  
Robert Thompson: Chemistry of  
Capsaicinoids

Contacts:

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kenneth.w.street@nasa.gov

**October 18, 2006**

Joint meeting with Akron/SAS  
*Noveon*

Chris Jensen: Fiberoptics

Contacts:

Valerie Woodward  
Daryl Stein,  
dstein1@neo.rr.com

**November 15, 2006**

*Baldwin Wallace College*  
William Greensburg: Stained  
Glass

Contacts:

Joe Gorse, jgorse@bw.edu  
Jerry Reed-Mundell

**January 17, 2007**

YCC joint sponsor/Past Chairs  
Night

*Tin Fu Restaurant and Club*

Jan Cobett: Chemistry of Wine

Contacts:

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Daniel.S.Tyson@grc.nasa.gov  
Lily Ng, l.ng@csuohio.edu

**February 21, 2007**

History Night Joint with  
NEO/SAS

*Sterle's Slovenian Country Club*

Norman Craig: History of  
Vibrational Spectroscopy

Contacts:

Lily Ng, l.ng@csuohio.edu  
Matt Gieselman  
David Aaserud,  
djaa@lubrizol.com

**March 7, 2007**

MiM: (speaker: joint with IΣII  
and CSU Chemistry Department)  
*Notre Dame College*

Marion Thurnauer: ACS Gavin-  
Olin Medal Winner

Contacts:

Steve Felch, sfelch@ndc.edu  
Lily Ng, l.ng@csuohio.edu  
Shermila Singham,  
sbsingham@sherwin.com

**April 18, 2007**

Education/Award night

*Cleveland Skating Club*

Ken Street: Spectroscopy Show

Contacts:

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Lily Ng, l.ng@csuohio.edu

**May 07, 2007**

Morley Award

*John Carroll University*

Morley Award Winner

Contacts:

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