



VOL. LV

DECEMBER, 1999

NUMBER 9

December Monthly Meeting
Wednesday, December 8, 1999
University of Maryland Baltimore County
Albin O. Kuhn Library & Gallery

Agenda

- 6:00 – 7:00 p.m. Social/Networking time with assorted sodas and light snacks
- 7:00 – 8:00 p.m. Buffet Dinner
- 8:00 – 9:30 p.m. “Molecular Thermodynamics: Insights from Playing with Pens and Blocks”, Dr. Marc Donohue, Johns Hopkins University

Meeting Registration

Dinner price is \$20.00 per person (including social/networking time); \$17.00 for spouses and retired members and \$10.00 for students. You may attend talks without a dinner reservation. Make reservations by Friday, December 3, 1999 by calling Dr. Shirish Shah at Section reservation line 410-532-5712. If you require a special meal (e.g. kosher, vegetarian) please indicate that need to Dr. Shah. Mail checks made payable to Maryland Section of the ACS to Dr. Shah at the Department of Chemistry, College of Notre Dame, 4701 Charles Street, Baltimore, Maryland, 21210. Payment at the door will also be accepted. Late reservations will be accepted on a space available basis.

Directions to University of Maryland Baltimore County

To reach UMBC from the North, take Interstate 95 to Route 166 (Exit 47B, Catonsville) or take Interstate 83 to the Baltimore Beltway (I-695), and then take Exit 12C (Wilkins Avenue, West); follow the signs to UMBC. From the South, take Interstate 95 to Route 166 (Exit 47B, Catonsville); follow signs to UMBC.

Pick up a free temporary parking pass from Parking Services in the central Plant Building (455-2551), the Campus Information and Resource Center on the 2nd floor of University Center (455-1000), or the University Police Office during non-business hours. Visitor parking regulations are enforced on all University calendar days. Hilltop Circle and all campus roadways require a parking permit unless otherwise marked.



THE CHESAPEAKE CHEMIST

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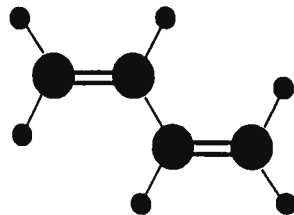
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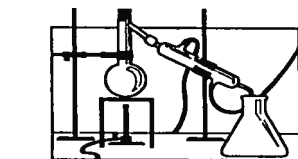
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We look forward to your presence at the conference to work together with a common goal of strengthening and enhancing chemistry education in the state of Maryland.

Conference Planning Committee:

*Laurence Boucher, Towson University

*Vera Zdravkovich, Prince Georges

Community College

*Shirish Shah, College of Notre Dame of Maryland

*Paula Hendry, US DOE

*Jose Barata, UMBC

*Gary Hedges, Maryland State Department of Education

*Scott Sinex, Prince Georges Community College

*Al DeGennaro, Westminster High School

*Nusret Hisim, Walkersville High School

The Chesapeake Chemist is published monthly September through May by the Maryland Section of the American Chemical Society. Address editorial comments to the Editor. Send advertising copy and inquiries to the Business Manager. The Maryland Section is not responsible for opinions expressed herein. Editorials express the opinions only of their authors. The Editor is responsible for all unsigned material.

THE MARYLAND CHEMIST AWARD

MARYLAND SECTION
of the
AMERICAN CHEMICAL SOCIETY
MARYLAND CHEMIST AWARD

1999
Presented to

Professor Marc D. Donohue

In acknowledgment and appreciation of his outstanding research combining statistical mechanics and computer simulation on non-ideal systems and his significant contributions to the development of the new equation of state and to the understanding of the intricate relationship between molecular and macroscopic phenomena; furthermore, in recognition of his being a productive researcher, a prolific publisher and a distinguished educator.

Awarded this 8th day of December 1999 with the esteem of his fellow professionals and the affection of his colleagues and associates.

Marc Donohue
Department of Chemical Engineering
Johns Hopkins University

"Molecular Thermodynamics: Insights from Playing with Pens and Blocks"

Molecular thermodynamics is the study of how molecular properties (such as size, shape, polarity, and polarizability) affect macroscopic thermodynamic properties (including vapor pressure, solubility, absorption, and critical phenomena). This lecture will cover how simple conceptual arguments, obtained by playing with pens and blocks, have led to several of the advances in this field. Topics to be discussed include the behavior of chain molecules, hydrogen bonding, supercritical fluids, adsorption, and order-disorder phase transitions.

About the speaker...

Marc Donohue received his B. S. degree in Chemical Engineering in 1973 with High Distinction from Clarkson College of Technology, Potsdam, New York. He then earned his Ph.D. degree in 1977 in Chemical Engineering from the University of California, Berkeley, and immediately joined Clarkson College as an Assistant Professor. After two years, he moved to Johns Hopkins University in 1979 and was promoted to Associate Professor in 1983. From 1984 to 1995, he served as he Chairman of the Department of Chemical Engineering, Johns Hopkins University and was appointed as a Professor in 1987. He is a recipient of numerous honors such as the Dow Outstanding Young Faculty Award (1985), the Kirkpatrick Award (1991) and the Outstanding Engineering Award (1990). He holds three patents and serves as a consultant to some seventeen corporations including such blue chip companies as duPont, Exxon, Eastman Kodak, Beckman Instruments, Raychem, Nabisco, etc. His wide variety of consulting assignments reflects his wide interest in a wide variety of professional subjects. He is a prolific researcher, in that he has co-authored over one hundred papers published in national and international journals.

MARYLAND CHEMIST AWARD

The Maryland Chemist Award was established in 1962 to recognize and to honor, each year, a member of the Maryland Section for outstanding achievement in the field of chemistry. The achievement, as originally stated, may be in pure or applied chemistry, chemical engineering, or chemical education. Some recipients have distinguished themselves in management.

The Section's Bylaw VIII establishes the rules of selection of recipients Maryland Chemist Award. Recommendations of Awards Committees must be approved by the Section officers. The applicable section of Bylaw VIII is quoted as follows:

"Recipients of the Maryland Chemist Award must have been members of the Section for a minimum of five years and have made outstanding contributions to chemistry as defined in the Constitution of the SOCIETY (chemistry is defined in broad terms). The work on which the award is based should have been performed in Maryland."

Previous recipients have been:

1962 E. Emmet Reid	1975 Benjamin Witten	1988 Edward J. Poziomek
1963 W. Mansfield Clark	1976 Richard L. Hall	1989 Catherine Clarke Fenselau
1964 Alsoph H. Corwin	1977 Henry C. Freimuth	1990 Alex Nickon
1965 John C. Krantz, Jr.	1978 Gunther L. Eichhorn	1991 Cecil H. Robinson
1966 Belle O. Talbot	1979 Emil H. White	1992 Craig A. Townsend
1967 Walter S. Koski	1980 M. Gali Sanchez	1993 Ernest F. Silversmith
1968 George L. Braude	1981 Paul O. P. Ts'o	1994 Yale H. Caplan
1969 Leslie Helleman	1982 Joseph L. Katz	1995 Richard H. Smith, Jr.
1970 Paul H. Emmett	1983 Shih-Yi Wang	1996 Shekar Munavalli
1971 Giles B. Cooke	1984 Nicolas Zenker	1997 WuCheng Cheng
1972 Arnold M. Seligman	1985 John Lambooy	1998 Joel F. Liebman
1973 Lester P. Kuhn	1986 David F. Roswell	
1974 Joyce J. Kaufman	1987 Gary H. Posner	

A SPECIAL INVITATION: Past winners of the Maryland Chemist Award attending this year's award meeting (the last of the millenium?) will be recognized and honored for their individual contributions to chemistry in general and to the Maryland Section in particular.

NOMINATIONS SOLICITED: The Maryland Chemist Award Committee is inviting nominations for the 2000 Maryland Chemist Award. Details of the nominating procedure may be obtained from S. Munavalli [410-436-2819 (w) or 410-838-7565 (h)]. Nominations may be sent to S. Munavalli 700 Paige Circle, Bel Air, MD 21014.

When is the last time you attended an ACS meeting?

NATIONAL TECHNOLOGY MEDAL NOMINATIONS

All ACS members are invited by the Committee on Patents and Related Matters (CP&RM) to suggest possible nominees for the National Technology Medal. Funded by the United States Department of Commerce and established by the Stevenson-Wydler Innovation Act of 1980, the medal is awarded annually by the President. It may be awarded to individuals, groups, companies, or institutions within the United States for outstanding contributions to technology or for the promotion of the technological workforce. Nominations can be sent to Debbie Fillinich, CP&RM staff liaison, American Chemical Society, 1155 Sixteenth Street, NW, Washington, DC 20036.

For further information search <http://www.ta.doc.gov/medal>, call ACS at 202-872-4476, or e-mail d_fillinich@acs.org. CP&RM will consider the nominations during the national ACS spring meetings.

Global Salute to Polymers

At our October meeting, a gourmet dinner at the American Chemical Society's Belmont resort, the Maryland Section honored the Baltimore Museum of Art, Pemco International and Guilford Pharmaceuticals, Inc. with the Historical Polymer Site designation.

Representatives of the three honorees discussed the history and accomplishments of each organization.

The Global Salute to Polymers is part of the 1999 International Chemistry Celebration sponsored by the ACS and other organizations around the world.

At the same meeting, Ernest Silversmith was designated the Maryland Sections Mobile Historical Polymer Site.

The Baltimore Museum of Art

History

The Baltimore Museum of Art is Maryland's largest art museum housing over 100,000 objects. The BMA's Cone Collection is one of the most outstanding modern art collections in the world and includes works by Matisse, Picasso, Renoir, Cezanne, van Gogh, Gauguin, and other great modern artists. The museum also has an American Wing with furniture, paintings, miniature rooms, and period rooms. Other exhibits include Chinese ceramics, Old Master galleries, and one of the finest collections of prints, drawings, and photographs in the United States. The west wing focuses on painting and sculpture from 1945 to the present and includes a gallery of major works by Andy Warhol.

Polymers and Art

The Baltimore Museum of Art is an excellent example of the wide range of polymeric materials used in creating art. The works range from a time when only natural materials were available to artists to modern art that uses synthetic as well as natural materials. There are works using both organic and inorganic polymers and water-based and oil-based polymers. From fabrics to paintings, photographs to ceramics, works of art using polymeric mediums abound at the BMA.

Public Programs

The Baltimore Museum of Art offers a variety of public programs such as the First Thursday Freestyle, Gallery Talks, and lectures that instill a positive public perception of polymers in art applications. The BMA even celebrated National Chemistry Week 1998 and helped children see the connection between art and chemistry.

Conservation

The Baltimore Museum of Art also works to continuously to conserve the works of art and find suitable materials for repairing damaged works. They have received grants from the NEA, IMLF, and the Carpenter Foundation. One of the BMA Paper Conservationists has been named a Fellow at the National Gallery through CASVA working on restoring colored prints.

PEMCO

International

In 1910, the Turk brothers established the first company in the U.S. for the commercial production of vitrified glass (FTIT) coatings systems in Baltimore, Maryland. In 1961, PEMCO was sold to the Glidden Company. Since then, PEMCO has been part of SCM, Bayer, Mobay, and Miles. In 1997, PEMCO International was established following the purchase of the worldwide Enamels and Ceramics business from Bayer. The PEMCO International Group includes manufacturing sites in Belgium, Spain, Italy, and Argentina. There are also technical support centers in South East Asia and South America and businesses in Mexico and Germany.

Technology, PEMCO Firsts, and Products

Beyond being the first FRIT producer in the United States, PEMCO has been a leader in enamels, ceramics, and porcelain industry. Some important contributions and products include:

- Founding member of Enamel and Porcelain Institute - 1930
- PEMCO enameled panels were used in the Baltimore Harbor Tunnel
- First lead-free glaze for ceramic dinnerware
- First commercially acceptable titania opacified chip-resistant coatings
- Leaders in developing lower firing application temperature glasses
- Designed glass coatings for steel that do not require pretreated substrate
- Grills - Weber
- Appliances - Whirlpool, Maytag, General Electric, Amana, Frigidaire, Magic Chef
- Water heaters - Rheem
- China - Lennox and Phalzgraff

Guilford Pharmaceuticals, Inc.

Guilford Pharmaceuticals, Inc. was founded in July, 1993 by Scios-Nova, Dr. Craig R. Smith, President and Chief Executive Officer, and Dr. Solomon Snyder, Director of Neuroscience at the Johns Hopkins Medical School. Since its inception, Guilford has grown considerably and now employs over 230 highly skilled individuals.

Based in Baltimore, Maryland, Guilford is a biopharmaceutical company specializing in two principle areas. The first is developing novel therapeutic products for the treatment and prevention of neurological disorders such as Parkinson's disease, Alzheimer's disease, stroke, severe head trauma, spinal cord injuries, multiple sclerosis and peripheral neuropathies. The second area is the development of targeted and controlled drug delivery systems using proprietary biodegradable polymer for the treatment of cancer and other diseases.

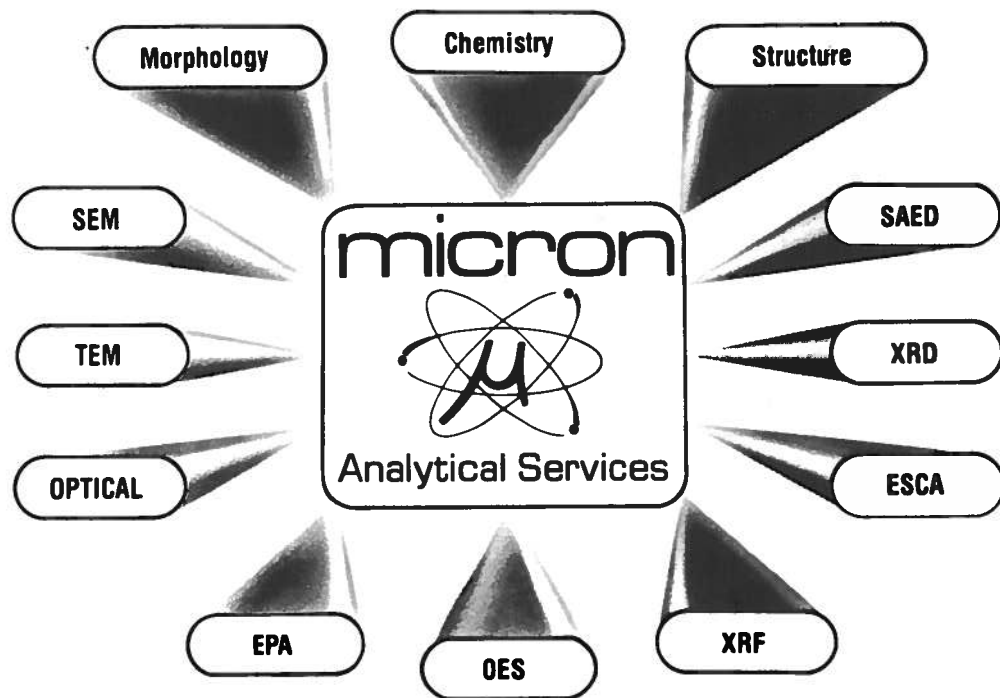
Polymeric Drug Delivery Systems

Guilford Pharmaceuticals developed a specialized biopolymer drug delivery system, which provides safer and more effective medicines for the treatment of diseases such as brain cancer. GLIADEL® Wafer, Guilford's first commercial bioproduct, is *the first new treatment to be approved for brain cancer in more than two decades*. It is the first technology capable of delivering a chemotherapeutic agent directly to the site of a tumor. By delivering up to 1,000 times more beneficial chemotherapy to a patient than standard methods of treatment, GLIADEL® Wafer is giving new hope to patients with severe, life-threatening disease by changing the way brain cancer is treated. Building on this success, Guilford is continuing to pioneer new cancer treatments using its' proprietary classes of biodegradable polymers.

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The ACS Congressional Fellowship Program will place two ACS members in congressional offices for one year beginning in September of 2000

Applications are due January 3, 2000. The ACS is seeking applicants from among ACS members who range from the seasoned chemical professional to the recent graduate with or without work experience. ACS provides a stipend and an allowance for relocation expenses.

ACS also selects a *Science Policy Fellow* who works in the Headquarters Office of Legislative and Government Affairs, usually for two years. The Science Policy Fellowship offers a unique opportunity for a scientist to contribute to the Society's discussions and recommendations in areas of importance to the chemical community.

Contact the program office for application information:

Congressional Fellowship Program/Science Policy Fellow Program
Office of Legislative and Government Affairs
American Chemical Society
1155 16th Street, NW
Washington, DC 20036

202/452-8917
e-mail: congfriend@acs.org
web: <http://www.acs.org/govt>