



THE

# CHESAPEAKE CHEMIST

MARYLAND SECTION  
AMERICAN CHEMICAL SOCIETY

VOL. LII

DECEMBER, 1996

NUMBER 9



*THE MARYLAND CHEMIST OF THE YEAR*

## MARYLAND CHEMIST AWARD

1996

Presented to

**Shekar Munavalli**

In recognition for being a dedicated and outstanding scientist; in recognition of being an enthusiastic and exceptional leader, role model, and colleague; furthermore, in recognition as an excellent but modest educator and scholar; and in grateful acknowledgement of high standards evinced for all who aspire to excellence in science and in achievement in life.

Awarded this 11<sup>th</sup> day of December 1996, with the esteem of his fellow scientists and the affection of his colleagues and associates.

### 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. Some recipients have distinguished themselves in management.

The Executive Committee of the Section has clarified the original definition of the award as follows:

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. Recommendations of the Maryland Chemist Awards Committee must be approved by the Executive Committee.

Previous recipients have been:

1962	E. Emmet Reid	1979	Emil H. White
1963	W. Mansfield Clark	1980	M. Gali Sanchez
1964	Alsoph H. Corwin	1981	Paul O. P. Ts'o
1965	John C. Krantz, Jr.	1982	Joseph L. Katz
1966	Belle O. Talbot	1983	Shih-Yi Wang
1967	Walter S. Koski	1984	Nicholas Zenker
1968	George L. Braude	1985	John Lamaboo
1969	Leslie Hellerman	1986	David F. Roswell
1970	Paul H. Emmett	1987	Gary H. Posner
1971	Giles B. Cooke	1988	Edward J. Poziomek
1972	Arnold M. Seligman	1989	Catherine Clarke Fenselau
1973	Lester P. Kuhn	1990	Alex Nickon
1974	Joyce J. Kaufman	1991	Cecil H. Robinson
1975	Benjamin Witten	1992	Craig A. Townsend
1976	Richard L. Hall	1993	Ernest F. Silversmith
1977	Henry C. Freimuth	1994	Yale H. Caplan
1978	Gunther L. Eichhorn	1995	Richard H. Smith, Jr.



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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.

## Council Meeting Report Orlando, FL August 28, 1996

The Council meeting was called to order at precisely 8:00 AM with a trumpet call by John Verkade of the Iowa Section. He has done this before but this time he used a new call. All four of your councilors were present and voting. Following this call to order, the minutes of the New Orleans meeting were approved and candidates for Council elections were introduced. These included the Nominations and Elections Committee, Council Policy Committee, and Committee on Committees.

Oral supplementary reports to those which were printed in the agenda book were heard from all of the elected officers and the Executive Director. Dr. Crum announced a new web page which would provide access to all of the Society's programs, information, publications, etc. Most of this is free but some will require payment of some type. The address for this new center is [www.ChemCenter.org](http://www.ChemCenter.org)

Steve Rodemeyer reported for the Council Policy Committee and moved that the petition to change 'chairman' to 'chair' in all ACS governing documents be approved. The Council approved it without dissent.

Val Kuck, chair of the Committee on Committees, recognized the service of councilors, committee service including committee chairs.

Nominations and Elections chair, George Heinze, reported those who had been elected to the various committees. He also moved for the committee that the Western New York Section be moved from Region III to Region I. This was passed without dissent.

Dr. Nina McClelland, the chair of Budget and Finance Committee, reported on the performance of the Society in meeting its budget. Currently the Society is \$65,000 better than the projected deficit authorized last year. Dr. McClelland also noted that there would be a planning conference in October to lay out the plans for the next several years budgets.

There is a petition for consideration only at this meeting to provide a special dues category for Post Doctoral persons. There is considerable controversy about this petition with various elements of the Society pro and con to it. The Society Committee on Education does not support it at this time. There was some talk outside the Council that it might be modified before the next meeting in San Francisco. Stan Pine, chair of SocEd, also announced that the Education Division had just received Board approval for a grant of \$286,000 to begin work on a new freshman level textbook tentatively called, 'Chemistry in a Biological Context'. An additional \$500,000 is available from publishers anxious to have such a textbook. It will be for mainstream science majors and will incorporate the pedagogical techniques similar to those used in Chemistry in Context and Chemistry in the Community (ChemCom).

Dr. Joe Dixon, chair of the Publications Committee, reported that all ACS journals will be in completely digital form within the next year. He also indicated that this part of the Society is meeting its budgetary goals. It appears that the petition to make the publications of the Society into a quasi independent company like that of Chemical Abstracts, is without any serious opposition and will be passed in San Francisco. This move will allow the Society to move more quickly to meet the rapid and serious challenges to our publications by for profit companies such as Elsevier and others.

The Maryland Section was honored with the award for being the best medium large section in programming for the year 1995. The Section was one of 5 honored.

Janan Hayes, chair of Meetings and Expositions, moved that the meetings to be held in 2007 be held in Chicago and Boston respectively Spring and Fall. The motion passed without dissent. Next year's preregistration fee was set at \$210 with a rise in 20% for on site registration.

Chuck Rowell, chair of Constitution and By-Laws, reported on upcoming changes as well as announced the final date for which petitions can be received for inclusion in the Spring agenda book.

Jim Bennett, chair of Chemical Abstracts, reported that all electronic forms of the CA were ahead of budget. He also reported that Sci Finder was again noted as one of the top 100 pieces of new software. There is to be a new version of CA tailored to work with the OCLC under a contractual arrangement. There will be new enhancements to CA on CD for easier use. He also announced that the academic discount will be maintained.

There were other reports including the addition of a new international section in Hong Kong.

Meeting was adjourned at 11:45 AM.

Donald Jones  
Merle Eiss  
Charles Rowell  
David Roswell

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### PATTERSON-CRANE AWARD

Nominees for the 1997 Patterson-Crane Award are being sought by the Dayton and Columbus, Ohio, Sections of the American Chemical Society. The biennial award, consisting of a \$2000 honorarium and a personalized commendation, is given in honor of Austin M. Patterson and E.J. Crane, previous editors of *Chemical Abstracts*.

An international honor, the Patterson-Crane Award acknowledges contributions to the field of chemical literature, especially chemistry documentation, chemical information storage and retrieval, and design, development, production, or management of chemical information systems or services.

Nominations for the award must be in writing and should discuss the nominee's contributions to the field as well as an evaluation of accomplishments. Materials supporting the nomination should include a biography and bibliography of publications and presentations. Seconding letters are required.

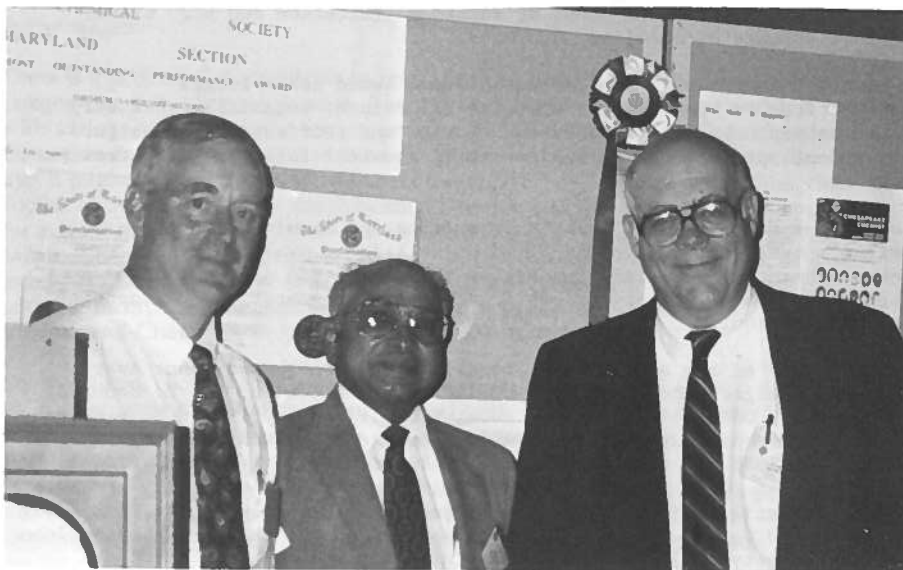
Send one copy of the nomination materials to The Patterson-Crane Award Committee, Margaret Roach, Chair, c/o ACS Dayton Section, 140 E. Monument Ave., Dayton, OH 45402-1267, for receipt by 31 January 1997. To receive an informative brochure about the award, contact M. Roach at (937) 224-8513 or 255-3005.

Nominations will be judged by a seven-member selection committee consisting of Dayton and Columbus Section members as well as the Chair of the American Chemical Society Division of Chemical Information.

The 1997 Patterson-Crane Award will be presented 13 May 1997 at an awards dinner to be held in Dayton, Ohio.

Shekar Munavalli received his B.S. (First Class Honors) and M.S. degrees in Chemistry and Organic Chemistry respectively from Karnatak University (Dharwad, India). He obtained his M.A. degree in Biochemistry from University of Kansas, Lawrence (KS). He then went on to work with Professor G. Ourisson and to earn his Doctorate and Doctor of Science degrees from the Institute of Chemistry, University of Strasbourg (currently known as Louis Pasteur University), Strasbourg, France. He spent some time at the Institute of Chemistry of Natural Products, Gif-on-Yvette (near Paris), France. For about five years, he was associated with the French National Center for Scientific Research Center. He returned to India as a Senior Lecturer in Chemistry at Karnatak University. He returned to the U.S. in the late 60s. Since then he has taught at several colleges and universities and has served as a Visiting Professor at Vanderbilt University and Meharry Medical College (both at Nashville, TN) and at Ecole Polytechnique Federale, Lausanne (Switzerland). From 1972 to 1982, he spent the summer-months as a Visiting Faculty Research Fellow at Oak Ridge National Laboratory, Oak Ridge (TN) and NASA-Langley Research Center, Hampton (VA). In 1982, he came to the U.S. Army, Edgewood Research, Development and Engineering Center, Aberdeen Proving Ground (MD) as a Senior Research Fellow of the National Research Council. Recently, he served as the Chairman of the Maryland Section of the American Chemical Society. Over the years, he has been associated with about 150 papers published and presented. Bioactive fluoro-organic compounds are his present interest. He was instrumental in the synthesis of the most irritating compound known to date and the US Army has got a patent on it. Currently, he is working as a Senior Scientist at Geo-Centers, Inc. and as an Adjunct Professor of Chemistry, Drexel University (Philadelphia).

His presentation titled, "Ali Baba's Adventures in Wonderland" will cover enzymatic metabolism of natural and unnatural pyrimidines, ribonucleotide reductase-thioredoxin reductase system, chemistry of natural products, synthesis acetyl cholinesterase activators, novel heterocyclic compounds, mechanisms of three name reactions, acid rain, free radical synthesis of cubylcubanes, trifluoromethylthiocopper and its uses and recent methods for the introduction of the trifluoromethylthio group into organic compounds.



1995 Section Chair Shekar Munavalli flanked by Councilors Dave Roswell and Chuck Rowell in Orlando.

## THE MARYLAND CHEMIST AWARD

### DATE & PLACE:

Wednesday, December 11, 1996  
University of Maryland  
Baltimore County  
Faculty/Staff Dining Area

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

Dr. Shirish Shah  
College of Notre Dame  
4701 North Charles Street  
Baltimore, MD 21210

### SCHEDULE:

- 6:00 Dinner
- 7:00 The Maryland Chemist Award Address
- SHEKAR MUNAVALLI  
Geo-Centers, Inc.  
"Ali Baba's Adventures in Wonderland"
- 8:00 Executive Committee Meeting  
All Maryland Section members are invited to attend this meeting.

by December 4. Late reservations may be made by calling

(410) 532-5712

by December 6. 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.

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## CHEMICAL HERITAGE FOUNDATION MOVES

The Chemical Heritage Foundation (CHF) has moved into its own building, once the home of the First National Bank, in Philadelphia's Historic District. The six-story building, which houses the Othmer Library of Chemical History and the Beckman Center for the History of Chemistry, is located near the Liberty Bell, Benjamin Franklin's house (now a federal museum), and Independence Hall.

As part of its relocation celebration, CHF will host a dinner on June 7th in conjunction with the 25th anniversary of the Department of History and Sociology of Science of the University of Pennsylvania. For more information contact Laurel Adelman at the Chemical Heritage Foundation, 315 Chestnut Street, Philadelphia, PA., 19106-2702. Tel: (215) 925-2222 ext. 222, Fax: (215) 925-1954.

The Chemical Heritage Foundation, established by the American Chemical Society (ACS) and the American Institute of Chemical Engineers (AIChE), had its origins in 1982. CHF seeks to strengthen public understanding of the chemical sciences and technologies, increase the flow of the ablest students into the chemical sciences and chemical process industries, and instill in chemical scientists and engineers a greater pride in their heritage and their contributions to society.

## AUDIO TRAINING KITS

The Maryland Section has a small selection of ACS audio training kits for loan. These are high quality kits on the following topics:

Statistics for Chemists  
Infrared Spectroscopy  
Scientific German  
C-13 NMR Spectroscopy

Each can be borrowed for up to one month for a small handling charge to pay for postage and insurance.

Other topics may be added in the future, depending on demand.

Contact Dr. Shirish Shah at the College of Notre Dame, phone (410) 532-5712.



31<sup>st</sup> Annual Middle Atlantic Regional American Chemical Society Meeting  
Pace University, Pleasantville, NY 10570-2799  
May 27-May 30, 1997



\* Call for Papers - Deadline: December 15, 1996

See Inside for the Technical Program.

Send abstracts to:

Dr. Sut Ahuja, Ahuja Consulting, 27 Monsey Heights, Monsey, NY 10952  
Tel/Fax 914-356-9587; E-Mail rahni@pacevm.dac.pace.edu

### ABOUT THE EXHIBIT

MARM '97 will feature an outstanding scientific exhibit which will be the center of many of the meeting's activities. The exhibit hall will be the coffee break area, tour staging area and the site of the mixers. All MARM '97 attendees will have ample reason to visit the exhibits. Exhibitors will find that MARM '97 offers a variety of exhibiting options to meet the needs and finances of any company. Call or FAX the Exhibits Chairman, Dr. Neil Jespersen, to discuss your needs and to reserve booth space.

## ACS PUBLICATIONS

The ACS has announced the availability of two new ACS publications: the second edition of *Biotechnology*, and *The ACS Guide for Chemical Spill Response Planning in Laboratories*.

*Biotechnology* is part of an Information Pamphlet Series developed by the Society's Department of Government Relations and Science Policy (GRASP). Written for the general public, this updated pamphlet incorporates scientific advances and public policy developments in the biotechnology arena over the past ten years. Other titles in GRASP's Information Pamphlet series include:

- Acid Rain;
- Chemical Risk: A Primer;
- Chemical Risk: Personal Decisions;
- Global Climate Change;
- Ground Water;
- Hazardous Waste Management;
- Pesticides; and
- Recycling

*The ACS Guide for Chemical Spill Response Planning in Laboratories* was written by the ACS Task Force on Laboratory Waste Management. The objective of this guide is to provide laboratory employees with a framework for spill response planning. This booklet is part of a GRASP handbook series that includes the following titles:

- Chemical Risk Communication: Preparing for Community Interest in Chemical Release Data;
- Informing Workers of Chemical Hazards: The OSHA Hazards Communication Standard;
- The Waste Management Manual for Laboratory Personnel;
- Less is Better: Laboratory Chemical Management for Waste Reduction; and
- Understanding Chemical Hazards: A Guide for Students

Individuals may receive one copy of the new pamphlets free of charge. To order contact GRASP by phone at 202/872-8725 or send a self-addressed label to the American Chemical Society, GRASP, Room 330, 1155 Sixteenth Street, N.W., Washington, DC 20036. Non-profit organizations may receive up to ten pamphlets free of charge. Additional copies are available for a nominal fee. For details on how to receive multiple copies, please call 202/872-4386.

## ACS CONGRESSIONAL FELLOWSHIP

The ACS Congressional Fellowship Program offers a unique experience by placing an ACS member in a congressional office to work for one year. The Fellow has the opportunity to gain first-hand knowledge of the operation of the legislative branch, make scientific and technical expertise available to the government, and forge links between the scientific and government communities. The Fellowship is available in Fall 1997.

Applications are due January 1, 1997 and must include a letter of intent, a resume, and two letters of reference. The letter of intent should be two pages in length explaining your reasons for applying and your background in science and public policy, as well as what you would seek to accomplish as a Fellow. The letters of reference are to be sent directly to ACS by their authors.

Application materials should be sent to: Congressional Fellowship Program, Department of Government Relations and Science Policy, American Chemical Society, 1155 16th Street, N.W., Washington, DC 20036.

For more information, contact Margaret Carey at 202/872-4467 or [m\\_carey@acs.org](mailto:m_carey@acs.org).

## Know Your Institutions of Higher Education and Research\*

U. S. Army Medical Research Institute of Chemical Defense  
Aberdeen Proving Ground, MD 21010-5425

### Introduction

The goal of research at the U. S. Army Medical Research Institute of Chemical Defense (USAMRICD) is to provide soldiers, sailors, airmen, and marines with medical protection against exposure to chemical warfare agents. This mission was established during World War I, the first modern military conflict in which chemical weapons--in this case mustard and chlorine gas--were used. Elements of the Army Medical Department were responsible for defense against chemical weapons during WWI. Efforts were later directed by the Gas Defense Service. Research efforts to study the effects of chemical warfare agents and to develop treatments were begun at Edgewood Arsenal (now Aberdeen Proving Ground) in 1922 with the organization of the Medical Research Division. In the early 1960's the division became known as the Biomedical Laboratory, and in 1981, two years after becoming a subordinate element of what is now the U.S. Army Medical Research and Materiel Command (USAMRMC), U.S. Army Medical Command, the organization received its present name, USAMRICD.

### Mission

With the Institute's alignment in the USAMRMC came its designation as the Department of Defense's lead laboratory for the development of medical countermeasures to chemical warfare agents. The Institute develops prophylactics, pretreatments, and antidotes, and provides instruction to protect and treat the warfighter on a chemical battlefield. While emphasis is on preventing chemical injuries, research is also directed at accelerating the warfighter's recovery and maintaining his combat effectiveness.

To accomplish this mission, scientists at the USAMRICD conduct research to characterize the effects of various chemical warfare agents, such as the blister agent sulfur mustard and the nerve agents soman, sarin, and VX, as well as selected biological neurotoxins. They seek to define the biological systems affected by the agent or toxin, and to identify any short- and mid-term consequences of exposure. By gathering and analyzing such information, USAMRICD scientists are able to explore methods of medical intervention. They evaluate compounds that can be given before exposure to prevent or lessen any incapacitating effects of the agents and test compounds for their ability to reverse toxic effects after exposure has occurred. Also, in the instance of agents that can be absorbed through the skin, such as sulfur mustard, they evaluate topical skin protectants that block penetration of the agent as well as reactive topical skin protectants that decontaminate the agent. Once possible pretreatment and treatment compounds are identified, research at the Institute evaluates their effectiveness and safety when they are given alone and in combination with established medical therapies.

The Institute's research efforts support identified medical countermeasures through their development, fielding, and integration into Army medical doctrine. This is partly accomplished through the Institute's postgraduate training of military health care providers in the medical management of chemical casualties. Efforts are also made to optimize patient care through evaluation of available information, the identification of deficiencies in chemical casualty care, and the initiation of applied research to answer these deficiencies.

### Scientific Resources

The USAMRICD has a diverse scientific staff and advanced technological capabilities. Scientific disciplines on the staff encompass virtually all of the biomedical sciences and include the physical sciences and the allied health professions. Among the technologies used in the Institute's research efforts are nuclear magnetic and electron paramagnetic resonance spectroscopy, flow cytometry,

confocal laser microscopy, electron and scanning transmission microscopy, gas chromatography-mass spectrometry, capillary electrophoresis, several electrophysiological techniques, high performance liquid chromatography, and DNA sequencing.

### Technology Transfer

Research conducted at the USAMRICD benefits not only the soldier, but also many areas of the medical research community. Results of research with treatments and pretreatments for chemical agent exposure can prove valuable in the treatment of other medical problems, such as Alzheimer's disease, epilepsy, and industrial chemical exposure. Through the Army Domestic Technology Transfer Program, the USAMRICD participates in cooperative arrangements with small and large businesses and universities by sharing government technology and resources. The government benefits from the innovations of American businesses, while American businesses benefit from the substantial resources of the Federal government.

Many U.S. companies, for example, contribute sample compounds, both experimental and commercial, to the USAMRICD for evaluation as candidate medical therapies for chemical agent exposure. In exchange, the USAMRICD provides these companies with the results of the evaluations of their compounds. These results could contain unique information that would prove valuable to the companies in the development of their products for the treatment of other illnesses.

Past accomplishments of medical chemical defense researchers at APG that have had applicability in the general medical community include significant contributions to the development of modern techniques of cardio-pulmonary resuscitation (CPR) and the definition and description of the role of lung surfactant.

**\*With a view to acquaint the members with colleges, universities and research centers located in the geographical region of the Maryland Section of the ACS, the Chesapeake Chemist will be periodically publishing short articles under this caption. Those interested in writing articles on this topic are asked to contact S. Munavalli, 700 Paige Circle, Bel Air, MD 21024, Tel: 410-838-7565 (H), 410-671-2819 (O), FAX: 410-671-3218.**

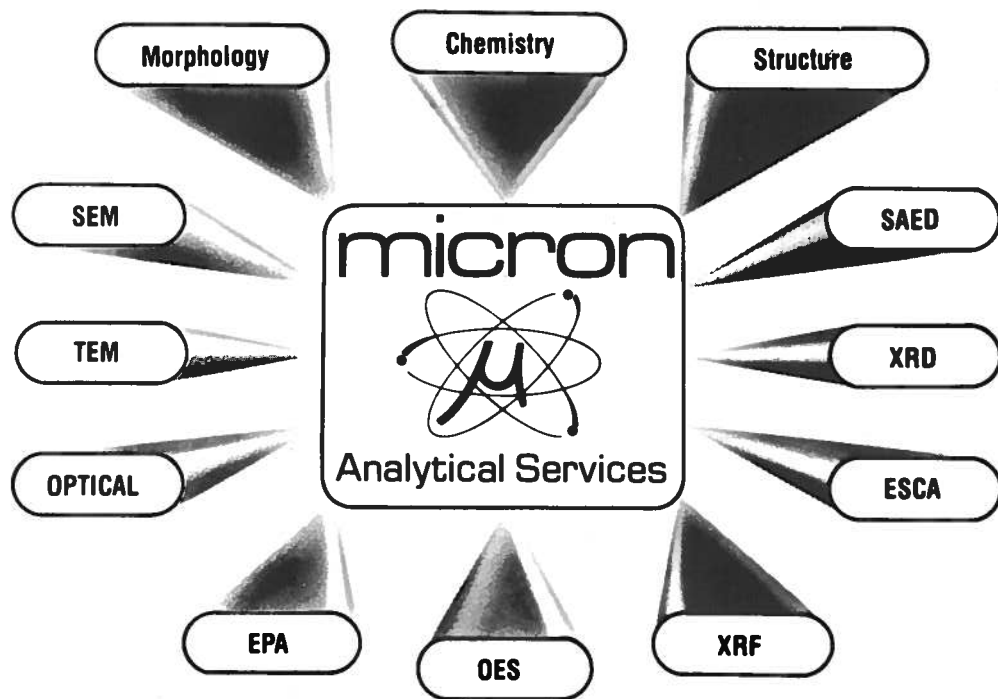


Councilors Don Jones and Merle Eiss with Shekar Munavalli at the Maryland Section's poster board in Orlando.

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#### HELP WANTED

The Baltimore Science Fair at Towson State University and the Morgan State Science and Engineering Fair will both be held in March of 1977. We will need several judges for these fairs and we can use additional support for these and other high school projects in the spring. Please call Mike Zapf for information at (410) 771-7471.

#### 1997 PROGRAM

As part of the Maryland Section's 1997 Program, we are seeking speakers who can make presentations to small groups of chemists about a popular chemical topic or technique. Please call Mike Zapf at (410) 771-7471.

E-mail MIKE ZAPF.MCCORMICK.EX.COM@NOTES.COMPUSE.RVE.COM