

Chesapeake Chemist

*Maryland Section
American Chemical
Society*



**Dr. Catherine
Fenselau**

**Mass
Spectrometry
as a Tool for
Counter-terrorism**

**Wednesday, September 24, 2003
College of Notre Dame of Maryland**

Remsen Award rescheduled, page 5.

Chemagination results

On April 30, the Maryland Section held its Chemagination Competition at Towson University. Below are this year's winners.

Transportation/Environment:

Daniel Moser and Chris Odell, Albert Einstein High School, for "Algae + Bioethanol + Carbonol = 1 Extreme Car." A new chemical, carbonal, makes bioethanol a reliable, efficient fuel and super carbon dioxide absorbant algae makes the engine environmentally friendly.

Teacher: Ms. Ann Coren

Biotechnology

Nicole Corrado, Elizabeth Barry, Amanda Harris, Damascus High School, for "Easy Eyez." Dissolving Contacts

Teacher: Ms. Elena Pisciotta

Medicine/ Healthcare

Laura Sauriol, Caitlin Griffin, Lauren Asold, Damascus High School, for "LCL Cooling Lotion." Get Cool While Protecting Your Skin

Teacher: Ms. Elena Pisciotta

New Materials

Bruce Farrell, Joseph Cane, Katie Goldstein, Damascus High School, for "Self-Healing Fabric." Fabric that will repair itself when it tears.

This year's judges were Dr. David Larkin, Chemistry Department, Towson University, and Ms. Louis Hellwig, Chemistry Department, Morgan State University.

The Maryland Section is grateful to the Towson University Chemistry Department staff and faculty for making this event successful. Specifically, the section acknowledges the support from Dr. Boon Loo, the department chair, and Ms. Valarie Smith, the office manager. Without their critical assistance this project would have been difficult to complete. The section also acknowledges the support of all the parents of the participating students.

Budget and Finance (B&F) website launched

Members of the Society Committee on Budget and Finance (B&F) are pleased to announce the Budget and Finance website. This site provides easy-to-understand information about the finances of the ACS and is updated regularly with information that is important for every member to know.

Highlights of the site include

- The latest B&F report to Council
- The Society's 2002 Consolidated Financial Statements
- Financial overview
- Details of the Society's reserves
- The Sources and Uses of Society Funds

The B&F website can be found at <http://www.chemistry.org/committees/budget>.

Please email your questions and suggestions about the kind of information you would like to see on the B&F website to help@acs.org.

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September 2003 Meeting

Wednesday, September 24, 2003
The College of Notre Dame of Maryland

Schedule

6:00 - 6:30 pm	Registration & Social, Doyle Formal Dining Room
6:30 - 7:45 pm	Dinner
7:50 - 8:50 pm	Catherine Fenselau Mass Spectrometry as a Tool for Counter-terrorism

Cost for the dinner is \$20.00 for members; \$15.00 for spouses, retired chemists and guests \$15.00, and \$10.00 for students. For reservations, contact Dr. Shirish Shah at 410-323-0803(H) or via e-mail at dr.shah@juno.com.

Directions: The College of Notre Dame is located at 4701 N. Charles Street. From the south, turn right onto Homeland Avenue, just north of Cold Spring Lane, and then take the first right into campus parking. From the north, turn left on Homeland Ave., a mile south of Northern Parkway. Then turn right into the parking lot.

Abstract

Mass spectrometry is being developed in a number of laboratories to detect airborne biological agents, as well as chemical agents. Its advantages include speed, sensitivity, specificity and universality. The analytical problem will be defined, and progress will be reported in the acquisition of MALDI-TOF mass spectra of protein biomarkers, and in the interpretation of these spectra using proteomics strategies. The research has been supported by DARPA and carried out in collaboration with colleagues at the Johns Hopkins Medical School and Applied Physics Laboratory.

About the speaker...

Dr. Fenselau grew up in Nebraska; she received her A.B. degree from Bryn Mawr College in Pennsylvania and her Ph.D. from Stanford University in the laboratory of Carl Djerassi. After post-doctoral work with Melvin Calvin and A.L. Burlingame at the University of California and the NASA Space Science Laboratory at Berkeley, she joined the faculty of Johns Hopkins University's Medical School. She rose through the ranks to become professor there in 1982, served on the faculty in Chemistry and Biochemistry at UMBC, and is currently professor at the University of Maryland, College Park and the University of Maryland School of Medicine. She is frequently invited to lecture in Europe, Asia and South America, and has been visiting professor at the University of Warwick and at Kansai Medical University. She was president of the American Society for Mass Spectrometry, founding editor-in-chief of Biomedical and Environmental Mass Spectrometry (presently called J. Mass Spectrometry), recipient of the ACS Garvan Medal (1985), the Maryland Chemist Award (1989), the Pittsburgh Spectroscopy Society Award (1993), the 1999 Eastern Analytical Symposium Award for Analytical Chemistry, and the 2003 Anachem Award from FACSS. Presently she is an associate editor for Analytical Chemistry and serves on the Board of Directors of the Maryland Science Center. Her current research addresses mass spectrometry, proteomic studies of acquired drug resistance, and rapid detection of airborne microorganisms. She has published 300 papers and book chapters and trained 145 students and post-doctoral fellows.

Remsen Award Rescheduled

Thursday, October 9, 2003
The Johns Hopkins University, Mattin Student Arts Center (SDS room on first floor)

Schedule

6:00 - 6:30 pm	Registration & Social
6:30 - 7:45 pm	Dinner
8:00 - 9:00 pm	Remsen Lecture (Remsen Hall) Dr. Henry F. Schaefer III, "Molecular Anions: A Wealth of Important, Uncharacterized Systems. From Diatomics to DNA Base Pairs and Beyond"
9:00 - 9:30 pm	Get together with Dr. Schaefer

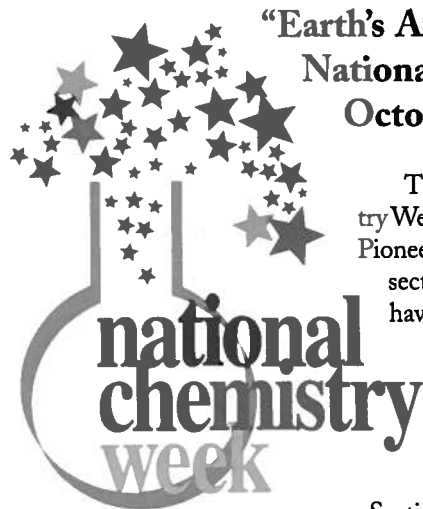
Cost for the dinner is \$25.00 for members; \$20.00 for spouses, retired chemists and guests \$15.00, and \$15.00 for students. For reservations, contact Dr. Shirish Shah at 410-323-0803(H) or via e-mail at dr.shah@juno.com. The Mattin Center is east of the visitor's parking lot towards Charles Street. For a map visit http://webapps.jhu.edu/jhuniverse/information_about_hopkins/visitor_information/how_to_get_here/homewood_campus/parking.cfm.

Molecular Anions: A Wealth of Important, Uncharacterized Systems. From Diatomics to DNA Base Pairs and Beyond

Negative ions are of fundamental importance in chemistry and biology, but are relatively difficult to study in vacuo. In addition to the experimental challenges, some of which are being overcome by the research groups of Kit Bowen and others, molecular anions have proved to be something of a bete noire for theoretical chemistry. Although density functional (DFT) methods have proven effective for qualitative electronic structure studies of large neutral molecules and positive ions, it was long thought that all electron affinities predicted by DFT with suitable basis sets would be identically zero, not a particularly enlightening result. Recent work has shown that the early pessimism concerning DFT studies of anions was without merit, and current research is opening many new vistas of molecular anion chemistry. The possibilities for collaboration between theory and experiment in this area are nearly boundless, extending all the way to problems involving models for molecular biology.

Section archivist looking for back issues of newsletter

Dr. Ernie Silversmith, the Maryland Section's archivist, is looking for back issues of the Chesapeake Chemist. Dr Silversmith has bound volumes of the newsletter from 1945 through 1993, and he is preparing to have the issues from 1994 on bound. He is, however, missing a few issues. To complete his set, he needs the following issues: September 1995 (Volume 51, Number 6) and May 2001 (Volume 58, Number 5). Any members having back issues they can provide to Dr. Silversmith can send them to him at 2607 Taney Road, Baltimore, MD 21209-3915.



"Earth's Atmosphere and Beyond!"

National Chemistry Week

October 19-25, 2003

The unifying event for this year's National Chemistry Week celebration will be "Honoring Innovators and Pioneers in Aviation and Atmospheric Chemistry." Local sections are asked to recognize local individuals that have made important contributions to the advancement of aviation and atmospheric chemistry with Salutes to Excellence presentations. The Office of Community Activities will provide local sections with a complimentary plaque to present to the honoree(s).

Sections are also invited to participate in the national poster competition for K-12th grade students. The contest "Earth's Atmosphere and Beyond!" encourages students to draw a poster illustrating contributions made by chemistry to the advancement of aviation and atmospheric chemistry. National winners will receive a handheld color TV, honorable mentions will be awarded a set of Talk-About 2-Way radios, and teachers of winning students will each receive a Periodic Table of the Elements Poster.

For more information, visit the NCW website at chemistry.org/ncw or contact the ACS Office of Community Activities at 1-800-227-5558, ext. 6097.

Eastern Analytical Symposium award winners

The Eastern Analytical Symposium (EAS) announces the winners of the 2003 EAS awards. The awards will be presented during the annual meeting to be held November 17-20, 2003, at the Garden State Exhibit Center, Somerset, New Jersey.

EAS Award for Outstanding Achievements in the Fields of Analytical Chemistry

William Heineman, University of Cincinnati

EAS Award for Achievements in Near-Infrared Spectroscopy, Foss NIR Systems (sponsor)

Howard Mark, Mark Electronics

EAS Award for Achievements in Magnetic Resonance:

Stephen Fesik, Abbott Laboratories

EAS Award for Achievements in Separation Science, sponsored by Waters Corporation:

Edward Yeung, Iowa State University

American Microchemical Society Benedetti-Pichler Award:

Joseph Sneddon, McNeese State University

New York Section of the Society for Applied Spectroscopy Gold Medal Award:

Frank V. Bright, SUNY - Buffalo

New York Microscopical Society Ernst Abbe Memorial Award:

Gerasimos D. Danilatos

September Historical Events in Chemistry

by Leopold May, The Catholic University of America, Washington, D.C.

- September 2, 1853 Birthdate of Wilhelm Ostwald, a researcher on affinity, mass action, theories of solutions, and conductivity (Ostwald's Law of dilution & conductivity). In 1909, he was awarded the Nobel Prize for his work on catalysis and for his investigations into the fundamental principles governing chemical equilibria and rates of reaction.
- September 3, 1938 Nobel Prize in 2001 with William S. Knowles for their work on chirally catalyzed hydrogenation reactions and K. Barry Sharpless received the other half for his work on chirally catalyzed oxidation reactions.
- September 6, 1876 John J. R. Macleod discovered insulin with Frederick G. Banting and Charles H. Best. He and Banting received the Nobel Prize in Medicine in 1923 for the discovery of insulin.
- September 7, 1828 Birthdate of Alexandre Butlerov, a researcher on the structural theory of organic chemistry; he was the first to use the term chemical structure and synthesized a polymer of formaldehyde.
- September 11, 1894 Carl S. Marvel, born on this date, was a researcher in organic chemistry and polymer synthesis. He investigated the structure of vinyl polymers prepared from polyvinylchloride, proving that the polymers were formed with chlorine atoms on alternate carbon atoms (head-to-tail). In 1945, he was the president of the ACS.
- September 15, 1972 Michael B. McElroy and Thomas M. Donahue presented a detailed chemical dynamic model for a moist Martian atmosphere on this day.
- September 16, 1853 Albrecht Kossel was born on this date. He was a researcher in chemistry of cells and proteins. In 1910, he was given the Nobel Prize in Medicine in recognition of the contributions to our knowledge of cell chemistry made through his work on proteins, including the nucleic substances.
- September 19, 1861 Alexandre M. Butlerov presented the first definition and use of the term *chemical structure* before Speyer Congress.
- September 21, 1832 Louis P. Cailletet, a researcher on the liquefaction of gases, hydrogen, nitrogen, oxygen, and air, was born on this day.
- September 22, 1900 Birthdate of Paul H. Emmett, who received the Maryland Chemist Award in 1970. He did research in the adsorption of gases (BET adsorption isotherm).
- September 25, 1928 Motorola was incorporated as Galvin Mfg. Corp. on this day.
- September 29, 1920 Peter D. Mitchell received the Nobel Prize for chemiosmotic theory and its contribution to the understanding of biological energy transfer, 25 years ago. He is a researcher on chemiosmotic reactions and reaction systems and was born on this day.

For more historical facts on chemistry visit Dr. May's web site at <http://faculty.cua.edu/may>.

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Get your Chesapeake Chemist on the web or via email

For faster delivery, consider having the newsletter emailed to you. Just provide the editor with your email address at cakvt@hotmail.com. The Chesapeake Chemist is also on the internet at two sites now: <http://members.acs.org/m/md/> and at www.towson.edu/~sshah. You can also check either website for information on upcoming meetings and section activities.

CAS adds regional meetings abstracts to databases

Chemical Abstracts Service (CAS) and the Office of Regional Meetings (ORM) are excited to announce that beginning with spring 2003 all regional meetings abstracts will be accessible through all of CAS' online search services: STN[®], SciFinder[®], and SciFinder Scholar. CAS Editorial Operations Director, Dr. Matthew J. Toussant, recognizes that "Regional Meetings . . . communicate a wealth of timely and relevant chemistry-related information. CAS customers will be happy to get fast and convenient access to these abstracts online, before they appear anywhere else." Kathleen Thompson, ORM Manager, concurs. "Regional Meetings authors contribute timely, pertinent, and important technical information to attendees. This collaboration will expand the opportunities that the meetings provide."

Abstracts for the fall regionals also will be added to CAS. Online registration and meeting details are available on the ORM website at <http://www.acs.org/meetings/regional/>

Safety publications from ACS

The ACS Joint Board-Council Committee on Chemical Safety (CCS) is pleased to announce the availability of the seventh edition of *Safety in Academic Chemistry Laboratories (SACL)*. This edition has two volumes: volume 1 for college and university students; and volume 2 for faculty, graduate teaching assistants, and administrators. With this latest edition of *SACL*, CCS has now produced new safety booklets within the last two years for all academic levels: *Safety in the Elementary (K-6) Science Classroom*; *Chemical Safety for Teachers and Their Supervisors, Grades 7-12*; and *SACL*. All of these publications may be ordered from ACS (single copies are free) and may be viewed in PDF on the Committee website, <http://chemistry.org/committees/ccs>.