



# THE CHESAPEAKE CHEMIST

MARYLAND SECTION  
AMERICAN CHEMICAL SOCIETY

VOL. XLI

APRIL, 1985

NUMBER 4

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# THE CHESAPEAKE CHEMIST

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Ellicott City, MD 21043  
465-8520

Joseph Topping.....Associate Editor  
Department of Chemistry  
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Towson, MD 21204  
321-3056

Alan Harmon.....Business Manager  
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JOSEPH AND CELIA BONAVENTURA

Joseph Bonaventura married Celia Taylor in 1960. Their educational and professional careers have been unusually similar since that time. Each received a B.A. degree from San Diego State College in 1964 and a Ph.D. from the University of Texas in 1968. Both were NIH postdoctoral fellows at the California Institute of Technology in 1969 and both held EMBO postdoctoral fellowships in Rome, while Joseph also was an American Cancer Society fellow while in Rome.

The Bonaventuras joined the staff at Duke University in 1972 and in 1975 they became assistant medical research professors of biochemistry at the Duke University Medical Center and Duke University Marine Laboratory. In 1978 Joseph became director and Celia became associate director of the Duke University Marine Biomedical Center.

They are members of the Editorial Board of *Hemoglobin* and are members of several professional societies, including ACS, AAAS, Sigma Xi, the Biophysical Society and the American Society of Biological Chemists.

The Bonaventuras are co-inventors of two U.S. patents and authors of numerous papers in biochemistry with a strong emphasis on hemoglobin and related compounds. Both Bonaventuras plan to attend the meeting and one of them will deliver the lecture.



CELIA AND JOSEPH BONAVENTURA

UNDERWATER LIFE SUPPORT BASED ON IMMOBILIZED OXYGEN CARRIERS

One of the primary problems which hinders humans in their efforts to explore and develop the ocean realms is the lack of a ready supply of oxygen. Practical methods have not yet been devised for using the vast amount of oxygen dissolved in ocean waters for human life support in an undersea environment. Fish and other water-breathing animals, have, however, solved this problem. To do this, they utilize hemoglobin as a molecular oxygen pump. To achieve a similar oxygen extraction capability, we have explored various methods of oxygen extraction which are based on immobilized forms of hemoglobin. Improved methods for immobilizing hemoglobin or other oxygen carrying molecules and a method for extracting the available dissolved oxygen from natural waters and other fluids will be described. This use of immobilized oxygen carriers may also be useful for preparing blood substitutes which are capable of reversible oxygen binding under physiological conditions. The techniques which have been developed allow for immobilization of oxygen carriers at high concentration in a state where they are capable of reversible oxygen binding, and also allow for regeneration of the carrier in the event of oxidation of the oxygen-binding site. Recent advances in immobilization procedures whereby reversible oxygen carriers can be entrapped and/or covalently linked to solid supports will be discussed.

APRIL MEETING

DATE:

Wednesday, April 17, 1985

PLACE:

The College of Notre Dame  
of Maryland  
North Charles Street  
Baltimore

SCHEDULE:

6:30 Doyle Building Dining Room  
Reception  
7:15 Dinner  
8:15 Knott Science Center  
Joseph and Celia Bonaventura  
Duke University  
Marine Biomedical Center  
"Hemosponge"

RESERVATIONS:

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

John Corliss  
P.O. Box 20899  
Baltimore, MD 21209

by April 8. Late reservations may be made by calling

John Corliss at (301) 235-6612 or Nolan Phillips at (301) 939-3500 x222

Dinner price \$11.00 per person, but spouses, retired chemists and students may attend for \$9.00.

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

EXECUTIVE COMMITTEE MEETINGS

Section members are invited to attend meetings of the Executive Committee. The next such meeting is scheduled for 7:30 pm on Wednesday, May 8 at the Knott Science Center of the College of Notre Dame of Maryland.

The pages of *The Chesapeake Chemist* are also available to members who wish to comment on matters of relevance to the ACS and the Maryland Section.

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#### MARYLAND SECTION STUDENT AWARDS

Don Hoster, Chairman of the Student Awards Committee, has announced the nominees for the ACS Maryland Section student awards for 1985. Nominees will be guests of the Section at the April 17 dinner meeting at The College of Notre Dame of Maryland.

Winners will be recognized at the meeting and will also receive a scroll and a one year subscription to the *Journal of Chemical Education*. Winners were selected by criteria established at their respective institutions.

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

Christopher Galli, Anne Arundel Community College  
Laura M. Little, Catonsville Community College  
Mujgan Baykan, Community College of Baltimore  
Joseph McSharry, Essex Community College  
John A. Arthur, Frederick Community College  
Shari L. Brown, Howard Community College  
Bethany Ruckert, The Villa Julie College

Don'a Martin, The College of Notre Dame of Maryland  
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Susan Iype, Hood College  
Aleksandar Rajkovic, The Johns Hopkins University  
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#### THE JOHNS HOPKINS UNIVERSITY

#### CHEMISTRY COLLOQUIA

Colloquia are held at 4:15 pm in Remsen Hall room 221 on the Homewood Campus of the Johns Hopkins University. Refreshments are served at 4:00 pm.

DATE	SPEAKER AND AFFILIATION	TITLE OR FIELD
Tuesday April 2	Prof. John I. Brauman Department of Chemistry Stanford University Stanford, CA	Field: Structure and reactivity of ions in the gas phase
Tuesday April 9	Dr. Mel Robin AT&T Bell Laboratories Murray Hill, NJ	Field: Electronic Spectroscopy of polyatomic molecules
Tuesday April 16	Prof. Philip R. DeShong Department of Chemistry Pennsylvania State Univ. University Park, PA	"New Methods for the Synthesis of Heterocyclic Systems: Applications to Natural Product Synthesis"
Tuesday April 23	Prof. Don Truhlar Department of Chemistry Univ. of Minnesota Minneapolis, MN	Field: Theoretical chemical dynamics and scattering

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### **Guest Speaker**

Mr. Dale Rushneck, Interface Incorporated

Dr. William C. Schnute, Finnigan MAT  
*"The Efficient Environmental Laboratory:  
Improvement of Data Processing and  
Compliance Reporting"*

Dr. William H. McFadden, Finnigan MAT  
*"Thermospray LC/MS: Expanding the  
Capabilities of the Environmental Laboratory"*

Mr. Eric K. Johnson, Finnigan MAT  
*"Ion Trap Detector: A New Approach to  
Environmental Screening"*

**Bethesda, MD  
Linden Hill Hotel  
5400 Pooks Hill Road  
April 17, 8:00 to noon**

For seminar registration contact: Erna Straw (301) 948-1067

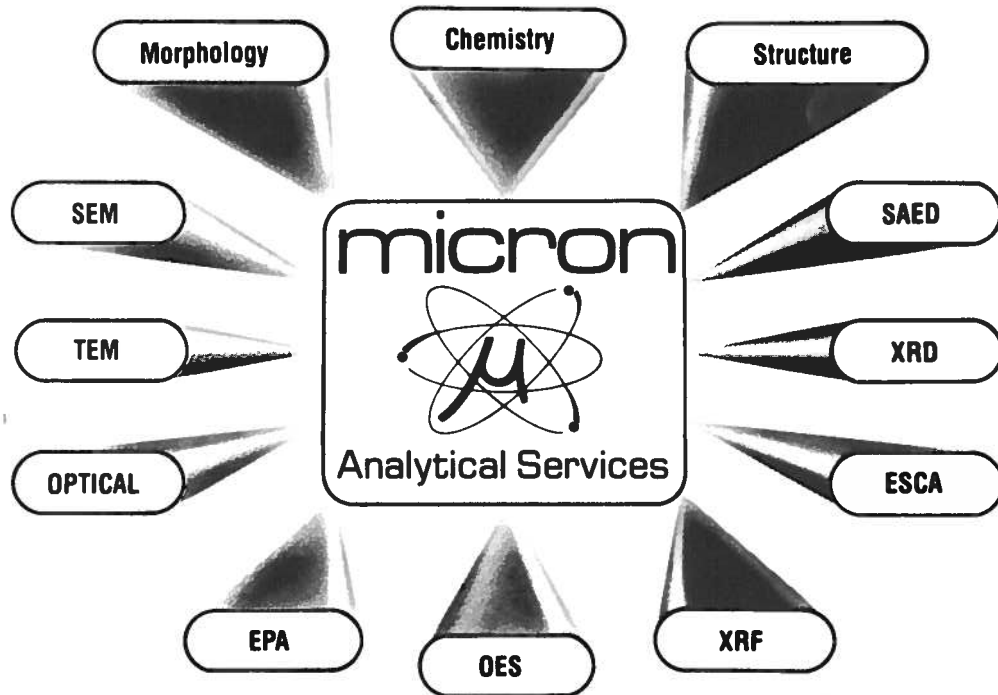


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