



THE

# CHESAPEAKE CHEMIST

MARYLAND SECTION  
AMERICAN CHEMICAL SOCIETY

VOL. XLVII

MARCH, 1991

NUMBER 3



KEITH B. WARD



# THE CHESAPEAKE CHEMIST

VOL. XLVII

MARCH, 1991

NUMBER 3

## THE CHESAPEAKE CHEMIST STAFF

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

Bruce L. Solnick.....Business Manager  
P.O. Box 2355, Lab Adm.  
Baltimore, MD 21203  
225-6209

## COMMITTEE CHAIRPERSONS

Remsen Award.....Catherine Fenselau  
Chemistry and Biochemistry  
UMBC 21228

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

Maryland Service Award...Donald Jones

Student Awards.....Stephen Gregory  
College of Notre Dame  
4701 North Charles St.  
Baltimore, MD 21210  
532-5714

Women Chemists.....Linda Sweeting  
830-3058

Chemical Education and Safety.....  
435-0100 Cathy Schwab  
College of Notre Dame

Archives.....Ernest Silversmith

House.....Menyan Cheng

Member Assistance.....Merle Eiss  
McCormick & Co., Inc.  
771-7861

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

Membership.....Ron Erickson  
Nova Pharmaceutical Corp.  
6200 Freeport Center  
Baltimore, MD 21224  
(301) 563-6162

Publicity.....Donald Jones  
Western Maryland College

Finance.....Harold Klapper  
653-3351

## SECTION OFFICERS

Joseph J. DeFrank.....Chairman  
Biotechnology Div., CRDEC  
APG, Aberdeen, MD 21010  
671-3972

Stephen M. Gregory.....Chairman-elect  
College of Notre Dame  
4701 North Charles Street  
Baltimore, MD 21210  
532-5714

Alice Zeiger.....Secretary  
Center for Indoor Air Research  
1099 Winterson Rd., Suite 280  
Linthicum, MD 21090  
(301) 684-3777

Greg Erickson.....Treasurer  
6915 Baltimore Street  
Baltimore, MD 21224  
563-6167

## 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  
771-7861

## ALTERNATE COUNCILORS

Elwin Penski  
Tim McNeese

Ann Abeles  
Mike Zapf

## MEMBERS-AT-LARGE

Donald Hoster Jeanette S. Hamilton  
Dale L. Whalen Hope Corrigan  
T. Stephen Everett

*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.



Tracy Biller of Baxter Scientific has presented Mr. Pepe Sandoval of Centennial High School with the supplier award during the presentation of the Maryland Section's high school teacher award for 1990 at the Section's September meeting.

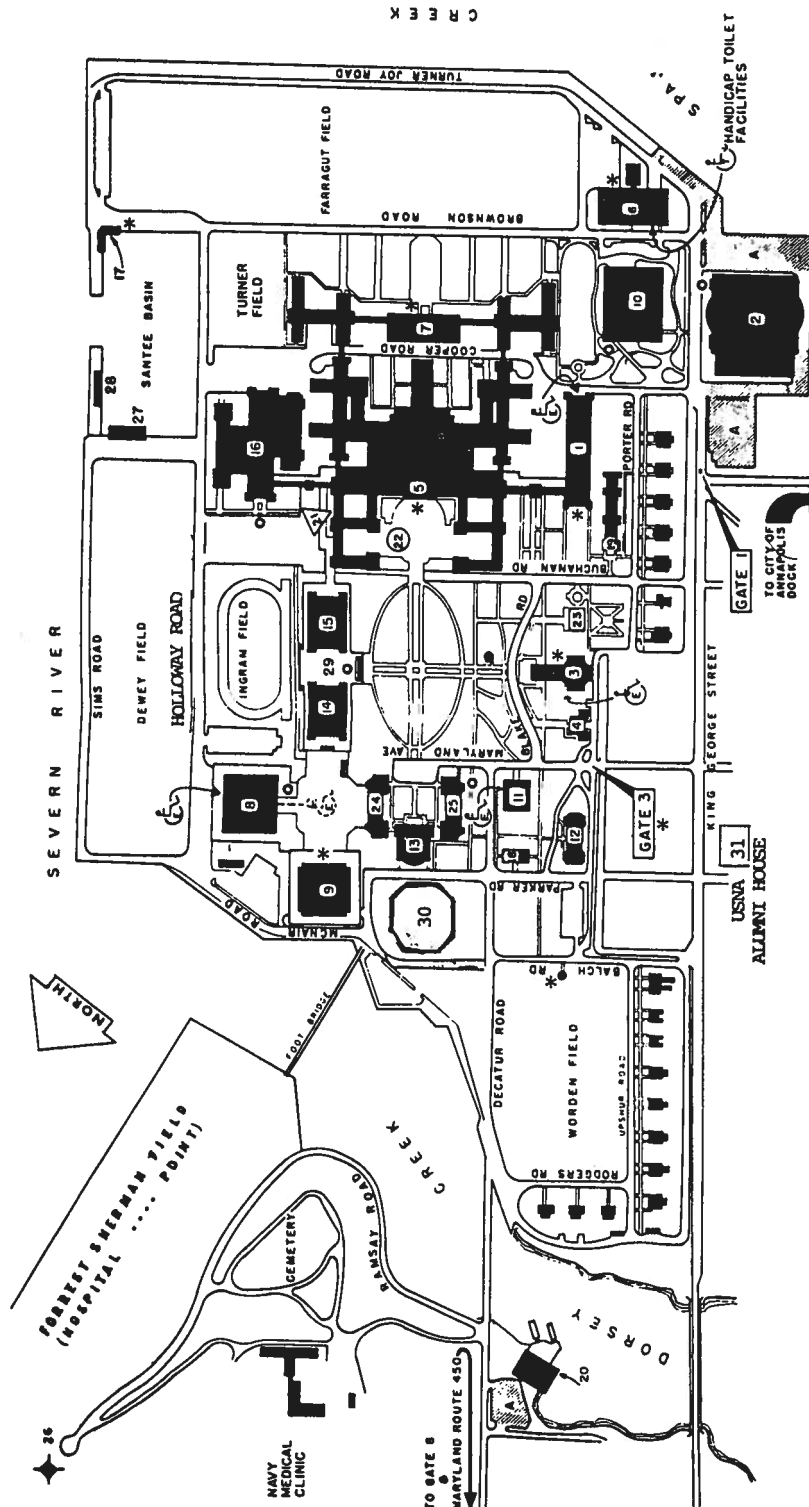
## The Johns Hopkins University 1991 Spring Chemistry Colloquium Schedule

Remsen 221, Tuesdays, 4:15 p.m.

For more information contact Rosalie Elder (301)338-7432

March 5	<b>Dr. Wayne Bryden</b> The Johns Hopkins Applied Physics Laboratory	"Vapor Deposition of Group IIIA Nitride Compounds"
March 12	<b>Dr. Richard Allen</b> Hoechst-Roussel Pharmaceuticals, Inc.	"Progress Towards Therapy for Alzheimer's"
March 26	<b>Dr. Alan Marchand</b> National Science Foundation	"Synthesis and Chemistry of Unnatural Products: From Cage Systems to Molecular Clefs"
March 28 <i>Thursday</i>	<b>Dr. John Brauman</b> Stanford	"Mechanisms and Dynamics in Gas- Phase Ionic Reactions"
April 2	<b>Dr. Debbie Crans</b> University of Colorado	"Organic Vanadates - Chemical and Biochemical Properties"
April 9	<b>Dr. Kenneth Leopold</b> University of Minnesota	"Probing the Nature of Intermolecular Interactions: Structure and Dynamics of Weakly Bound Systems"
April 16	<b>Dr. Hai-Lung Dai</b> University of Pennsylvania	"Orientation Dependence in Collision Induced Electronic and Vibrational Relaxation: A Study through van der Waals Complexes"
April 23	<b>Dr. Lawrence Que, Jr.</b> University of Minnesota	"Dioxygen Binding and Activation at Non-Heme Iron Centers"

# MARCH MEETING



**DATE:**

Wednesday, March 6, 1991

**PLACE:**

Michelson Hall, Room 117  
U.S. Naval Academy  
Annapolis, Maryland

**SPEAKER & TOPIC:**

8:00 pm  
Keith B. Ward  
U.S. Naval Research Lab.  
"Structure and Function of  
Biological Macromolecules"

**COCKTAILS & DINNER:**

Officers and Faculty Club  
  
6:00 pm Social Hour  
(cash bar)  
  
7:00 pm Dinner

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

Ms. Menyuan Cheng  
Nova Pharmaceutical Corp.  
6200 Freeport Center  
Baltimore, MD 21224

by February 27. Late reservations may be made by calling

(301) 563-6167

by March 1; answering machine is available at this number.

Dinner price is \$16.00 per person, but spouses and retired chemists may attend for \$14.00; students may attend for \$8.00.

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

**DIRECTIONS TO U. S. NAVAL ACADEMY:**

From Washington: Follow Rte 50 east; exit at Rowe Blvd. At the second stop light (Taylor Ave) turn left. Go two blocks and turn right at the stop sign. Go one block (around a curve); turn right at the first light onto Rte 450 west (King George St). Proceed straight to Gate 1 of the Naval Academy.

From Baltimore: Follow Maryland Rte 2 south. Go over Rte 50, following signs for Rte 450 south and the Naval Academy; exit toward Rte 450 S. Turn left at the stop sign onto Rte 450 S. Proceed approximately 2 miles, over the Old Severn River Bridge to the second traffic light past the bridge. Turn left onto Rte 450 west (King George St). Proceed straight to Gate 1.

From Gate 1: Turn left at the first street past the gate; turn left onto Porter Rd, right onto Buchanan Rd, left onto Blake Rd and right onto Maryland Ave. There are parking areas on Maryland Ave and on Decatur Rd. Dinner is in the Officers and Faculty Club. The lecture is in Michelson Hall.

The Officers and Faculty Club is #12 on the map and Michelson Hall is #14.

**FUTURE MEETINGS**

The annual student awards meeting is scheduled for April 10 at Western Maryland College. The Remsen award meeting is planned for May 15 at The Johns Hopkins University.

The 43rd Southeastern Regional Meeting of the ACS (SERMACS-91) will be held November 13-15, 1991 in Richmond, Virginia. For technical program information, contact Dr. Albert T. Sneden at (804) 367-1298. Abstract deadline is June 15, 1991. General papers and poster presentations are welcome.

## KEITH B. WARD

Keith B. Ward is a native of Texas, where he received a B.S. in Physics at Texas A&M University in 1965. After working at General Dynamics Corporation for two years, he entered the Johns Hopkins University, and received his Ph.D. in Biophysics in 1974. After completing postdoctoral work at the Naval Research Laboratory, he joined the Chemistry faculty at the University of Wisconsin-Parkside, where he was appointed Associate Professor in 1981. Since 1984 he has been a Research Biophysicist in the Laboratory for the Structure of Matter at the Naval Research Laboratory. There he leads a research group who use protein crystallography, molecular modeling, and genetic engineering methods to study and modify the structure and function of proteins of interest to the Navy.

### TINKER TOYS FOR BIG GIRLS AND BOYS: MODIFYING STRUCTURE AND FUNCTION OF BIOLOGICAL MACROMOLECULES

The concept that structure conveys function is an ancient one. It lies at the heart of current dogmas in modern structural biochemistry and molecular biology. Initial research aimed to understand how observed behavior of biological molecules might be explained in terms of their structure. The hemoglobins represent an outstanding example of success in this quest, and demonstrate how subtle structural differences can lead to dramatic functional consequences.

Today, techniques of molecular biology allow one to "tinker" with structures found in nature. By these means, there is now the dramatic possibility of rationally modifying biological structures at the molecular level. This protein engineering is being used both to restore proper activity to dysfunctional molecules and to create molecules with novel functions not yet observed in nature.

### EAS MAGNETIC RESONANCE AWARD

Nominations are now being sought for the 1992 Eastern Analytical Symposium (EAS) Award for Outstanding Achievements in Magnetic Resonance. The award consists of a plaque which will be presented at a special award symposium arranged in recognition of the recipient. The Award will be presented at the 1992 EAS in Somerset, NJ in November, 1992. Established in 1990, this award is designed to recognize an individual who has made significant contributions to the field of nuclear magnetic resonance. A nomination letter describing the nominee, including specific accomplishments should be submitted along with a biographical sketch by August 1, 1991. Send all materials to Chairman, EAS Awards Committee, Eastern Analytical Symposium Inc., P.O. Box 633, Montchanin, DE 19710-0633.

#### CHEMICAL ANALYSIS AND PHYSICAL TESTING

- Gas Permeation Rates
- Polymer Characterization
- Spectroscopy, AA, FT-IR, Micro
- Chromatography, LC, GPC, GC
- Thermal Analysis, DSC, TGA, DMA
- Microscopy
- CHNO • GC/MS
- Organic Method Development



444 W. County Rd. D  
St. Paul, MN 55112  
612-631-9412  
FAX 612-631-9270

#### ENVIRONMENTAL ANALYSIS

- GC/MS
- PCB/Pesticide Testing
- Organics, Purge & Trap
- Priority Pollutants
- Metals, Trace

## IMPROVING THE PUBLIC PERCEPTION OF POLYMERS

### An Initiative of the Industrial Sponsors Group of the Polymer Chemistry Division

While the average person is probably unaware of it, all known forms of life, would not exist if it were not possible to form the large molecules, that we call polymers. The range of naturally synthesized polypeptides, polysaccharides and other polymers have in recent years been supplemented by a vast array of man-made polymers, designed to make life better, safer or easier.

Imagine, if you can, what life would be like without synthetic polymers. Everything from babies' rattles to the space shuttle rely on polymers to be successful. However, a public perception has been created that most of the waste disposal problems are caused by polymeric materials. "News" reports fuel this misconception and some groups, are very vocal in their efforts to force legislation to ban or heavily restrict the use of polymeric materials. In fact, man-made polymers comprise a relatively small percentage of our solid waste and in many cases could be readily recycled.

If the general public were more aware of the nature of polymers and the benefits which accrue to society as a result of their use, there would likely be a more rational approach towards finding solutions to the environmental problems.

In order to find answers to this question and to help put the answers into action, the Industrial Sponsors of the Polymer Chemistry Division of the American Chemical Society are soliciting proposals for programs designed to create a more positive public perception of polymers. The successful proposals in this competitive process will be given a grant of up to \$10,000, generally over a three year period. The grants will be awarded on the basis of proposals from individuals or groups and may range from individual efforts to programs for group projects. The proposals will be evaluated on the basis of feasibility, impact and originality. The proposals should be as detailed as is necessary to convey the objective, approaches to be implemented, the action plan and timetable. While the amount of the award will depend upon the needs and the extent of the program, evidence of co-sponsorship, potential for cost sharing or additional funding should be included as this can effect the feasibility of the projects. Project proposals will be evaluated by a panel selected by the Industrial Sponsors coordinating committee. Proposals should be submitted on or before April 1, 1991 to:

Dr. Robert W. Stackman  
S. C. Johnson and Son, Inc.  
1525 Howe Street MS-117  
Racine, WI 53403

### JAMES FLACK NORRIS AWARD

Nominations are being received for the 1991 James Flack Norris Award for Outstanding Achievement in the Teaching of Chemistry. The Norris Award, one of the oldest national awards of the American Chemical Society, is presented annually by the Northeastern Section, and consists of a certificate and an honorarium of \$3,000.

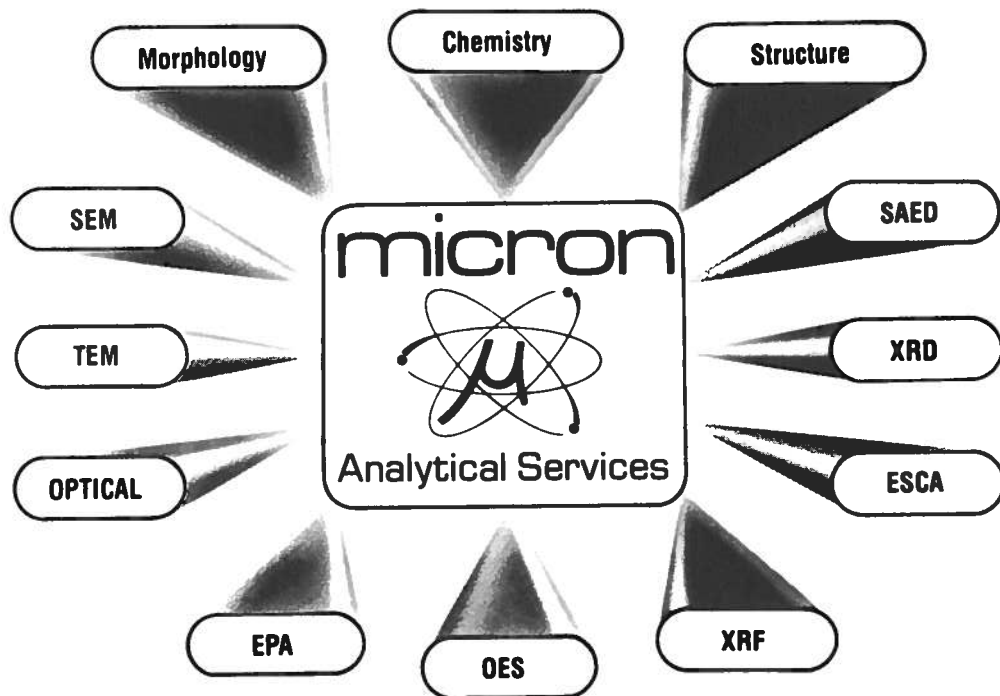
Nominations for 1991 will be received until April 15, 1991. Nominating materials must be limited to 30 pages and focus specifically on the nominee's contributions to and effectiveness in teaching Chemistry. This should include a thorough curriculum vitae with listings of honors, awards, and publications that relate to education.

Nominating materials should be sent before April 15 to Prof. Robert O'Malley, Department of Chemistry, Boston College, Chestnut Hill, MA 02167.

0117980X 454B 301 91 K  
DR YALE HOWARD CAPLAN  
3411 PHILIPS DR  
PIKESVILLE MD 21208-1827

Nonprofit Org.  
U. S. Postage  
PAID  
Baltimore, Md.  
Permit No. 2917

PLEASE DO NOT DELAY — DATED NOTICE INSIDE



3815 Lancaster Pike Wilmington, Delaware 19805  
(302) 998-1184

---

## MICROANALYSES

Analysis For All Elements, Trace Analyses,  
ICP Scans, TOX, Ion Chromatography,  
Molecular Weights.

GALBRAITH LABORATORIES, INC.

SINCE 1950

P.O. BOX 51610  
KNOXVILLE, TN 37950-1610

2323 SYCAMORE DR.  
KNOXVILLE, TN 37921-1750

(615) 546-1335

---