



# THE CHESAPEAKE CHEMIST

MARYLAND SECTION  
AMERICAN CHEMICAL SOCIETY

VOL. XXXIX

SEPTEMBER, 1983

NUMBER 6



GERALD KAHAN



JOHN KOSTINKO



CHARLES MORGAN



RALPH BLOMSTER

AWARDS

The first issue after the summer layoff is usually full of exhortations and pep talks, and the Awards Committee is hereby getting into the act by asking for more award nominations in 1983-84. There was only one new nomination for the prestigious 1983 "Maryland Chemist of the Year" award. (Fortunately, nominations from previous years provided a strong group from which an outstanding recipient was chosen.) Surely, there are others in our section worthy of consideration. The deadline for nominations is next May, but time has a way of slipping by, so start thinking about possible nominees NOW.

Our section also needs to become more aggressive about putting its members up for regional awards. Nominations for the E. Emmett Reid Award for Excellence in Teaching Chemistry at a Small College (i.e. one without a Ph.D. program) are due at the MARM Awards Chairman by January 5. Hence, your section Awards Committee needs information by mid-December. We must document the nominees' excellence in a number of areas, including research programs involving students, ability to challenge and inspire students, work in curriculum development and extracurricular work in chemistry. Dr. Reid was, after all, a Johns Hopkins professor and hence a member of our section; let's honor him by nominating one or more of our excellent teachers.

Also, there is the Buck-Whitney Medal, presented by the Eastern New York Section to recognize original work in pure or applied chemistry by a chemist whose work has not yet received national attention. Nomination must be in by March 1.

Please get in touch with the Awards Committee chairman (see page 3 for name, address and phone number) if you have a nominee and/or need additional information.

*Ernest Silversmith*

CHEMICAL ENGINEERING COURSE

The Committee on Chemical Education and Safety is planning a short course entitled "Chemical Engineering for Chemists". The course is tentatively scheduled for November 14 and 21 at 7:30 pm at the College of Notre Dame. The fee will be \$35.00 (\$17.50 for high school teachers). Registration will be limited. Linh Cheong of SCM Corp. will be the course coordinator.

Al Bober expects to release final details for publication in *The Chesapeake Chemist* for October. Prior to that time you may contact Alvin (655-5254) or Linh (355-3600 ext 208) for the latest information.

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# THE CHESAPEAKE CHEMIST

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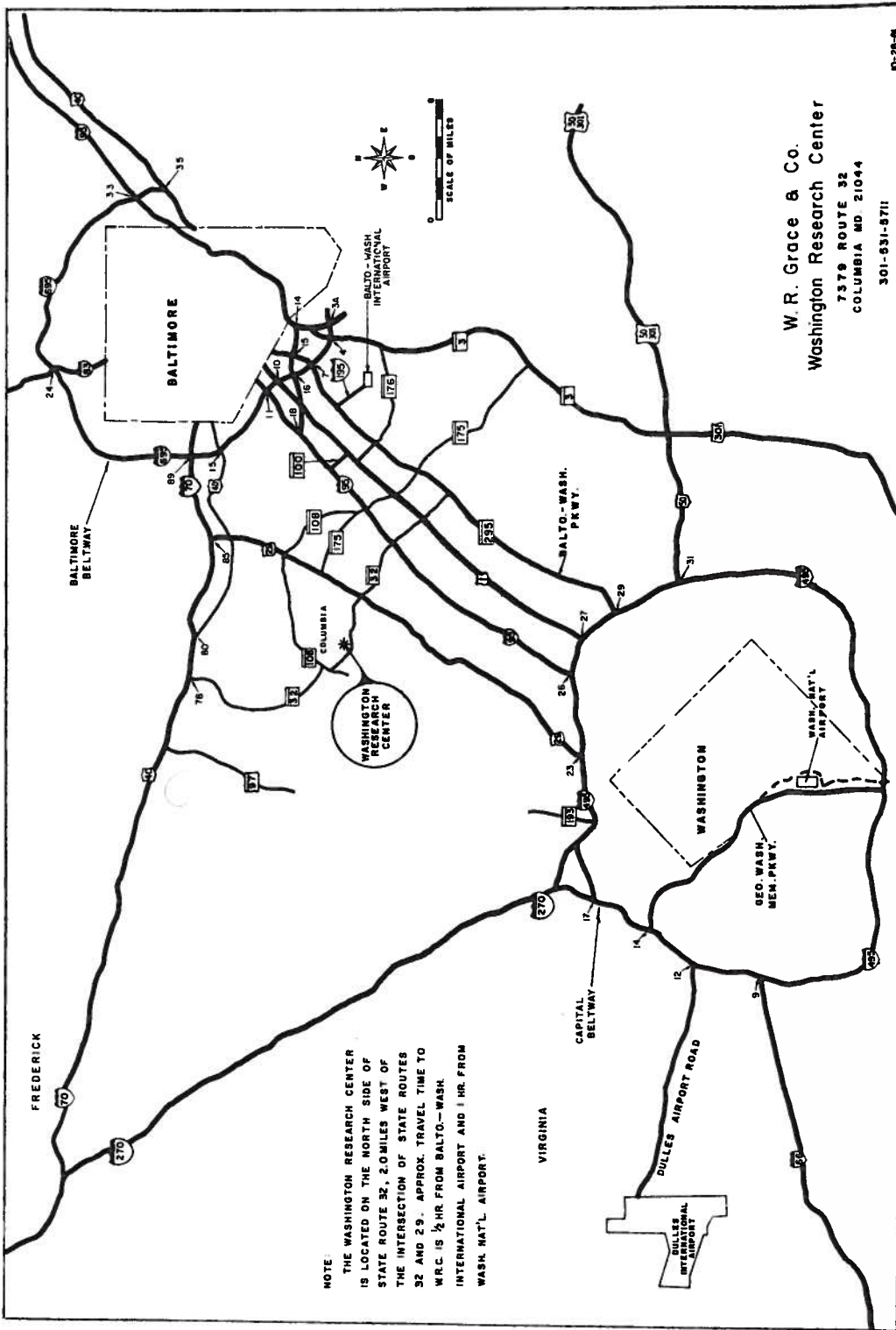
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GERALD KAHAN

TEAR OUT AND SAVE FOR LATER REFERENCE

Kahan holds a B.S. degree in chemical engineering from Clarkson College of Technology, an M.S. in food science from the University of Maryland and an M.A. from Loyola College. He has also done graduate work in nuclear engineering at the University of Maryland and in management science at the Johns Hopkins University.

At present time, he is Manager of Management Science at McCormick & Co., Inc. He has been active in engineering, research and the application of economic and statistical techniques to the food industry since 1967. Prior to joining McCormick, he worked for two years as an engineer and production supervisor for Joseph E. Seagram & Sons, Inc. He is also a part-time instructor in the Department of Business at Loyola.

Mr. Kahan's affiliations include the Institute of Management Science, the Operations Research Society of America, the Institute of Food Technologists and the American Production and Inventory Control Society. He recently organized and became the first chairperson of the Maryland Chapter of the Institute of Operations Sciences and the Operations Research Society of America.

His contributions include publications in areas of physics, statistics, food science and operations research, including co-authorship of a book on systems analysis for the food industry published in 1976.

E = MC<sup>2</sup>: PICTURE BOOK OF RELATIVITY

This talk will preview a book of the same title recently written by the speaker and scheduled for release in October (TAB Books, Inc., Blue Ridge Summit, PA).

The book presents an explanation of both the Special and General Theory of Relativity in a manner which is most likely to appeal to people interested in popular science. The book begins with a survey of the historical facts and events leading up to Einstein's revolutionary ideas. Next, a biographical sketch of Albert Einstein is provided, and a unique and novel explanation of the Special Theory of Relativity is presented for the first time. In the course of this explanation, highlights of the Special Theory are dramatized by a brief journey into the world of science fiction.

The second part of the book builds upon the first as the reader is introduced to the General Theory of Relativity. It is within the context of the General Theory that the reader learns that something as familiar and commonplace as gravity was replaced years ago by something far more subtle and abstract - the curvature of space. What follows next is an account of how these ideas were proven to be true, all presented within the framework of events which led to Einstein's rise to fame.

The remaining chapters dwell upon the scientific ideas which preoccupied Einstein in his later years: cosmology and the unified field theory. Throughout the final chapters, the reader is also treated to a brief account of Einstein's activities as a world famous figure.

JOHN A. KOSTINKO

John Kostinko is a graduate of the Pennsylvania State University and of Elmira College of New York. He is currently a section leader responsible for research and development of commercial zeolites, ion exchangers and sorbents at the Chemicals Division of the J. M. Huber Corporation in Havre de Grace.

Prior to joining Huber, John was employed by the Metallurgical Division of G. T. E. Sylvania where his research involved the synthesis and recovery of re-

fractory metal compounds. His current research has resulted in numerous patents and publications on the processing and synthesis of zeolites.

#### FACTORS INFLUENCING THE SYNTHESIS OF ZEOLITES A, X, AND Y

The synthesis of zeolite A, mixtures of A and X, and zeolite X using batch compositions traditionally expected to yield only one form of zeolite are described. The synthesis regions defined by triangular coordinates demonstrate that any of these materials may be made in the same area. The results are described in terms of the time required to initiate crystallization at a given reaction temperature. Control of the factors which can influence the crystallization time are discussed in terms of "time table selectors" and "species selectors". Once a metastable species has preferentially crystallized, it can transform to a more stable phase. For example, when synthesis conditions are chosen to produce zeolite A, the rate of hydroxysodalite formation is dependent on five variables. These variables and their effect on the conversion of zeolite A to hydroxysodalite are described mathematically.

#### RALPH N. BLOMSTER

Dr. Ralph N. Blomster was born in Lynn, Massachusetts in 1931. He received the B.S. degree in 1953 from the Massachusetts College of Pharmacy, the M.S. degree in 1958 from the University of Pittsburgh and the Ph.D. degree in 1963 from the University of Connecticut. Since 1963, Dr. Blomster has been teaching both Pharmacognosy and Microbiology, first at the University of Pittsburgh and currently at the University of Maryland at Baltimore, School of Pharmacy. At the present time, he is Professor and Chairman of the Department of Medicinal Chemistry/Pharmacognosy at that institution. In addition to his research activities in the areas of natural products, plant tissue culture, biotransformations and folklore evaluation, he is Editor of the American Society of Pharmacognosy *NEWSLETTER*.

#### PLANTS AS A SOURCE OF DRUGS

It is remarkable to what a large extent medical treatment for many centuries rested on the use of plants. Plants have given the field of medicine many useful drugs; such pharmacologic prototypes as Digitalis, Cinchona, ergot and opium, to mention only a few.

Man's first investigation of the plant kingdom was probably prompted by his dependence on plants as a source of food. From his varied observations of the effects of plants on himself, man's use of plants as arrow and weapon poisons, as hallucinogens and medicaments slowly evolved. In the early days witch doctors, apothecaries and physicians used plants to treat disease, elevate mood and relieve pain. As the art of chemistry evolved, man learned to isolate the pure chemicals that caused the medicinal effect. Opium yielded codeine and morphine to relieve pain and Digitalis provided digitoxin for the heart. Ergot made available ergonovine and ergotamine for migraine and childbirth and paradoxically the synthetic, LSD, as a hallucinogen. The presence of such a wide and diversified group of compounds has prompted the search of plants for new narcotics, heart drugs, psychoactive and anticancer compounds.

Today many drugs are produced synthetically, but some 40% of all prescriptions include compounds of natural origin.

Many diseases still cannot be effectively treated through utilization of current therapy. How does one find effective agents for these diseases? In plants there are many more compounds to work with than the chemist can ever hope to synthesize and the more than 250,000 uninvestigated higher plants on the face of the earth are a source of potential new and effective drugs.

## SEPTEMBER MEETING

#### DATE AND PLACE:

September 14, 1983  
W.R. Grace Research Center  
Rte. 32 west of rte. 29  
Clarksville, Maryland

#### SPEAKERS AND TOPICS:

5:45 John Kostinko  
J. M. Huber Corp.  
"Factors Influencing the  
Synthesis of Zeolites A,  
X and Y"

Ralph Blomster  
U. of Maryland  
"Plants as a Source of  
Drugs"

Charles Morgan  
W. R. Grace & Co.  
"Dual UV/Thermally Curable  
Polymer Systems"

8:15 Gerald Kahan  
McCormick & Co.  
"E = mc<sup>2</sup>: Picture Book  
of Relativity"

#### COCKTAILS AND DINNER:

Cocktails 6:45  
Sponsored by W. R. Grace  
Dinner 7:15

Dinner price \$10.00 per person, but  
retired chemists and students may  
attend the dinner for \$8.00

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

Nolan Phillips  
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Havre de Grace, MD 21078

by September 7. Late reservations  
may be made by calling Linh Cheong  
(x 208) or Cheryl Manger (x 358) at

(301) 355-3600

by the morning of September 12

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

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

#### CHARLES R. MORGAN

Charles R. Morgan is a Manager at the Research Division of W. R. Grace & Co. He received his B.S. in Chemistry at Penn State and his Ph.D. in Organic Chemistry at M.I.T. Dr. Morgan has worked extensively in the field of photopolymerization and is the inventor or co-inventor of 41 U.S. Patents.

#### DUAL UV/THERMALLY CURABLE SYSTEMS

Novel solventless compositions have been developed that can be cured by a combination of UV light and heat. A rapid UV cure provides a tack-free skin which gives dimensional stability and allows the coating to be handled before it is completely cured by heat. The chemistry of these dual curable systems will be discussed and the use of these materials as encapsulants (e.g., for electronic circuitry) and sealants (e.g., for automotive applications) will be described.

1983-1984 MARYLAND SECTION PROGRAM

DATE AND LOCATION

SPEAKER

September 14, 1983  
W. R. Grace Capital  
Research Center

John Kostinko  
J. M. Huber Corp.

Ralph Blomster  
U. of Maryland

Charles Morgan  
W. R. Grace & Co.

Gerald Kahan  
McCormick & Co.

October 26, 1983  
College of Notre Dame

Alan McDiarmid  
U. of Pennsylvania

November 16, 1983  
Edgewood

David Katz  
Comm. College of Philadelphia

December 14, 1983  
College of Notre

Maryland Chemist of the  
Year

February 15, 1984  
College of Notre Dame

Alan Adler  
West. Conn. State U.

The Shroud of Turin

March 28, 1984  
Aquarium in Baltimore

Aquarium Staff Member

Artificial Sea Water

April 25, 1984  
West. Maryland Coll.

Basam Shakhashiri  
U. of Wisconsin

New Ideas and Exhortations for Using  
Chemical Demonstrations

May , 1984  
Johns Hopkins

Remsen Award

A competitor is a person who spends his days, and often his nights, dreaming up ways to give your customers better service. When he finds out how, it will be your turn to find still better ways to keep your customers happy.

## MICROANALYSES

Analysis for all elements

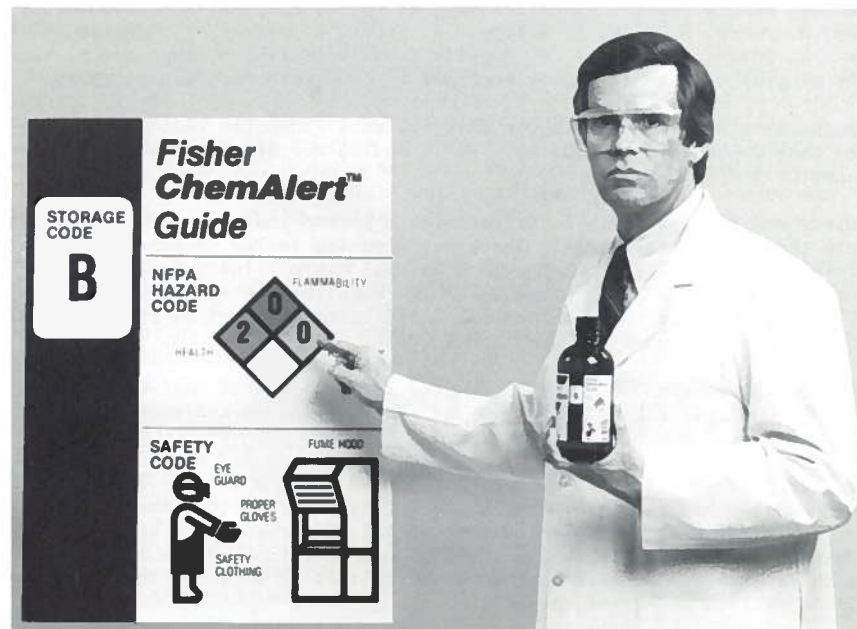
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## EXECUTIVE COMMITTEE MINUTES

The Executive Committee, Maryland Section, American Chemical Society was called to order by the Chairman, Charles Rowell, at 7:34 P.M. on Wednesday, April 27, 1983 at the Knott Science Center, Notre Dame College. The following members were present: T. Bitterwolf, H. Cohen, M. Eiss, H. Freimuth, A. Harmon, D. Jones, K. Kirk, H. Klapper, R. Kreps, C. Manger, T. McNeese, E. Penski, J. Roach, D. Roswell, C. Rowell, E. Silversmith, M. Zapf and R. Petersen. The minutes of the meeting of February 2, 1983 were read and approved.

*Treasurer's Report.* H. Klapper distributed a financial report indicating that the cash on hand is \$19,907.49. He is ending our account with the Government Investor's Trust.

*Awards and Nominations.* E. Silversmith reported that the committee members were the same as last year. There was a notice in *The Chesapeake Chemist* inviting nominations for the Maryland Chemist Award. There have been six nominations, one of which is a new one. The deadline for nominations is mid-May. C. Rowell reported that the Service Award committee will be chaired by E. Silversmith and includes D. Jones and T. Parr.

*Chemical Education.* C. Rowell reported that the course was very successful once it got started. A. Bober may only be serving as chairman of the committee until next month.

*Program.* C. Rowell reported that the Remsen Lecture on May 18 at Hopkins seems well organized. In Nolan's absence he reported that the Aquarium meeting is in March at an estimated cost of \$22.00/person. The speaker for the Edgewood meeting will talk about the Shroud of Turin. Since a large attendance is expected we will need to move the talk to a larger room. E. Penski will look into using the theater.

*House.* In L. Cheong's absence C. Rowell reported that 52 persons attended the dinner and 62 attended the lecture at the March meeting. At the April meeting 150 persons attended the dinner and lecture.

*Public Relations.* Bob Kreps reported that 3 press releases have been sent out so far and more will be released. The recipients included the *Sunpapers*, the *News American*, *WBAL*, *WLIF*, *WLRX*, *Jeffersonian*, and *Maryland Gazette*. D. Jones suggested that the *Carroll County Times* and the Frederick paper be included. H. Freimuth suggested that the *Catonsville Times* and similar papers be included. B. Kreps will ask the news release targets what the ACS can do.

*Membership.* K. Kirk has sent out 20 applications since February. We will have a 50 year member at the March meeting and a new member at the May meeting. C. Rowell sent a memo to a member of the Science Teacher's Association and was told that the teachers would like to receive copies of the *Chemist*. He suggested we create a class of membership whereby teachers could receive the *Chemist*. Dues could be \$4.00, the same as local dues. M. Zapf said that the N. Jersey section does this. A motion was made to set up a class of membership for associates who will pay \$4.00 dues. A Task Force will need to work out the details.

*Publicity.* D. Jones said that the fliers are ready to go out for the next meeting. He would like to know if there should be any additions to the mailing list.

*High School.* M. Zapf reported that there were two awards made at the Baltimore Science Fair. T. Parr was the judge and A. Harmon presented the awards to Hugo Gonzales and Ihor Lys, both of Timonium. \$50.00 in bonds were awarded. Chem Ed 83, a conference for high school teachers has asked for a donation of \$25.00. A motion was made and passed for the high school task force

to decide the issue. M. Zapf reported that Baltimore City and County and Anne Arundel County were represented at the Naval Academy meeting. C. Rowell said that a poll was taken by Tom Custer of the teachers of Anne Arundel County and they were 100% for a monthly Chemistry Club.

*Remsen Award.* C. Rowell reported that all the arrangements were set for the lecture.

*Congressional Science Counselors.* E. Penski cited the *C&E News* articles on improving science education and said that there is currently one bill in the House and several in the Senate in this area. Elwin suggested writing a letter to the Congressmen asking them to vote for funding from the Executive Committee as a whole. D. Jones described the House Bill 1310 which he has copies of, the formula for the distribution of the funding. A motion was passed for Elwin to send the letters.

*Chesapeake Chemist.* R. Petersen said that the deadline for the September issue of the *Chemist* is mid-July. He will need the ballot for the October issue by mid-August. Again it was reported that certain zipcodes are repeatedly late for *Chemist* delivery. First Class mailings were decided to be too expensive. H. Cohen suggested that we have small wallet sized cards of all the year's meetings printed and sent out. M. Eiss made a motion to print a program card to be sent out in September. The motion was passed. A. Harmon reported that \$733.30 was the cost for publishing the April issue.

*MARM.* B. Caret has resigned as chairman. Alice Zeiger is thinking about taking the position. When it is official the records will be transferred.

*Archives.* E. Silversmith reported no activity. A. Harmon said that an individual has offered the section a complete set of the *Chemist*. Ernie will accept these for the archives.

*New Business.* C. Rowell posed several questions based on responses to his letter. There were five responses. Three volunteered to help with the high school activity. The first question was: why was there nothing for chemical engineers? B. Kreps said that perhaps some were not being addressed by the topics of the speakers. D. Jones said that since the ACS is for both Chemists and Chemical Engineers we need to be sure to address both. M. Eiss suggested we try to include more Chemical Engineers in the short courses, by having courses of more interest to them. C. Rowell posed the question of whether the Maryland Section should take a position on local issues. D. Jones said that with our tax exempt status there was not too much we could do. It was also noted that National sends out opinions regularly now. Chuck then questioned whether the Section should have an advice clarification office for the local news media. T. Bitterwolf suggested a forum where opposing views are aired. M. Eiss suggested that we do it as a meeting.

M. Zapf reported that he has purchased a microphone but that he needs to work out some bugs. M. Eiss presented a petition from A. Pavlath for him to be nominated for the position of president of the ACS.

The next meeting will tentatively be held on September 14, 1983. The meeting was adjourned at 9:00 P.M.

Respectfully submitted,

Cheryl L. Manger  
Secretary

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Those with the most to say usually say it with the fewest words.

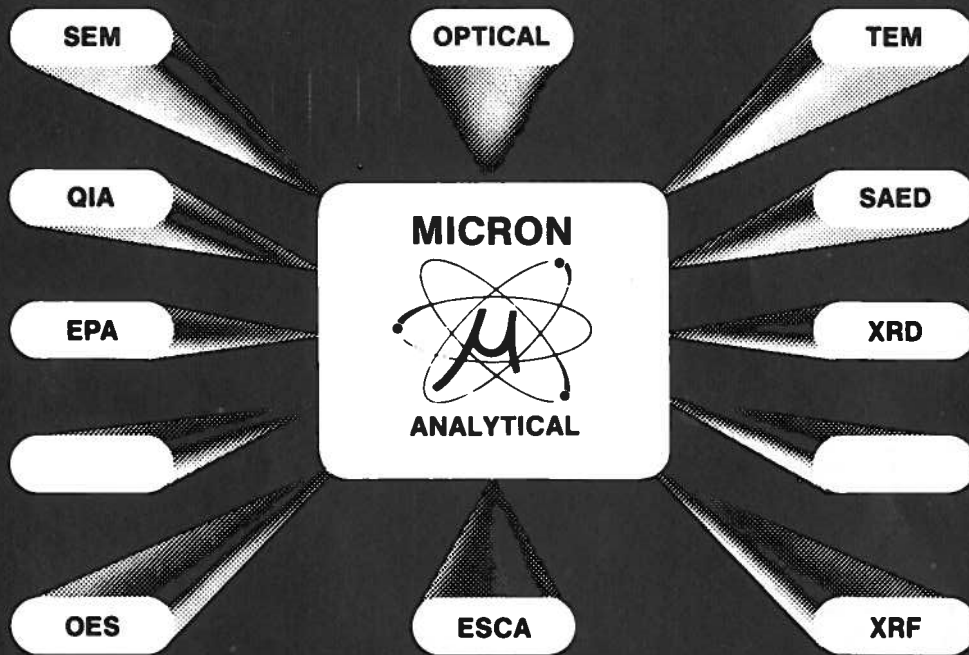
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1983-1984 MARYLAND SECTION PROGRAM

September 14, 1983 W. R. Grace Capital Research Center	John Kostlko J. M. Huber Corp.	Factors Influencing the Synthesis of Zeolites A, X and Y
	Ralph Blomster U. of Maryland	Plants as a Source of Drugs
	Charles Morgan W. R. Grace & Co.	Dual UV/Thermally Cur- able Polymer Systems
	Gerald Kanan McCormick & Co.	$E = mc^2$ : Picture Book of Relativity
October 26, 1983 College of Notre Dame	Alan McDiarmid U. of Pennsylvania	Highly Conductive Polymers
November 16, 1983 Edgewood	David Katz Comm. College of Philadel- phia	Chemistry in the Toy Store
December 14, 1983 College of Notre	Maryland Chemist of the Year	
February 15, 1984 College of Notre Dame	Alan Adler West. Conn. State U.	The Shroud of Turin
March 28, 1984 Aquarium in Baltimore	Aquarium Staff Member	Artificial Sea Water
April 25, 1984 West. Maryland Coll.	Bavam Shakhshiri U. of Wisconsin	New Ideas and Exhorta- tions for Using Chemical Demonstrations
May , 1984 Johns Hopkins	Renssen Award	