



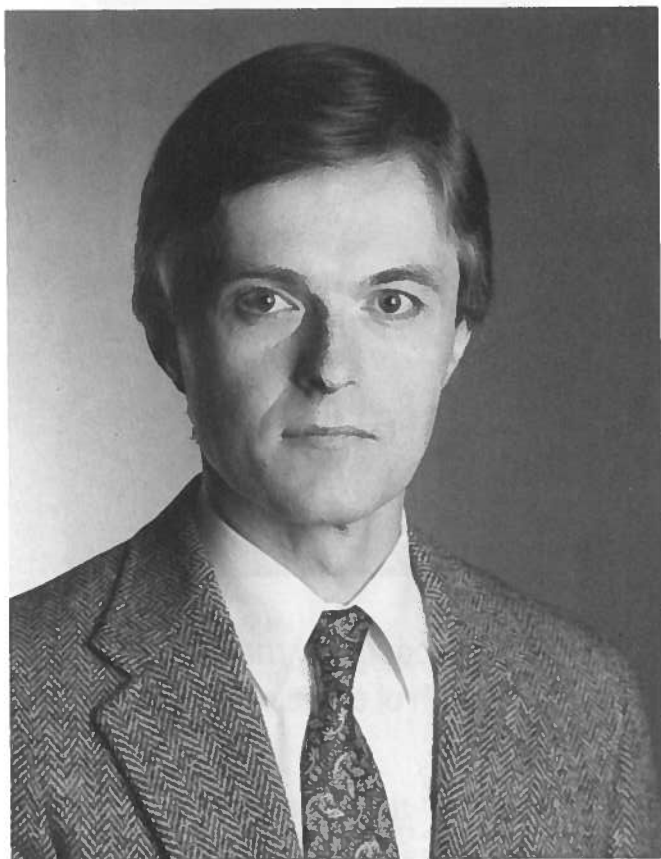
THE **CHESAPEAKE  
CHEMIST**

MARYLAND SECTION  
AMERICAN CHEMICAL SOCIETY

VOL. XLVIII

DECEMBER, 1992

NUMBER 9



*THE MARYLAND CHEMIST OF THE YEAR*



# THE CHESAPEAKE CHEMIST

VOL. XLVIII

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## CRAIG A. TOWNSEND

Craig A. Townsend is a professor in the Department of Chemistry at the Johns Hopkins University.

Dr. Townsend is an organic chemist, who received the Ph.D. degree under Professor A. Ian Scott at Yale University and completed postdoctoral studies with Professor Duilio Arigoni at E.T.H. Zurich, Switzerland. He has been a faculty member in the Department of Chemistry at the Johns Hopkins University since 1976, and is the current Chemistry Chairman.

Townsend has received several distinguished fellowships and awards including the Alfred P. Sloan Foundation Fellowship and the Stuart Pharmaceuticals Award in Chemistry.

He has made outstanding contributions to research in the biosynthesis of various classes of natural products. His work on  $\beta$ -lactam antibiotics (e.g. clavulanic acid, nocardicin, etc.) and fungal metabolites (the aflatoxins) have won him considerable recognition.

His scientific career includes service on the Editorial Advisory Board of the Journal of Organic Chemistry and as a co-organizer and co-founder of Bioorganic Chemistry Gordon Research Conference. He has presented numerous lectures on biosynthesis of natural products and has over 65 published research papers.

### $\beta$ -LACTAM ANTIBIOTICS: CONVERGENT BIOSYNTHETIC SOLUTIONS TO A COMMON BIOCHEMICAL TARGET

Central to the study of natural products biosynthesis is the recognition that the great diversity of secondary metabolites arises from a quite small number of fundamental pathways. In light of this generalization the biosyntheses of the four major classes of  $\beta$ -lactam antibiotics will be compared. Particular attention will be given to clavaminase synthase, a key oxidative enzyme in the construction of the bicyclic nucleus of the important lactamase inhibitor clavulanic acid. The latter will be examined in some detail using the tools of organic chemistry, enzymology and molecular biology. Its mechanism of action will be compared to analogously iron-dependent enzymes involved in penicillin/cephalosporin formation. The similarities and differences among these proteins and the reactions they catalyze will be discussed in the broader context of the biosynthetic strategies evident in the four principal  $\beta$ -lactam antibiotic pathways.

## ACS MARYLAND SECTION

### MEETING SCHEDULE

#### February 1993

Date: Feb. 17, 1993  
Location: Morgan State University  
Speaker: Dr. Paul Fagan  
DuPont Central Research

#### March 1993

Date: March 10, 1993  
Location: W.R. Grace  
Research Lab.  
Speaker: Dr. Ernest Eliel

#### April 1993

Date: April 14, 1993  
Location: Western MD College  
Speaker: Student Awards  
Poster Session

#### May 1993

Date: May 19, 1993  
Location: The Johns Hopkins  
University  
Speaker: Remsen Award Winner

## THE MARYLAND CHEMIST AWARD

### DATE & PLACE:

Wednesday, December 9, 1992  
University of Maryland  
Baltimore County  
Faculty/Staff Dining Area

### SCHEDULE:

6:00 Social Hour  
7:00 Dinner  
8:00 The Maryland Chemist  
Award Address  
  
CRAIG A. TOWNSEND  
Johns Hopkins Univ.  
"  $\beta$ -Lactam Antibiotics:  
Convergent Biosynthetic  
Solutions to Common  
Biochemical Target"

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

Dr. Stephen M. Gregory  
College of Notre Dame  
4701 North Charles Street  
Baltimore, MD 21210

by December 2. Late reservations  
may be made by calling

(410) 532-5714

by December 4. 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.

## 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.

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 Article II of 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	1977	Henry C. Freimuth
1963	W. Mansfield Clark	1978	Gunther L. Eichhorn
1964	Alsoph H. Corwin	1979	Emil H. White
1965	John C. Krantz, Jr.	1980	M. Gali Sanchez
1966	Belle O. Talbot	1981	Paul O.P. Ts'o
1967	Walter S. Koski	1982	Joseph L. Katz
1968	George L. Braude	1983	Shih-Yi Wang
1969	Leslie Hellerman	1984	Nicolas Zenker
1970	Paul H. Emmett	1985	John Lambooy
1971	Giles B. Cooke	1986	David F. Roswell
1972	Arnold M. Seligman	1987	Gary H. Posner
1973	Lester P. Kuhn	1988	Edward J. Poziomek
1974	Joyce J. Kaufman	1989	Catherine Clarke Fenselau
1975	Benjamin Witten	1990	Alex Nickon
1976	Richard L. Hall	1991	Cecil H. Robinson

# The Johns Hopkins University

## 1992 Fall Chemistry Colloquium Schedule

Mudd Auditorium, Tuesdays, 4:15 p.m.  
For more information contact Rosalie Elder (410) 516-7432

December 1	Dr. Robert Compton Oak Ridge National Laboratory	"The Physics and Chemistry of Carbon Clusters"
December 8	Dr. John C. Tully AT&T Bell Laboratories	"Energy Flow at Metal Surfaces: Molecular Dynamics with Electronic Transitions"

### The Thirty-First Annual Eastern Analytical Symposium

The Somerset Hilton Hotel and  
Garden State Convention & Exhibit Center, Somerset, NJ

**November 16-20, 1992**

Eastern Analytical Symposium Committee is proud to announce the following selections for its 1992 Awards:

Professor Richard R. Ernst, Federal Technical Institute, Zurich, Switzerland, is the recipient of the EAS Award in the Field of Magnetic Resonance Spectroscopy.

Ms. Lois G. Weyer, Hercules Research Center, Hercules Inc., Wilmington, DE, is the recipient of the EAS Award in the Field of Near Infrared Spectroscopy.

Professor Daniel E. Martire, Chemistry Department, Georgetown University, Washington, DC, is the recipient of the EAS Award in the Field of Chromatography.

Professor Gary M. Hieftje, Department of Chemistry, Indiana University, Bloomington, IN, is the recipient of the EAS Award in the Fields of Analytical Chemistry.

In addition to the awards listed above, 2 additional awards will be presented at the 1992 EAS Meeting. The 1992 Benedetti-Pichler Memorial Award will be awarded by the American Microchemical Society to Dr. Robert G. Michel of the University of Connecticut, Storrs, CT. The 1991 New York Section of the Society for Applied Spectroscopy Medal Award will be presented to Dr. Jack L. Koenig of Case Western Reserve University, Cleveland, OH by the New York Section of the Society for Applied Spectroscopy.

#### REMSEN STRIKES AGAIN

The 1992 winner of the Nobel Prize in Chemistry is Professor Rudolph A. Marcus of the California Institute of Technology. Professor Marcus was the winner of the Maryland Section's Remsen Award in 1991. He is the fifteenth person to win both the Remsen Award and a Nobel Prize. The fourteenth was Professor Elias J. Corey, the Remsen awardee in 1974, who received the Nobel Prize in Chemistry in 1990.

## AMERICAN CHEMICAL SOCIETY DIVISION OF POLYMER CHEMISTRY, INC. 1993 WORKSHOPS

**January 18-21, 1993: RECENT ADVANCES IN POLYIMIDES AND OTHER HIGH PERFORMANCE POLYMERS**

Organized by: Paul M. Hergenrother  
NASA Langley Research Center  
Mail Stop 226  
Hampton, VA 23665-5225  
Phone: 804-864-4270  
Fax: 804-864-8312

Location: Nugget Hotel, Sparks, Nevada (near Reno)

Sponsored by: The ACS Division of Polymer Chemistry, Inc.

THE WORKSHOP WILL FEATURE LECTURES ON RECENT DEVELOPMENTS IN THE SYNTHESIS, CHARACTERIZATION, FABRICATION, APPLICATIONS AND MARKETS FOR POLYIMIDES AND OTHER HIGH PERFORMANCE POLYMERS. THERE WILL BE AN OPPORTUNITY TO PRESENT ADDITIONAL WORK IN POSTER SESSIONS.

**February 28 - March 3, 1993: SOLID STATE NMR SPECTROSCOPY OF POLYMERS**

Organized by: Alan D. English  
Du Pont  
P.O. Box 80356  
Wilmington, DE 19880-0356  
Phone: 302-695-4851  
Fax: 302-695-8207

Alan A. Jones  
Department of Chemistry  
Clark University  
Worcester, MA 01610-1477  
Phone: 508-793-7113  
Fax: 508-793-8861

Location: Keystone Resort, Keystone, Colorado

Sponsored by: The ACS Division of Polymer Chemistry, Inc.

TOPICS TO BE COVERED AT THE WORKSHOP INCLUDE: THE USE OF NMR METHODS TO CHARACTERIZE POLYMER STRUCTURE AND DYNAMICS, MOLECULAR MODELLING AND THEORY, MOLECULAR DIFFUSION, CONCENTRATED SOLUTION BEHAVIOR, AND NMR METHODOLOGY. POSTER PRESENTATIONS WILL BE AN INTEGRAL PART OF THE MEETING AND ARE SOLICITED.

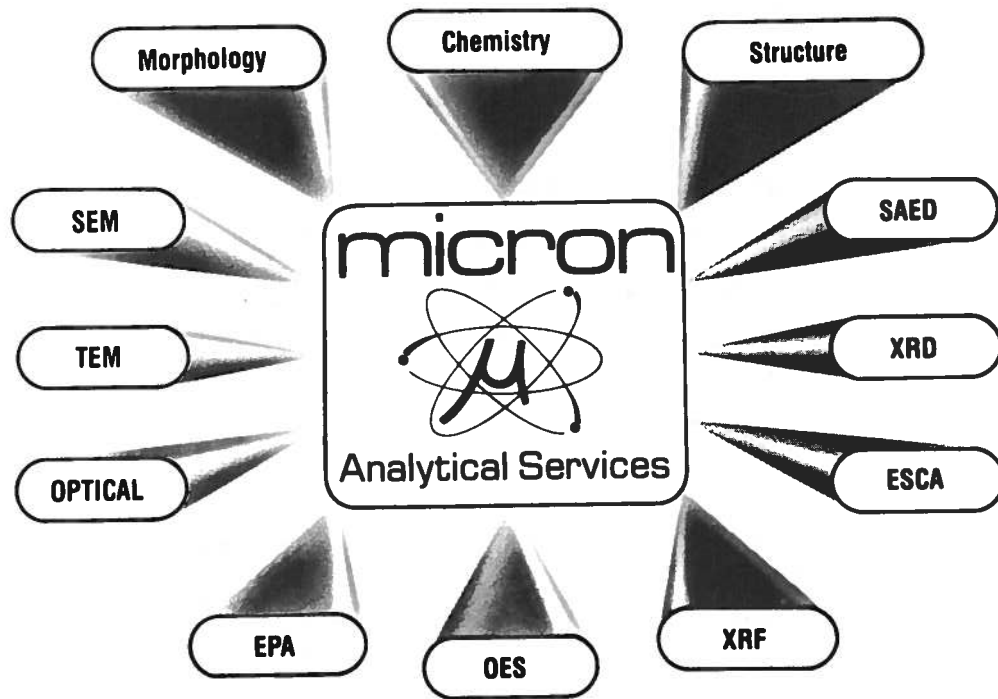
#### 1993 DUES BILL REMINDER

If you have not received your 1993 dues bill, please contact the ACS Department of Member and Subscriber Services at 800/333-9511. If you have questions concerning your membership, please call Jean Parr, Manager, Office of Member Services at 202/872-4414. *Additional Reminder:* In accordance with an ACS policy on a grace period for unrenewed ACS journals and *C&EN*, ACS cannot continue to send *C&EN* and journals after February 28 to those members whose 1993 dues and subscription payments are not received by February 1. If you have questions about your dues bill or wish to charge your payment by phone, call (800) 333-9511 or (614) 447-3600. Be sure to have your credit card handy for ready reference.

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