ISOTOPICS

The Cleveland Section of the American Chemical Society

Volume 84 Issue 5 May 2008

On Deck:

September Meeting
Date TBD

Dr. Sunniva Collins
Swagelok, Inc.

Venue: John Carroll Univ.

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May Meeting Notice

2008 Morley Award
Wednesday, May 21, 2008
Case Western Reserve University

5:00 pm	Morley Lecture (Clapp Hall 201)
6:00 pm	Social Hour (Lobby in Tomlinson Hall)
7:00 pm	Dinner (Lobby in Tomlinson Hall)
7:45 pm	Concluding Remarks (Tomlinson Hall)

Probing Hydrogen Bonds and Halogen Bonds with NMR One- and Two-Bond Spin-Spin Coupling Constants

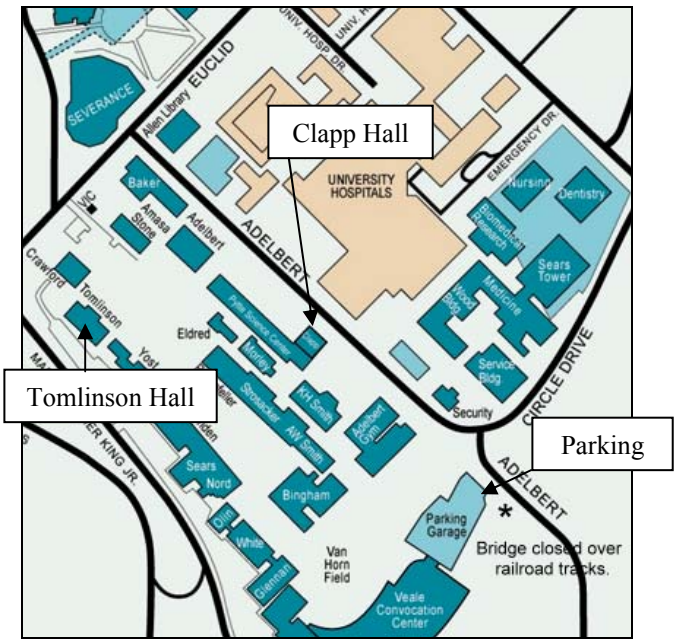
Dr. Janet E. Del Bene, Youngstown State University

Experimental and theoretical investigations of spin-spin coupling constants across hydrogen bonds are new and exciting areas of research which have developed within the last decade. Computed coupling constants $^{1}J(X\text{-}H)$, $^{1h}J(H\text{-}N)$, and $^{2h}J(X\text{-}N)$ across $N\text{-}H^{+}\ldots N$ and F-H...N hydrogen bonds will be compared with experimental data, and will be used to extract structural information about hydrogen-bonded complexes, characterize hydrogen bond type, and monitor the proton-transfer coordinate. Comparisons will be made with corresponding coupling constants $^{1}J(Cl\text{-}F)$, $^{1ha}J(Cl\text{-}N)$, and $^{2ha}J(F\text{-}N)$ for a set of complexes stabilized by F-Cl...N halogen bonds.

PLEASE NOTE EARLY RSVP DATE

DINNER RESERVATIONS REQUIRED: Please RSVP by contacting Rachael Barbour, by phone at 216-839-7238 or by e-mail at rachael.barbour@basf.com by **noon** on **Wednesday, May 14** (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. Dinner will include Chicken Piccata with Lemon Caper Sauce, Penne Pasta with Sun Dried Tomatoes, Caesar Salad, Green Beans, Assorted Rolls, Pastries and Beverage.

Directions to Case Western Reserve



From the East or West via Interstate 90: Exit at Martin Luther King Jr. Boulevard. Proceed south for about a mile to the East 105th traffic light; cross East 105th and bear right through the traffic circle, continuing along MLK Blvd. to Euclid Avenue. Turn left onto Euclid and right onto Adelbert Road.

From the East via I-271 North: Exit at Cedar Road. Follow Cedar westbound toward Cleveland. Where Cedar starts down a steep hill, look for a sign identifying CWRU on your right, at the corner of Murray Hill Road (mid way down the hill, but before you pass under Rapid/train tracks). Turn right at the light at Murray Hill Rd. Continue through the next light where Murray Hill and Adelbert road split. Veer left and go over bridge to the stop sign. Turn left and the very next left will be the entrance for the Veale parking garage (Do not try to enter the garage at the entrance on the bridge; this is for CWRU staff only).

From the South via I-71 or I-77: Proceed north until I-71 (or I-77) merges with Interstate 90. Take I-90 East then follow directions above.

Park in the Veale Parking Garage on Adelbert. To avoid the $8 parking fee, attendees should bring their parking ticket with them to the symposium for validation. If the Veale Parking Garage is full, one can park at the Rainbow Hospital Parking Garage on Adelbert Road as well.

Speaker Bio

The 2008 Morley Medal presented by the Cleveland Section of the American Chemical Society has been awarded to Dr. Janet E. Del Bene, Professor Emeritus of Chemistry, Youngstown State University. Dr. Del Bene will be honored with the medal, a monetary prize, and a special lectureship, the Edward W. Morley Lecture, on May 21, 2008 in Cleveland, OH. This annual award was established in 1966, and its list

May Historical Events in Chemistry

By Leopold May
The Catholic University of America, Washington, DC

May 6, 1871	F. Victor Grignard developed magnesium reagent used in organic chemistry; Nobel Prize (1912) for the discovery of the so-called Grignard reagent, which in recent years has greatly advanced the progress of organic chemistry; shared the prize with Paul Sabatier who received it because for his method of hydrogenating.
May 14, 1878	The name “vaseline” for petroleum jelly was given a trademark on this date.
May 19, 1916	Ralph Landau cofounded Scientific Design in 1946 and led in the development of terephthalic acid process in polyester manufacture and the propylene oxide process. This is his birthday.
May 29, 1970	General Electric Corp. announced synthesis of gem grade diamonds.

of recipients includes two Nobel Laureates. The Morley Medal is given annually to a chemist for outstanding contributions to chemistry made while residing in an area within a 250-mile radius of Cleveland.

Dr. Del Bene is a theoretical chemist who is internationally recognized as an expert in the field of hydrogen bonding. Her research has addressed questions concerning the structures and stabilities of hydrogen-bonded complexes, the methodological dependence of their computed properties, and their infrared vibrational spectra with emphasis on the anharmonicity of the proton-stretching vibration particularly in complexes with proton-shared hydrogen bonds. Most recently, her work has focused on the signs and magnitudes of NMR one- and two-bond spin-spin coupling constants across hydrogen bonds, and how these may be used to extract structural information and determine the type of hydrogen bond present. Dr. Del Bene is the author or co-author of more than 200 scientific papers and chapters in books, and has been an invited speaker at national and international meetings. She has been a Visiting Professor at the University of Sydney, Australia, the University of Madrid, and the University of Florida. Dr. Del Bene is a fellow of the American Association for the Advancement of Science. In 2002, she received the triennial Iota Sigma Pi Honorary Lifetime Member award in recognition of her accomplishments in research.

ACS and Government Affairs

By David W. Ball, Chair-Elect, Cleveland ACS

In ACS lingo, "GAC" stands for "Government Affairs Committee". Over 70 of the 189 ACS local sections have a government affairs committee. Cleveland ACS has a GAC composed of one person (me), but anyone who is willing to participate will be welcomed.

The local section GAC interacts with public officials at the local, state, and federal level. In 1998, Ohio was the site of the first State Capital Day, when members from many of Ohio's local sections converged on the State House in Columbus to talk to legislators and their aides about issues important to the membership - mostly support for science, engineering, technology, and education. As part of my duties as a member of the ACS Committee on Chemistry and Public Affairs, I have been going to Washington DC annually to visit legislative office on Capital Hill to talk with House and Senate members (a few times) and their aides (mostly) about support for science and technology.

What can you do? If you're interested in government affairs (and we all should be, at least to some extent!), the easiest thing you can do is contact your local, state, or federal legislator about issues that are important to you. After all, they are supposed to represent YOUR interests; therefore, they need to know what your interests are! Email is one of the easiest ways to contact your legislator. Email addresses are easily available through www.house.gov or www.senate.gov. Another way you can help is to join the ACS Legislative Action Network (LAN). About 6 - 8 times a year, ACS sends out an email urging members to write their Congressman, Senator, or members of the Executive Branch and support a timely issue that is important for chemistry and science. The LAN works through the website act4chemistry.org, which is where you can go to register for the LAN and begin making a difference.

Remember, only by speaking up will your voice be heard! Take a part in the democratic process and participate in your local section GAC!

52nd Annual SAS/ACS/AVS May Conference
Thursday, May 15th at John Carroll University

Co-sponsored by the Cleveland Sections of Society for Applied Spectroscopy, American Chemical Society: Analytical Topics Group, and American Vacuum Society

Free conference registration & lunch for all students
Panel Discussion on Careers in Science
Cash Awards to Best Student Papers

- Return to the Moon - A Dusty Place, **Ken Street**, *Nasa-Glenn*
- Materials in Sports, **Gary Michal**, Case Western Reserve University
- Automated Natural Product Extract Screening Using 1H NMR, **Kim Colson**, *Bruker-Biospin*
- Gas Chromatographic Solutions for Biodiesel Characterization, **Terry Jeffers**, *ThermoFisher*
- MALDI-TOF of Polymers and Additives, **Ron Snelling**, *Shimadzu*
- How to get the most from your ICP-OES System, **Doug Sears**, *ThermoFisher*
- Application of Conductive Organic Polymers-Attempt to Heal CdS/CdTe Solar Cells, **Misle Tessema**, *UToledo*
- Optimization of Cleaning Procedures for Trace Residue in Multi-use cGMP Manufacturing Equipment Using UV-Vis Spectroscopy, **Nicholas Janofsky**, *Ricerca Biosciences, Inc*.
- Nonlinear Optical Spectroscopy to Study Confined Liquids, *UAkron*
- Photoelectrical Properties of Nanostructured PbSe Thin Films, **Yixin Zhao**, *Case Western Reserve University*
- State of the Art ICP-MS Technology, **Doug Sears**, *ThermoFisher*
- Synthesis of Materials in the AA'W3O12 Family using a Non-Hydrolytic Sol-Gel Process, **Tamam Baiz**, *UToledo*
- HPLC Method Development and Impurity Isolation and Identification for a Commercial Drug Product, **Jason Blanchard**, *Ricerca Biosciences, Inc.*
- Highly Efficient Caged Drug Delivery with Gold Nanoparticle Vetors for Photodynamic Therapy, **Yu Cheng**, *Case Western Reserve University*
- **Yeager Award**
- **Acknowledgement of the John Bell Award winners at the dinner banquet**

Please contact Brian Perry (brian_perry@lord.com) if you are interested in presenting a paper. Please contact Sara Freeman (freeman@ferro.com, 216-750-6655) if you interested in attending the May Conference.

ECS Yeager Symposium - May 8

By Mekki Bayachou

The Cleveland Section of the Electrochemical Society (ECS) in co-sponsorship with the Yeager Center of Electrochemical Sciences (YCES) is hosting its 2008 Spring Symposium in honor of Prof. Uziel Landau, this year's winner of the Ernest B. Yeager Award. This award is given by the ECS-Cleveland Section every other year to a researcher in electrochemical sciences in recognition of significant contributions to the advancement of electrochemistry in the U.S. Midwest and Great Lakes region. The symposium will take place at Case Western Reserve University, Clapp Hall 108 and Hovorka Atrium, on **May 8th** from 2:00 pm to 5:45 pm followed by Dinner. The event features invited talks with a keynote lecture, short talks by students, a poster session, and the presentation of the Award to Prof. U. Landau. For more information and to flash-register please visit: http://filer.case.edu/hbm/ecs/ecslocal.htm.

The ECS Cleveland Local Section is looking forward to seeing you at this annual event.

Nominees Sought for Cleveland Section 2009 Executive Committee

By Lily Ng

The Cleveland Section is inviting nominees for the 2009 Executive Committee. We are looking for nominees for Chair-elect, Treasurer, Trustee, Councilor, Alternate Councilor, and Director. For information on the responsibilities of the positions, please see the Section website at www.csuohio.edu/cleveland_acs. For questions and nominations, please contact Lily Ng at l.ng@csuohio.edu or 216-687-2467.

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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.