



THE

CHESAPEAKE CHEMIST

MARYLAND SECTION
AMERICAN CHEMICAL SOCIETY

VOL. XLIV

APRIL, 1988

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AMERICAN CHEMICAL SOCIETY

For

Outstanding Achievement in Chemistry





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The Section on balance had a productive year. Instead of our usual eight monthly meetings we had ten plus a PICNIC. The Section participated, with vigor, on National Chemistry Day. Our main event was a gala affair on November 6th. We arranged an exhibit at the Maryland Science Center, a popular talk by a Nobel Laureate and a reception at the McCormick Co.'s Tearoom. We had approximately 175 persons in attendance. Also our industrial neighbors participated by contributing upwards of \$2,500 to pay for the event. Anne Arundel Community College's chemistry faculty and student affiliate organized a celebration for NCD in their area. The Maryland Section made a small cash contribution to this effort.

We arranged a PICNIC with the Chemistry Society of Washington at Belmont. The Staff at Belmont was most helpful. The day was just great. We plan to repeat this event in 1988.

The Maryland Chemist Award, featured at our December meeting at Johns Hopkins University, was outstanding. We established a new high for attendance at a Section dinner. Evidently, we had a popular awardee and a convenient location. We will try to build on this information.

The rise in the cost of the dinner meetings has us a bit concerned. We believe that we should try to arrange good dinner meetings but how we can price them at a reasonable level is a dilemma. We have been fortunate that commercial firms have been willing to underwrite part of our costs, however, we hesitate to ask for more from this source.

The Section usually arranged two talks for each monthly meeting. The late afternoon meeting is usually different in character and attendance than the after dinner session. We plan on continuing this format.

An interesting sidelight developed when we were organizing our April meeting. April is the month in which we honor outstanding undergraduates majoring in Chemistry. We thought that it would be appropriate to bring in some role models to speak on the topic "There Is Life After Majoring In Chemistry". To our surprise, we discovered that seven of our members had children who were members of ACS. Further, we noticed that the parent was male but the offspring was 6:1 female. A sign that things can change in a generation.

Lastly, the composition of our Executive Committee has been changed. We were able to replace some of our committee with new young faces. A goodly portion being female. This made us aware that we should explore the possibility of having a Women Chemist Committee. The Women Chemist Committee was established in April.

Alvin Bober

GOLDEN ANNIVERSARY

This year marks the 50th anniversary of the Division of Analytical Chemistry of the American Chemical Society.

The Division, started on September 5, 1938 as the Microchemical Division of the ACS, expanded in 1940 into the Division of Analytical and Microchemistry. In 1949 the name was changed to the Division of Analytical Chemistry. Today it has the third largest membership of all ACS divisions.

To celebrate its anniversary, the Division is organizing a symposium at the Los Angeles National ACS Meeting (September 25-30, 1988). The symposium, Frontiers in Analytical Chemistry, is being arranged by Allen J. Bard. A number of former Fisher Award recipients have been invited to participate.

THE CHESAPEAKE CHEMIST STAFF

Raymond C. Petersen.....Editor
9329 Joey Drive
Ellicott City, MD 21043
465-8520

Bruce L. Solnick.....Business Manager
MD State Health Dept. Lab. Adm.
Baltimore, MD 21201
225-6209

SECTION OFFICERS

William E. White.....Chairman
Physics Division, CRDEC
APG, Aberdeen, MD 21010-5423
671-2670

Joseph Topping.....Chairman-elect
Towson State University
Towson, MD 21204
321-3056

Maria Kristine Kirk.....Secretary
4000 Mayberry Avenue
Baltimore, MD 21206
532-5712

Joseph J. DeFrank.....Treasurer
Biotechnology Div., CRDC
APG, Aberdeen, MD 21010
671-3972

COUNCILORS

Donald Jones.Western Maryland College
848-7000 ext 493 or 876-2055

David Roswell.....Loyola College
323-1010 ext 235

Charles Rowell....U. S. Naval Academy
267-2808

Merle I. Eiss....McCormick & Co., Inc
771-7485

ALTERNATE COUNCILORS

Elwin Penski
Tim McNeese

Alvin Bober
Mike Zapf

COMMITTEE CHAIRPERSONS

Remsen Award.....Timothy J. McNeese
Loyola College
323-1010 ext 237

Maryland Chemist Award..James W. King
Chemical R & D Center, EA
APG, MD 21010
671-3482

Maryland Service Award...Donald Jones

Student Awards.....Donald Hoster
Community College of Baltimore
396-7991

Women Chemist.....Lena Ohannesian
698-1604

Chemical Education and Safety.....
435-0100 Stephen Gregory

Archives.....Ernest Silversmith

House.....Judy Pack
Henry Freimuth

Member Assistance.....Merle Eiss
McCormick & Co., Inc.
771-7485

Public Relations.....Rene J. Muller
366-0640

Membership.....Ted Stockus
Analyte Laboratories, Inc.
6630 Baltimore National Pike
Baltimore, MD 21228
747-3844

Publicity.....Donald Jones
Western Maryland College

Finance.....Harold Klapper
653-3351

MEMBERS-AT-LARGE

Donald Hoster Dale L. Whalen
Hope L. Bober Jeanette S. Hamilton
James W. King

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SCIENCE IN OUR LIVES

by Dr. Mary L. Good
1987 President
American Chemical Society

Chemistry Can Help Us Win Race in High Technology

The complexity of nature never ceases to arrest our attention, to amaze us, delight us, perplex us, and demand that we stretch our intelligence to understand. More astounding than its complexity is the basic simplicity from which nature has built every material thing we know.

How atoms of the 90 or so chemical elements that occur in nature link to form structures we call molecules affects every event in the universe. Our ability to manipulate these structures through the science of chemistry -- the molecular science -- will be critical to the nation's vitality in the future.

A 1984 Brookings Institution study shows that technological innovation is the greatest single contributor to productivity increase. Innovations in technology historically have led to more exports and new jobs. The U.S. rate of productivity gain is an annual average of about 0.3 percent, while that of Japan is nine times greater, and South Korea's 16 times greater. Our home markets are being invaded by high-quality low cost products from all over the world, and our ability to sell to global customers is eroding.

A consensus has arisen that technology-based products and services are our best hope for remaining a leader and major player in world markets in the next few decades. Two prime examples of high-technology areas where we can continue to excel are advanced materials and products created through the new biotechnology of recombinant DNA. Both of these are in chemistry's realm, because achievements in each are made at the molecular level.

But even in high technology, our track record over the past few years is not encouraging. In 1980, U.S. high-tech industries produced a trade surplus of \$27 billion. That surplus dwindled to \$3 billion by 1985. Estimated 1986 figures show a deficit in high technology of \$2.26 billion. It is significant, though, that chemically based products are a mainstay of one of the few areas where the U.S. still has a vigorous, positive balance of trade.

The race is on in high technology. Advanced materials, biotechnology, specialty chemicals, and computer-assisted chemistry and biology are essential for the continued vitality of American industry and, consequently, for American science.

The challenge for chemists, and for the nation's policy makers too, is to realize that chemistry, the molecular science, is at the heart of this new technology thrust. Full use must be made of this powerful science to achieve a stronger nation; cleaner environment; longer, healthier, more productive, more gratifying lives.

REMSEN AWARD MEETING

The annual Remsen Award meeting will be held May 18 at The Johns Hopkins University. The recipient of the award will be Mildred Cohn, Emeritus Benjamin Rush Professor of Physiological Chemistry at the University of Pennsylvania School of Medicine. The title of her lecture will be "NMR Studies of Enzyme Kinetics and Equilibria".

NSF REPORT

The National Science Foundation reports that, despite employment gains since the mid-1970s, women, blacks and Hispanics in science and engineering fields remain substantially underrepresented, and they experience higher unemployment rates and lower salaries.

The report, the fourth in a biennial series prepared by NSF's Division of Science Resources Studies, is entitled "Women and Minorities in Science and Engineering."

In 1986, blacks accounted for only 2.5 percent of all employed scientists and engineers, up from 1.6 percent in 1976, while they account for roughly 10 percent of overall U.S. employment. Hispanics represent about 7 percent of U. S. employment, but only about 2 percent of the science and engineering workforce.

Among minorities, Asians are well represented: about 5 percent of scientists and engineers are Asian, compared to about 2 percent of the total labor force.

Copies of the report (NSF 88-301) are available from the Division of Science Resources Studies, National Science Foundation, 1800 G Street, N.W., Room L-611, Washington, D.C. 20550; or call (202) 634-4664.

THE REMSEN AWARD

The annual Remsen Memorial Lecture was inaugurated in May, 1946, by the Maryland Section of the ACS to honor Ira Remsen, first Professor of Chemistry and second President of the Johns Hopkins University. The Remsen Memorial Lecturers are chemists of outstanding achievement, in keeping with Ira Remsen's long and devoted career as an exponent of the highest standards in teaching and research in chemistry.

Please send nominations for the Remsen Award to one of the following members of the Remsen Award Selection Committee.

The nomination should be accompanied by a curriculum vitae and publication list of the nominee, as well as any other information that will help the Selection Committee.

Remsen Award Selection Committee

Timothy J. McNeese, Chairman
Department of Chemistry
Loyola College
4501 North Charles Street
Baltimore, MD 21210
(323-1010, ext. 2237)

Gary H. Posner
Department of Chemistry
Johns Hopkins University
Charles and 34th Streets
Baltimore, MD 21218
(338-7443)

James M. Courtney
Courtney Industries
4401 Eastern Avenue
Baltimore, MD 21224
(276-5003)

Harold Klapper
SMCCR-RSC-P
Chemical Division
CRDC
Aberdeen Proving Ground, MD 21010
(671-2265)

NOMINATING COMMITTEE

A nominating committee has been appointed to prepare a slate for Maryland Section officers for 1989. Members of the committee are Merle Eiss, Harold Klapper, Ron Erickson, Ann Abeles and Al Bober, Chairman. The committee would be pleased to receive recommendations and suggestions from members.

Alan L. McClelland was born in Galesburg, Illinois and received a B.S. in general engineering from Northwestern before pursuing a Ph.D. in inorganic chemistry at the University of Illinois. After completing his degree, he served as an Instructor in the Department of Chemistry at the University of Connecticut before joining E.I. Du Pont de Nemours & Co. in 1954 where he rose through the ranks to become Assistant to the Vice President for Central Research and Development. Last September, he retired from Du Pont to accept his current position of Deputy Director in the Division of Teacher Preparation and Enhancement at the National Science Foundation in Washington.

He has been very active in ACS at the national as well as local levels. In addition to his role as Councilor for the Delaware Section, he has served on national committees on nominations and elections, education, public affairs, manpower, and professional relations. Dr. McClelland also retains membership in Sigma Xi, AAAS, Phi Kappa Phi, and Phi Lambda Upsilon.

WILL OUR SCIENCE EDUCATION KEEP AMERICA COMPETITIVE?

In recent years a spate of reports calling attention to deficiencies in science education have generated national concern, and our catastrophic decline in international trade competitiveness has added a sense of urgency to the search for remedies. Unfortunately, "The road to hell is paved with good intentions". Despite the attention and concern, there has been a remarkable lack of preciseness in defining the problems, and many of the cures proposed will only make the disease worse.

To help promote intelligent consideration of changes needed to genuinely improve the situation, the three separate populations which must be served by science and mathematics education will be defined, and the differing needs of each will be examined in detail. Several positive developments, including some in which the ACS is heavily involved, will be described, and the most pressing further requirements will be enumerated.

Finally, the reasons for the continuing decline of chemistry towards a rather trivial role in science education and the remedies urgently needed if this decline is to be stemmed will be discussed. Incidentally the continued existence of the ACS as an important professional society is intimately involved in these questions.

THE JOHNS HOPKINS UNIVERSITY

Chemistry Department Colloquium Schedule

Colloquia are held at 4:15 pm (unless otherwise noted) in Remsen Hall Room 221 on the Homewood Campus of The Johns Hopkins University. For information call Mrs. H. J. Potter at (301) 338-7421.

<i>Day and Date</i>	<i>Speaker and Affiliation</i>	<i>Topic</i>
Thursday April 7, 1988	Joseph Grabowski Harvard University	Gas Phase Anion-Molecule Reactions of Organo-Sulfur Compounds
Tuesday April 26, 1988	George A. Olah Univ. of Southern Cal.	Carbocations and Electrophilic Reactions
Tuesday May 3, 1988	Edward M. Arnett Duke University	Adventures in Flat Land - Molecular Recognition in Two Dimensions
Tuesday May 10, 1988	M. Gali Sanchez Visiting Scholar - JHU W. R. Grace & Co.	The Development of Automotive Exhaust Catalyst

APRIL MEETING



DR. ALAN McCLELLAND

SCHEDULE:

- 6:00 McDaniel Lounge
Social Hour (sponsored by Hewlett-Packard)
- 7:00 Engler Dining Hall
Dinner - Dining Porch
- 8:00 McDaniel Lounge
Student Awards Ceremony
- 8:20 Lecture
Dr. Alan McClelland
National Science Foundation
"Will Our Science Education Keep America Competitive?"

Dinner reservations should be made by mailing checks, payable to Maryland Section of ACS, to

Ms. Judy Pack
Nova Pharmaceutical Corp.
6200 Freeport Center
Baltimore, MD 21224

DATE:

Wednesday, April 20, 1988

PLACE:

Western Maryland College
Westminster
Maryland

by April 13. Late reservations may be made by calling (301) 563-6161 by April 15 (answering machine available).

Dinner price \$14.00 per person, but spouses, retired chemists and students may attend for \$12.00.

It is not necessary to be a member of the American Chemical Society to attend. You may attend the meeting without attending the dinner.

**When did YOU
last attend a Maryland Section meeting?**

TWENTY-SECOND MARM

The 22nd Middle Atlantic Regional Meeting will be held at Millersville University in Millersville, Pennsylvania (Lancaster County), May 24-26, 1988.

The meeting will include over thirty topical symposia in addition to general sessions and numerous special events, including a Pennsylvania Dutch Style Dinner featuring a show by Priestly impersonator Ron Blatchley, an awards luncheon address by Bassam Shakhshiri, a reception with ACS President Gordon L. Nelson and exhibits prepared by the Center for History of Chemistry.

Advance registration can be arranged through Dr. Richard Sasin, Roddy Science Center, Millersville University, Millersville, PA 17551; (717) 872-3411.

MARYLAND SECTION STUDENT AWARDS

Chairman Donald P. Hoster of the Student Awards Committee has announced the nominees for the ACS Maryland Section student awards for 1988. Winners were selected by their respective institutions.

The nominees will be guests of the Section at the April 20 dinner meeting at Western Maryland College where they will be recognized. Each will receive a certificate of achievement and a one year subscription to *The Journal of Chemical Education*.

The awardees, grouped by two-year and four-year colleges are:

R. Michael Anson, Anne Arundel Community College
Horace Higgins, Community College of Baltimore
Mashid Hedayati, Catonsville Community College
Charles L. Wright, Essex Community College
David R. Bittings, Harford Community College
Yoeng Soo O, Howard Community College
Kimberly Cala, Villa Julie College

Garth Thompson, Coppin State College
Annicol Marrocco, Goucher College
Elizabeth S. Bryant, Hood College
Janet C. M. Sun, The Johns Hopkins University
John A. Bridgman, Loyola College
Raphael Nwangunda, Morgan State University
Jennifer Marie Aro, Mount Saint Mary's College
Joseph F. LePage, United States Naval Academy
Virginia Eckard, College of Notre Dame of Maryland
Greg D. Dzingeleski, University of Maryland, Baltimore County
Brian G. Rowan, Towson State University
Laura Kerbin, Washington College
Brian D. Wladkowski, Western Maryland College

BIOTECHNOLOGY RESEARCH CONFERENCE

Chemical Abstracts Service will sponsor a research conference on biotechnology, October 24-25, in Columbus, Ohio. The conference, titled "Frontiers of Chemistry: Biotechnology," is designed as a forum for biologists, chemists, biochemists, bioengineers, molecular biologists and others to present and discuss their research on current problems in various areas of biotechnology.

The conference will cover topics such as protein engineering, diagnostic procedures, recombinant DNA technology, enzyme inhibitors, and drug and vaccine design and production.

Keynote speaker will be Dr. Jacqueline K. Barton, Columbia University professor of inorganic and biophysical chemistry and member of the National Science Foundation Advisory Committee on Chemistry and the metallochemistry study section of the National Institutes of Health.

Holding the conference reflects the American Chemical Society's commitment to support research in applied biochemistry and the chemical aspects of genetic engineering. The conference is also intended to help Chemical Abstracts Service determine how its services need to expand or change to meet the emerging interests of chemists.

For more information about the conference, contact Dr. Robert E. Stobaugh, Manager, Research Department, Chemical Abstracts Service, P.O. Box 3012, Columbus, Ohio 43210; telephone 800-848-6538, extension 2915.

EXECUTIVE COMMITTEE MINUTES

The Executive Committee was called to order by the Chairman, Alvin Bober, at 7:30 P.M. on December 2, 1987 in the Chemistry Reading Room of the College of Notre Dame.

The members present included: Steve Gregory, John Corliss, Hope Bober, Ray Petersen, Dr. Bruce Solnick, Howard Cohen, Mel Miller, Kristine Kirk, Sr. Denise Eby, Mike Zapf, Ann Abeles, Lena Ohanessian, Elwin Penski, Bill White, Joe DeFrank, Tim McNeese, Don Hoster, and Henry Freimuth.

The minutes were approved, with the correction of the location of the February 1988 meeting to UMBC rather than CND.

The Chairman introduced Dr. Bruce Solnick, who has agreed to serve as the Business Manager of *The Chesapeake Chemist*. Bober then asked Executive Committee members to write a brief summary of their activities for the 1987 annual report.

Treasurer's Report: The Treasurer, Joe DeFrank, reported that total receipts were \$4,272.53 for September-November 1987. Income from the dinners during this period was: \$727 in September, \$790 in October, and \$1,426 in November. For the same meetings, expenses were: \$810.81 for September, and \$1,327.70 for November. Expenses for the period totalled \$9,085.63. Included was \$2,815.85 for the National Chemistry Day activities, for which \$1,050 was donated by local companies. Expenses for *The Chesapeake Chemist* came to \$2,728.70, of which \$400 was for postage. Printing costs were \$864.50 for the September issue, \$544.01 for October and \$543.49 for the November issue. Account balances were: \$846.60 in the Signet checking account, \$7,609.77 in the Yorkridge-Calvert NOW account, and \$5,672.11 in a Certificate of Deposit at Y-C. \$6,000 was transferred to the NOW account as decided at the September meeting.

Cohen said that there is still over \$200 in the postal account and DeFrank noted that he had added \$350 to that account, which does not appear on the report. Bober stated that no advertising funds for the *Chemist* were collected for 1987, so up-dating the billing should produce some revenue there.

Awards: The Maryland Chemist Award dinner at JHU was all set, with 62 reservations. Merle Eiss received the Maryland Service Award at the National Chemistry Day reception.

Tim McNeese reported that Dr. Mildred Cohn would receive the Remsen Award on May 18, 1988.

Don Hoster sent a letter to local colleges and universities regarding Student Awards Night. This year, if a student wishes to subscribe to a journal other than the *Journal of Chemical Education*, a check for the cost of a JChemEd subscription will be awarded. With a deadline of January 31, 1988, no responses had yet been received. Hoster asked for a \$50 gift for his secretary, which was approved.

Chemical Education: Steve Gregory reported that Norm Steer had agreed to give a short course on lab safety for the Section in May or June. With support from local industry, the cost could be kept below the \$700 fee for a 3-day ACS Short Course. Attendance would be limited to 40. Several members noted that employee safety training is now required by OSHA and that larger companies have their own training programs. Bober and Gregory agreed to give all suggestions further consideration.

Program: Bill White reported that the program is set for 1988 and that Joe Topping was now assuming the job for 1989. In February at UMBC, Catherine Fenselau will be the early speaker, discussing mass spectrometry and identification of microbial organisms.

Cohen noted that for printing and mailing deadlines, scheduling meetings on the 3rd or 4th Wednesday was best. An extra set of labels could be ordered the preceding month if a meeting had to be earlier.

House: John Corliss is retiring, after many years of outstanding service. Henry Freimuth will continue to assist the new House Chairperson, Judy Pack, who will have the Section's answering machine set up to take reservations at any time.

Corliss reported that, in September, there were 53 at the dinner and 58 attended the lecture. In October, there were 71 diners with 32 at the first lecture and 68 at the second. At the November meeting, 142 attended the dinner with 116 at the lecture.

By-Laws: Elwin Penski stated that changes in the By-Laws should be considered but that no urgency was attached to the procedure. With suggestions from the Committee since the September meeting, further revisions have been made; a section was added to address the Section's financial process and dates for award nominations are specified. These are:

Maryland Chemist Award	July 1
Maryland Service Award	August 1
Remsen Award	December 1 (preceding year)

Member assistance: Merle Eiss told Bober that McCormick is looking for an organic chemist and that a position may be open for an information chemist.

Public Relations: No reports appeared in the C & E N or the local media about National Chemistry Day. National wants a report on the Section's observance of the occasion.

Membership: No report.

Publicity: No report.

Finance: Bober reported that he and Harold Klapper transferred the funds into the NOW account until a decision is reached about the best way to invest this sum. Penski's suggestion of an Investment Committee was accepted and White and Klapper will set up an ad hoc committee.

High School Activity: Zapf's proposed budget of \$650 had been approved at the September meeting. For 1988, he intends to continue to invite teachers to the meetings as guests of the Section, and to participate in the Science Fair and Science Olympiad. The High School Chemistry Teacher Award will now include a \$50 award, along with the donation of equipment by a local vendor to the school. He recommended supporting UM's Chem-a-thon rather than setting up a separate program. Don Kyle has set up 5 tours and has 20 speakers for high school students. The Women Chemists Committee will coordinate with him for the speaker's bureau.

Congressional Science Councilors: The Committee discussed the role of the Councilor. It was suggested that Alice Zeiger be contacted for suggestions about the need for such a resource person on the national level and whom to contact. White noted that his experience in Alabama was working on the local level on local issues. If no need exists, perhaps the position should be abolished. Action was deferred.

Chesapeake Chemist: Petersen reminded members to provide him with reports of all activities, especially when the Section is financing the event. The February issue is in process, and the March issue is in the preliminary stages, with a deadline of mid-January.

The new Business Manager had no report.

Archives: No report.

Anniversary: Bober distributed a proposal for a new award, the Maryland Chemist Educator, which might be given at the Anniversary celebration. After discussion, the Committee decided that this would duplicate the existing Maryland Chemist Award and the proposal was tabled.

Mel Miller suggested considering Martin's West or a similar facility rather than a hotel as the site of the dinner meeting, as a way of keeping costs down. The Levers are planning activities to reflect the history of chemistry in the area. Local companies might send an exhibit to the poster session.

Old Business: Bober inquired about having a picnic again next year. Hope Bober agreed to coordinate the planning with the Chemical Society of Washington.

The Secretary reported that 15 ballots had been received, so the 1988 officers have been officially elected. Bober said that Topping attended the Chairman-Elect meeting sponsored by National in Chicago.

New Business: The Secretary asked new officers and councilors to verify their addresses for the certification required by National.

DeFrank reported that the allotment from National was now \$8,193, up from last year.

Bober said that ACS has cited 2 Student Affiliate groups, Morgan State and Anne Arundel Community College, for outstanding achievement.

Lena Ohanessian asked for time at one of the upcoming meetings to make a presentation about the Women Chemists Committee. A spot was reserved on the agenda for the April meeting at Western Maryland.

A question arose about subsidies for spouses at the dinner meetings. Corliss reported that only 5-6 spouses attend usually. It was felt this is a good way to encourage attendance, so the current policy will continue.

The next Section meeting is Feb. 3, so the next meeting of the Executive Committee will be on January 20, 1988 at 7:30 P.M. This allows a snow date of January 27, if needed.

The meeting was adjourned at 9:20 P.M.

Respectfully submitted,

Kristine Kirk
Secretary

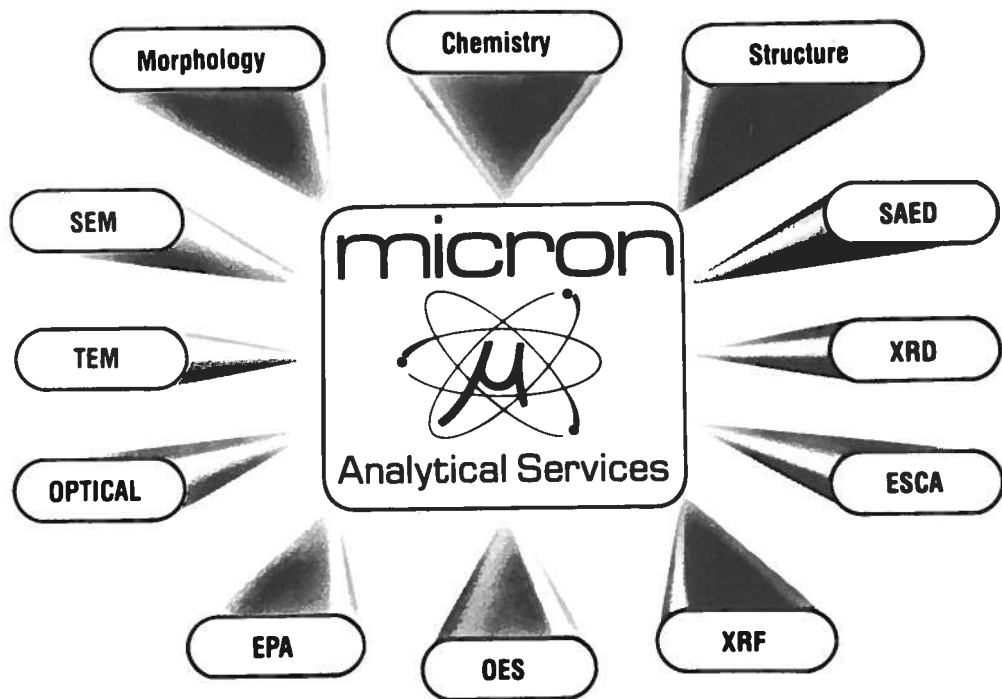
PICNIC

Plans are being made for the summer picnic to be held jointly with the Chemical Society of Washington. Belmont Conference Center is available Sunday, July 31. Mark your calendar so you don't miss this event.

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