



THE

CHESAPEAKE CHEMIST

MARYLAND SECTION
AMERICAN CHEMICAL SOCIETY

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NUMBER 6

*Maryland Section
American Chemical Society
and the
Chemistry Educators of Maryland*

*Joint September Monthly Meeting
Wednesday, September 16, 1998*

College of Notre Dame

- 5:00 pm Group meetings: Knott Science Center, Rooms 230, 233 and 236
to "Project-STIR: Science Teachers in Industry and Research"
Ms. Adele Kupfer, New Rochelle High School
- 5:50 pm "Stereochemical Effects on Chemical Shift Differences of Bridge
Protons in Diazenes, Urazoles and Related Molecules"
Professor Lev Ryzhkov, Towson University
"Overview and Versatility of Hydrocolloids"
Mr. Stuart Cantor, TIC Gums, Inc.
- 5:30 pm Social and Networking (Doyle Formal)
- 6:45 pm Dinner
- 7:45 pm "Risk Assessment and Risk Management in Federal Regulatory
Programs"
Dr. Gail Charnley, The Weinberg Group, Washington, D.C.

The Great American Buffet dinner includes hot dishes, vegetables, rolls, beverages and dessert. Dinner price is \$16.00 (\$14.00 for retired members and spouses and \$8.00 for students). Make reservations by Friday, September 11, 1998 by calling Dr. Shirish Shah at the Section reservation line 410-532-5712. If you require a special meal (e.g., vegetarian, kosher) please indicate that need to Dr. Shah. Mail checks payable to Maryland Section, American Chemical Society to Dr. Shah at the Department of Chemistry, College of Notre Dame, 4701 North Charles Street, Baltimore, Maryland 21210. Payment at the door will also be accepted. Late reservations will be accepted on a space available basis. You may attend the technical group meetings and/or Dr. Charnley's presentation without a dinner reservation.



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Risk Assessment and Risk Management in Federal Regulatory Programs

**Ms. Gail Charnley, Ph.D.
The Weinberg Group Inc.**

Risk assessment is the process of gathering and analyzing information about exposures and hazards. Risk encompasses impacts on public health and on the environment and provides important information that can be used to inform risk management decisions. Risk assessment evolved in the US as a tool for setting chemical-specific standards so that we could perform risk management for example, determine how much we need to control pollutant releases to the environment, what levels of pesticide residues in food could be considered safe, how much to control occupational exposures to chemicals, and how to clean up areas contaminated with chemicals because of past industrial waste disposal practices. A framework for risk assessment was described in 1983 by the National Academy of Sciences. Risk assessment is a decision-making tool; it does not produce scientific calculations of actual risks. Risk assessments provide useful information that together with information about costs, benefits, public values, and legal and other factors can be useful guides in risk management decision-making.

A framework for risk management has been proposed recently by the Commission on Risk Assessment and Risk Management. The Commission developed the framework to improve the logic, consistency, and acceptability of decisions related to public health protection and environmental and occupational health risk management. The framework has six components: Problem/Context, Risks, Options, Decision, Action, and Evaluation. The risk management decision-making process is conducted in full collaboration with affected stakeholders, and is implemented iteratively, so that it can be refined based on continuing information acquisition and monitoring. The framework can be scaled to accommodate the risk management decision-making needs of states, communities, and tribal governments, in addition to federal regulatory programs. This integrated risk management approach moves public health and environmental protection beyond the current statutorily fragmented, chemical-by-chemical, medium-by-medium risk-by-risk, command-and-control approaches by simultaneously incorporating various media, contaminants, sources of exposure, non-regulatory approaches, and public values.

About the Speaker.....

Dr. Gail Charnley earned the A. B. , Biochemistry, from Wellesley College, (with honors) in 1977 and the Ph.D. Toxicology, from the Massachusetts Institute of Technology in 1984. She joined THE WEINBERG GROUP INC. in 1997 and serves as Director of the Management of Risk program in the firm's Health, Safety, and Environmental Sciences group. She has over 20 years of experience in environmental toxicology, human health risk assessment, and risk management. She is responsible for the strategic risk management of complex scientific issues related to the implementation of numerous regulatory programs and standards, including the Clean Air Act, Food Quality and Protection Act, and EPA's new cancer risk assessment guidelines. Prior to her current position she was executive director of the Presidential/Congressional Commission on Risk Assessment and Risk Management mandated by Congress to evaluate the role that risk assessment and risk management play in federal regulatory programs, establishing her as a leader in health risk-related public policy. She served as project director for several National Academy of Sciences communities, including the Committee on Risk Assessment Methodology and the Complex Mixtures Committee, and as the chair of several U.S. Army Science Advisory Board studies that evaluated health risk assessment practices in the Army. She has conducted laboratory research publish and consulted for both public and private sector clients in areas related to the experimental and applied aspects of toxicology human health risk assessment. She lectures frequently on science policy issues and is the author of numerous reports evaluating the toxicity of chemical exposures. She is also president-elect of the Society for Risk Analysis.

Project-STIR: Science Teachers in Industry and Research

**Ms. Adele Kupfer
New Rochelle High School**

In 1992, Adele Kupfer established Project STIR, a non-profit clearinghouse for the transfer of functional surplus science equipment from industry and research facilities to schools in the greater New York metropolitan area. The project responds to the need of urban and city schools to obtain adequate and up to date science equipment and supplies, and to encourage a hands-on inquiry based learning atmosphere in high school science classes. Project-STIR sought and facilitated the transfer of this equipment from Metropolitan industrial facilities and private universities into 145 schools that desperately needed such supplies. By the spring of 1998, the project effected the transfer of over 80,000 items from 48 donors, a saving to the schools of about two million dollars. With increasing industry input, the project has expanded to include year round workshops on laboratory and computer technology, summer research internships in industry and a summer institute on laboratory instrumentation and related classroom activities. In her presentation, Ms. Kupfer will detail how she established the clearinghouse and will make suggestions for the replication of such a project in other localities.

About the Speaker.....

Educated in the New York City school system, Adele Kupfer received the baccalaureate at Hunter College, an MA in Science Education at Teacher's College and an MS in Biochemistry at New York University. After 10 years of research experience at Cornell Medical College, Sloan Kettering Institute and Sarah Lawrence College, Ms. Kupfer entered the teaching profession as a chemistry teacher at New Rochelle High School where she taught for 25 years. Her experiences in teaching research project courses and obtaining necessary equipment for her students led to the foundation of Project-STIR, which became an activity of the Graduate Center of the City University of New York. In 1996 she received the Sigma Xi Award for Outstanding Excellence in Science Education.

Overview and Versatility of Hydrocolloids

**Mr. Stuart Cantor
Senior Technical Services Representative
TIC Gums, Inc.**

Gums or hydrocolloids are either natural or synthetic polymers. They can be soluble in water or other solvents and have unique chemical properties. Gums are widely used in the food, pharmaceutical and industrial markets. Gums also contain a minimum of 80% dietary fiber, which has been shown in numerous scientific studies to help reduce cholesterol. The chemical and physical properties and regulatory issues of gums will be discussed. Applications in a variety of food products and some sample recipes will also be included in this talk.

About the Speaker.....

Mr. Cantor earned the MS in Food Science from the University of Georgia in 1990 and is currently a Senior Technical Services Representative at TIC Gums, Inc. He has responsibility for chromatographic and wet chemical testing in addition to his customer service function. He has published 12 articles on various food and health topics in US and European trade journals. He also teaches general chemistry as a contractual faculty member at Towson University.

Council Meeting Report

Dallas, Texas

April 1, 1998

The Council of the American Chemical Society met during the national meeting in Dallas on Wednesday, April 1. The meeting began at 8:30 A.M. and lasted until about 11:30. Three of the Maryland Section Councilors attended: Don Jones, Merle Eiss and David Roswell. Charles Rowell was unable to attend.

After the opening call to order, two resolutions were read and a moment of silence was observed in honor of deceased councilors. The minutes of the previous meeting in Las Vegas were then approved and a report on interim actions presented by the Council Policy Committee (CPC). One interim item of significance was CPC authorization to the Committee on Meetings and Expositions to recommend directly to the Board of Directors that the spring 2000 meeting be moved from Las Vegas to San Francisco, a recommendation that was subsequently accepted by the Board.

The Council then undertook one of its major tasks. After the Committee on Nominations and Elections presented four candidates for nomination for President-elect for 1999, the nominees had the opportunity to present their ideas to the Council. The Council then selected Daryle H. Busch and Glenn A. Crosby to be candidates in the subsequent election by the membership. (We would urge you to read the platforms that these candidates present in *C&E News* and then vote your choice in the upcoming election.)

Oral reports from the elected officers and the Executive Director followed. Membership is one of the strategic thrusts that clearly emerged from those reports. The 1998 goal is to increase membership in the Society to 161,000 and to have a 94% retention rate. Clearly to increase and retain members the Society needs to be very attentive to member needs and to provide programs that facilitate career development.

Next the standing committees presented reports. The Committee on Committees recommended a change in the bylaws as to the duties of the Local Section Activity Committee (LSAT). The change is intended to allow LSAT to make recommendations to the Council concerning which, if any, local sections could be dissolved for "good and sufficient reason." This recommendation was accepted unanimously by the Council and will now go to the Board of Directors for confirmation.

The report from the Committee on Budget and Finance (B&F) caused the most discussion. One of the duties of B&F is to recommend changes in the annual dues. Some years ago the Council adopted a policy allowing dues to escalate with the CPI. This escalator provides for a \$3 increase in the dues for 1999, to \$105. Some members of the Council felt that there was no need to raise dues at this time even though not to do so was in fact to reduce dues in constant dollar terms. Proponents of the \$3 increase argued that dues today contribute 25% to the cost of the Society's programs whereas 10 years ago they contributed to more than 70% of the cost. There are a number of reasons for this, including the increased contribution from the return on reserves and the contributions made to programs from publications. After significant debate the proponents won by a vote of 264-95. The Maryland Section councilors voted with the majority to set the 1999 dues at \$105.

The only other committee report to receive significant discussion was that of the Committee on Economic and Professional Affairs. They are in the process of reviewing a new edition of the ACS Professional Guidelines (PEG). Some members of the Council are concerned that reports on multiple terminations are not, as was previous practice, being investigated and the results of such investigation published in *C&E News*. In fact, changes in the guidelines are not related to decisions to investigate multiple terminations

but the Committee is looking for feedback on its recommendations and councilors were urged to review them and to make suggestions prior to the discussion at the fall meeting in Boston.

No subsequent reports led to significant discussion and, there being no further business, the Council adjourned at 11:30 A.M.

Respectfully submitted for the Maryland Section councilors,

David Roswell

Directions to the College of Notre Dame 4701 North Charles Street

From the north: Take Charles Street south from I-695 (the Baltimore Beltway). Continue south on Charles Street for about six miles. The College will be on the left about one mile past the Northern Parkway intersection. **From the south:** Travel north on I-83 and exit east on Cold Spring Lane. Continue east on Cold Spring Lane and turn left onto Charles Street. Continue north on Charles Street for about one quarter mile. The College will be on the right just past Loyola University.

Stereochemical Effects on Chemical Shift Differences of Bridge Protons in Diazenes, Urazoles and Related Molecules

**Professor Lev Ryzhkov
Assistant Professor of Chemistry
Towson University**

The stereochemical assignment of bridge proton in cyclic diazenes, the aza analogs of norbornene, is of considerable practical interest. These molecules are important sources of cyclic triplet and singlet 1,3- and 1,4-biradicals. The chemical shifts of bridge protons are very sensitive to the stereochemistry in the rigid bicyclic molecules. In norbornene for example, bicyclo[2,2,2]octane and their 2- and/or 3-substituted derivatives, the exo protons on a two carbon bridge are deshielded relative to the endo protons, while the relative chemical shifts of one carbon bridge protons are opposite of the latter. We will report computational and experimental studies performed to determine the origin of relative chemical shift differences of bridge protons in diazenes, urazoles and related molecules.

About the Speaker.....

Lev Ryzhkov obtained the BS Chemistry from the Stevens Institute of Technology in 1986 and the Ph.D. in Physical Organic Chemistry from Brown University in 1991, under the direction of Professor Ronald G. Lawler. After three years as a postdoctoral research associate at Yale with Professor J. Michael McBride, he spent a year as a visiting Assistant Professor of Chemistry at Skidmore College. He is currently an Assistant Professor of Chemistry at Towson University. His main research interests include structure and dynamics of organic radicals and biradicals, magnetic resonance spectroscopy (low temperature EPR and NMR) and studies of spin-labeled oligonucleotides and their duplexes.

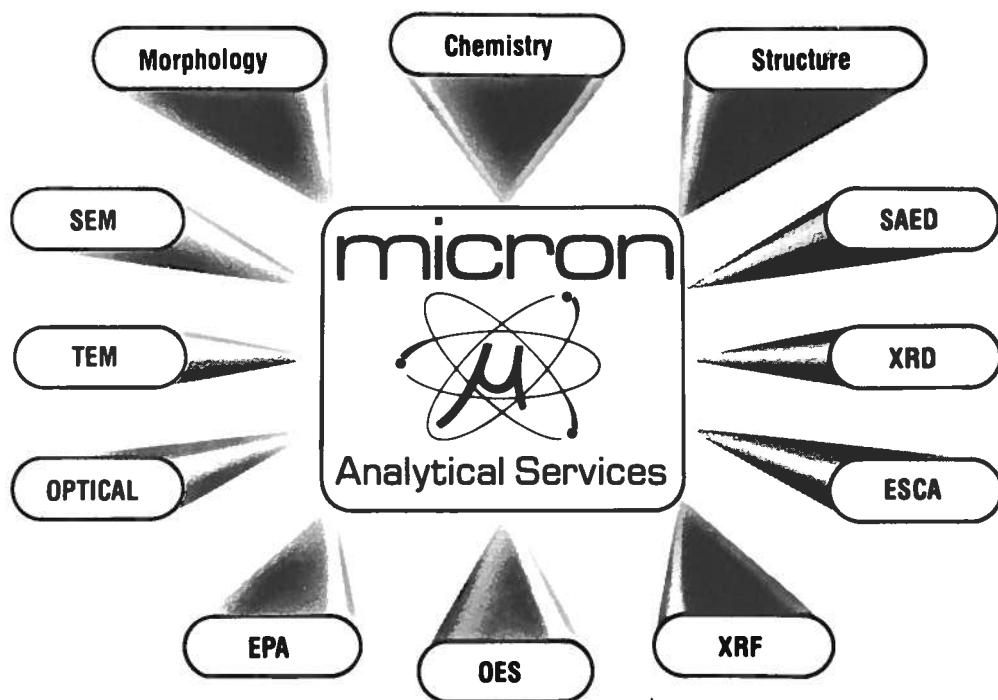
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NATIONAL CHEMISTRY WEEK

Maryland Section once again plans a wide variety of activities for National Chemistry Week. Anticipated locations include the Maryland Science Center, libraries and possibly the Baltimore Zoo.

We will want volunteers for late October and much of November. A training program for volunteers will be held in late September. You may contact Dr. Victoria Kuntz, Dr. Shirish Shah or Dr. Anna Kraut for further info.

MARM 2001

The Middle Atlantic Regional Meeting of the ACS originally scheduled for the year 2000 has been postponed until 2001. Members interested in serving on any of the MARM 2001 committees should contact General Chairperson Laurence Boucher at the Department of Chemistry, Towson University, Towson, MD 21252 or by e-mail at lboucher@towson.edu