

# THE NUCLEUS

November 1996

Of the Northeastern Section of the American Chemical Society

Vol. LXXV, No. 3

## Monthly Meeting

*Norris Award to Mary  
Virginia Orna*

## National Chemistry Week

*ACS Satellite Program;  
5th Annual Undergraduate  
Chemistry Day*

## Weinberg Symposium

*Pediatric Chemotherapy: Drug  
Development*

## Book Review

*Science and the Detective*



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**Cover:** Mary Virginia Orna, O.S.U.

**Deadlines:** January issue: November 15, 1996  
February issue: December 13, 1996

## THE NUCLEUS



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# The James Flack Norris Award

for Outstanding Achievement in the Teaching of Chemistry

by M.S. Simon

When the will of Anne C. Norris was read, the Northeastern Section was informed that it was a beneficiary, with an outright gift of \$10,000 and the sharing of the residue of her estate in equal parts with the Massachusetts Institute of Technology. The will stated, "It is my wish that the Directors of said Society shall use the money in any way they may see fit to perpetuate the memory of my said husband, James F. Norris." Professor Norris had died in July, 1940, and the desire had not been satisfied for a way to honor the man who had made such a mark as teacher, confidential counselor, research scientist and personal friend during his years of teaching and

research at Simmons College and MIT. His widow's bequest in 1948 provided the impetus.

A committee under the leadership of Gustavus J. Esselen, the Section's senior adviser, was set up to explore how best to use the money. The expectation was that the income from the bequest would amount to over a thousand dollars a year, a tidy sum, and in the April 1949 *NUCLEUS* Esselen requested suggestions from the Section's members. By June he had received twelve proposals and his committee consisting of Chester M. Alter (Boston University), Theodore C. Browne (Dewey and Almy), Ernest C. Crocker (ADL), Kenneth L. Mark (Simmons), Avery A. Morton (MIT) and John O. Percival (Monsanto)

continued on page 16

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## Directions

### From Boston

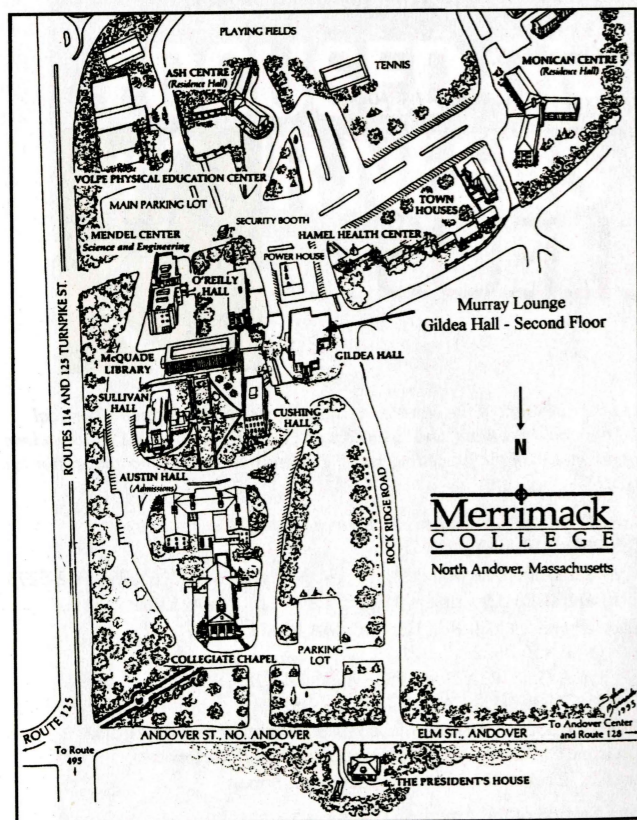
Take I-93 North to the Route 125 exit (Andover). Go North on Rte. 125 (7 miles). The route takes a left turn and as it joins Rte. 114. Turn left at the lights (on Elm St.), and enter the college by turning left into the first driveway. \*Go all the way back, and the building you will be facing is Cushing Hall. (Chemistry is on the third floor). Gildea Hall, the location for the Social Hour and dinner, is the next building to the SW.

### From Connecticut, Western Mass

From Worcester, take I-290 N to I 495 North. Follow I-495 North to Rte. 114 E, Middleton exit (27 Mi.). Go South on route 114 You will pass through a set of lights, a set of blinking lights, and two more sets of lights. Turn right (on Elm St.), and enter the college by turning left at the first driveway. Follow \* above.

### From NH, Vermont

Go South on I-93, to the I-495 North exit (Lawrence). Follow I-495 North to the Rte. 114 E, Middleton exit. Go South on route 114. You will pass through a set of lights, a set of blinking lights, and two more sets of lights. Turn right (on Elm St.), and enter the college by turning left at the first driveway. Follow \* above. ◇



## Monthly Meeting

The 783rd Meeting of the Northeastern Section of the American Chemical Society

### Norris Award Meeting

Thursday, November 14, 1996

Merrimack College, North Andover, Mass.  
Murray Lounge, Gildea Hall

5:30 Social Hour

6:30 Dinner  
McQuade Library, Auditorium

8:00 Evening Meeting, Patricia Samuel, Chairman, Northeastern Section, presiding  
James Flack Norris Dr. Edward R. Atkinson  
Introduction of the Awardee by Dr. Harold T. McCone, St. Joseph College, West Hartford, Conn.

Presentation of the Award by Dr. Kathleen Swallow, Chairman of the Norris Award Committee

Norris Award Address by Dr. Mary Virginia Orna, O.S.U., College of New Rochelle: *Doing Chemistry at the Art/Archeology Interface*

Refreshments will be served after the program.

Dinner reservations should be made no later than noon, November 7. Please call or fax Marilou Cashman at (800) 872-2054. Reservations not cancelled at least 24 hours in advance must be paid. Members, \$25.00; Non-members, \$28.00; Retirees, \$15.00; Students, \$8.00. THE PUBLIC IS INVITED. Anyone who needs special services or transportation, please call Marilou Cashman a few days in advance so that suitable arrangements can be made. Free Parking on the campus.

Next meeting on December 12, 1996, joint meeting with the Medicinal Chemistry Group, M.I.T. Faculty Club, 50 Memorial Drive, Cambridge, MA. Topic and Speakers to be announced.

## Biography

Mary Virginia Orna, O.S.U. Sister Virginia Orna, O.S.U. (Order of Saint Ursula) is Professor of Chemistry at the College of New Rochelle. She received a Ph.D. in analytical chemistry from Fordham University. She has lectured and published widely in the areas of color chemistry and archaeological chemistry. Her articles have appeared in the *Journal of Chemical Education*, *Color Research and Application*, *Studies in Conservation*, *Analytical Chemistry*, *Microchemical*

*Journal*, *Journal of Biological Chemistry*, *American Chemical Society monographs*, and various other journals. She has also authored numerous book chapters and encyclopedia articles, two books and co-edited two others. She recently edited a book on archaeological chemistry for the American Chemical Society, which appeared in March, 1996. She is active in several divisions of the American Chemical Society, having served as Chair, Program Chair and Treasurer of the Division of the History of Chemistry. She is currently serving as ACS Councilor, Program Coordination Conference Advisor, Treasurer of the

Division of Chemical Education and *ex officio* member of the ACS Examinations Institute Board of Trustees. She was Program Chair for the 14th Biennial Conference on Chemical Education which was held at Clemson University in August, 1996. She is also presently a member of the Committee on Nominations and Elections, ACS, and former Associate Member of the Society's Committee on Education, and former member of the Divisional Activities Committee and the Committee on Meetings and Expositions. She was a 1984 recipient of the Chemical Manufacturing Association's Catalyst Award for excellence in college chemistry teaching, the 1989 CASE (Council for the Advancement and Support of Education) New York State Professor of the Year and National Gold Medalist Award, a recipient of the 1989 Merck Innovation Award and of the 1996 Western Connecticut ACS Section's Visiting Scientist Award. She has presented plenary lectures and named lectureships on at least six different occasions; she is the only American invited to be a plenary lecturer at the 14th International Conference on Chemical Education, University of Queensland, Brisbane, Australia, July 19, 1996. She is presently President of "Chem-Source, Inc.", a major effort in chemistry teacher preparation and enhancement funded by the National Science Foundation, and also of Dwight D. Eisenhower Title IIA Chemical Education Programs at the College of New Rochelle over the past five summers. She held a Fulbright Fellowship in Israel (1994-95) where she lectured at The Hebrew University, The Weizmann Institute of Science and Shenkar College of Textile Technology. Her most recent overseas adventure was in Italy where she studied Italian and examined Italian medieval manuscripts. As a hobby, she enjoys constructing crossword puzzles and has been a frequent contributor to the *Sunday New York Times*, *SciQuest*, *Clinical Chemistry News*, *American Laboratory*, *Today's Chemist* and other publications. ◇

## Abstract

### *Doing Chemistry at the Art/Archaeology Interface*

The archaeological chemical rewards of spending a sabbatical year in Israel and in Italy will be discussed along with modern chemical methods used to examine both ancient and modern artifacts. The archaeological work in Israel involved analysis of ancient pigments and dyes found on excavated materials from caves in the Judean desert and the ancient fortress of Masada, and methods utilizing HPLC were developed to identify the ancient dyes on extremely small samples of fiber. Textiles from the "Cave of the Warrior" were examined for their pigment content; the kinetics of the debromination of shellfish purple was also examined and will be discussed. Much of the work to be discussed in this talk took place in collaboration with the Edelstein Center for the Analysis of Middle Eastern Textiles and Related Artifacts, the Israel Museum, the Israel Antiquities Authority and the Paper Conservation Laboratory at the Baha'i World Center in Haifa. The work in Italy involved examination of medieval artists' manuals for recipes for blue pigments which were then carried out and characterized by X-ray diffraction, chemical microscopy, single crystal X-ray analysis and Fourier transform infrared spectroscopy with some surprising results. Manuscripts written in medieval Latin, Italian and French were translated, and the surprisingly complex chemistry was carried out to yield some astonishingly complex blue materials. Additional applications of the methods of archaeological chemistry to such artifacts as a "12th century" medieval manuscript and the Shroud of Turin will be discussed, including some recent evidence that the radiocarbon date of the Shroud may not be valid. Pros and cons will be discussed. ◇

## National Chemistry Week

### *ACS Satellite Telecast: Teaching Chemistry, 1996*

As part of National Chemistry Week, the Department of Chemistry at the University of Massachusetts Lowell will host *Teaching Chemistry, 1996*, the American Chemical Society TV Satellite program to be broadcast on **Monday, November 4**. This year's topic, *Including Organic Chemistry in the Introductory Course*, will be presented by four nationally known chemistry educators with the focus on

- integrating organic chemistry into your introductory chemistry curriculum;
- investigating modules suitable for a wide range of high school and first year undergraduate courses;
- using organic chemistry to explain the conceptual and fundamental issues of chemistry; and
- incorporating organic concepts into the introductory curriculum to increase student interest in chemistry.

**Via telephone hook-up**, you will have the opportunity to ask the panelists questions, and to comment on the topics discussed. All telecast participants will receive a comprehensive seminar book. A certificate for Continuing Education Units will also be available.

The telecast will be preceded by a buffet dinner, compliments of the telecast sponsors.

Before the dinner, the Department of Chemistry will sponsor a **laboratory program** which will include both demonstrations and hands-on experiments integrating General and Organic Chemistry. Participants will have the opportunity to carry out experiments which will be discussed in the telecast.

3:30 – 4:30 Laboratory Experiments, Olney Hall, 213

4:45 – 5:45 Buffet Dinner, Olney Hall 428

6:00 – 8:00 *Teaching Chemistry, 1996*, – Ball Hall, 210

The laboratory program and the seminar telecast are for middle and high school teachers, college and university instructors, science supervisors, and anyone interested in chemistry education. The registration fee is \$10.00 per person; the registration deadline is October 25, 1996. The registration fee is non-refundable after the registration deadline.

For more information and/or registration, contact Dr. Ruth Tanner, Department of Chemistry, University of Massachusetts Lowell. Tel: (508) 934-3662; e-mail: [tannerr@woods.uml.edu](mailto:tannerr@woods.uml.edu)

### **Doings at the National Plastics Center: We get around!**

Among the activities planned with the Northeastern Section for the upcoming National Chemistry Week are Special programs at the National Plastics Center and Museum in Leominster.

In-house, the number of chemistry programs and demonstrations, both for school groups and for the general public, will be increased. Special reference will be made to National Chemistry Week, and appropriate door prizes will be offered to those in the audience for these programs on the Chemistry of Plastics.

On Saturday, November 9, all visitors will have a chance to win chemistry-related door prizes, and anyone presenting a copy of this issue of the Nucleus will be admitted free.

*continued on page 7*

### **The Fifth Annual ACS Northeast Regional Undergraduate Day**

Boston University, Metcalf Center for Science and Engineering  
590 Commonwealth Ave., Boston, MA 02215

Saturday, November 9, 1996, 9:15 a.m.

Sponsored by the Northeastern Section of the American Chemical Society in Celebration of National Chemistry Week.

Addresses: Prof. Dudley Herschbach (Harvard University)  
Dr. Charles Kolb (Aerodyne Research)

Technical talks: Prof. Rosina Georgiadis (Boston University)  
Prof. Kosta Steliou (Boston University)

Workshop: *Hands-on Chemistry with Children*  
Prof James Golen (University of Massachusetts Dartmouth)

Discussion Groups: Choosing a Graduate School  
Planning for a Career in Industry  
ACS Career Services  
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Student Affiliates Round Table

Graduate School and Industry Fair

*There will be a \$5 registration fee to cover lunch and materials. If you would like more information, or if your school or company is interested in sending a representative to the Graduate School and Industry Fair, please contact Stephen Doherty at 617-353-2503; fax: 617-353-6466; internet: [doherty@chem.bu.edu](mailto:doherty@chem.bu.edu).*

Hosted by: Department of Chemistry, Boston University, Chemia  
(ACS Student Affiliates Chapter at Boston University) ◇

### **National Plastics Center**

*continued from page 6*

Additionally, scheduled PlastiVan outreach programs to schools that week will feature special prizes and activities.

The National Plastics Center and Museum is located on Rt. 117, 2 1/2 miles west of the I 190 underpass. It is open Wed.-Sat., 11 a.m.-4 p.m.

**Charlotte, NC** – Val Wilcox, past Chair of the Section and Executive Director of the National Plastics Center and Museum, will offer demonstrations on the Chemistry of Plastics at Discovery Place, the Science Museum of Charlotte, NC, on Sunday, November 10. ◇

## Call for Papers

### **Undergraduate Research Poster Session at the 213th National Meeting of the American Chemical Society**

San Francisco, California,  
April 13-17, 1997

The ACS invites undergraduate students to submit abstracts of their research papers for presentation at the Undergraduate Research Poster Session, which will be part of the extensive programming for undergraduates at this national meeting. Send abstracts on standard ACS forms to:

## Grants-in-Aid to Undergraduates

*to attend the 213th ACS National Meeting in San Francisco, California April 13-17, 1997*

The Northeastern Section of the ACS will provide grants-in-aid of \$250 to each of four undergraduates to enable them to attend the 213th ACS National Meeting and present a paper at the Undergraduate Research Poster Session in the Division of Chemical Education. The institutions of the successful applicants are expected to match the award.

**Eligibility:** Applications will be accepted from students at colleges and universities within the Northeastern Section. The undergraduate student must be a chemistry, biochemistry, chemical engineering, or molecular biology major in good standing with at least junior status, and must be currently engaged in undergraduate research.

**Application:** Application forms are available from departmental offices and the NESACS office. The deadline for the receipt of completed applications by the Chairman of the Selection Committee is November 8, 1996.

Professor Morton Z. Hoffman  
Department of Chemistry  
Boston University  
Boston, MA 02215

**Notification:** Winners will be notified in time for them to submit abstracts to the ACS by the deadline date of **December 1, 1995**. ◇

John W. Higuchi  
Student Affiliates Program  
American Chemical Society  
1155 Sixteenth Street, NW  
Washington, DC 20036

**Deadline for receipt of abstracts: December 1, 1996** ◇

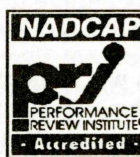
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## The Andrew H. Weinberg Symposium

by James S. Weinberg

### Background

The roots of the Jimmy Fund, the primary fund raising arm of the Dana-Farber's Division of Pediatric Oncology, date back to the Institute's origin as the Children's Cancer Research Foundation. In the 1940's, Dr. Farber achieved the first remission in children with leukemia. Since then, Dana-Farber has continued to make monumental and numerous contributions to the field, benefiting cancer patients world-wide. The Division of Pediatric Oncology is internationally recognized for its leadership in research and treatment of all childhood malignancies.

Today, nearly two of three children treated for cancer are cured. Reassuring as they are, these figures are also confounding as they remind us that one child in three will not be helped by current treatment. The Andrew H. Weinberg Pediatric-Chemotherapy Drug Development Symposium was established by my friends and colleagues in the medicinal chemistry community to help address this issue and to aid in the quest to cure one hundred percent of the patients.

### The Symposium

In 1994, my son Andrew Weinberg lost his battle with cancer, several months short of his third birthday. Andrew's death was the result of complications related to the treatment of cancer. While the chemotherapy he received brought the cancer to early remission, the drugs also compromised his immune system, and Andrew ultimately succumbed to immunosuppression-induced pneumonia.

Andrew's experience dramatically illustrates the need for more effective, less toxic chemotherapeutic agents for the treatment of childhood cancer. Since 1979 only two new oncological drugs have been approved by the Food and Drug Administration for the use in

children. A mere fourteen such drugs have been labeled for such use since 1953. Often, new pediatric drugs are "hand-me-down" from initial adult drug screens. At the National Cancer Institute, for example, none of the sixty human tumor cell lines used for screening of 20,000 new agents per year are specific for pediatric tumors.

The Weinberg Symposium was established with the goal of inspiring research directly related to pediatric chemotherapy by raising the awareness of clinicians and researchers in academia, government, and the pharmaceutical industry. The inaugural symposium, which was held at Dana-Farber last November was well attended by a diverse group of researchers and physicians representing both the public and private sectors.

Last year's speakers were Dr. Bruce Chabner, Massachusetts General Hospital, Dr. Peter Ho, Investigational Drug Branch, NCI, and Dr. Nicolas Dean, Isis Pharmaceuticals.

It is hoped that the discussions and ideas generated at this year's Weinberg Symposium will lead to improved treatment for those who battle cancer at a young age.

### Contributions can be made to

Andrew H. Weinberg Memorial Fund at Dana-Farber  
c/o M.J. Rafferty  
Director of Corporate Relations  
Dana-Farber Cancer Institute  
377 Longwood Ave.  
Boston, MA 02215-5347.

Special gratitude is also extended to: Affymax Research Institute; Amagen; Bristol-Myers Squibb Research Laboratories; Ciba Pharmaceuticals Division; International Union of Operating Engineers, Local 4; Lilly Research Laboratories; Lotus Development Corporation; Pharm-Eco Laboratories; Pfizer, Inc.; Procyon Pharmaceuticals, Inc.; Schering-Plough Research Institute; Vertex Pharmaceuticals, Inc. ◇

## Andrew H. Weinberg Symposium

### The 2nd Annual Pediatric-Chemotherapy Drug Development Symposium

Thursday, November 21, 1996  
2:00 p.m. to 6:00 p.m.

Dana-Farber Cancer Institute, Smith Family Room, Dana 1820  
44 Binney Street, Boston, MA 02115

Co-sponsored by the Andrew H. Weinberg Memorial Fund and the Medicinal Chemistry Group, Northeastern Section of the American Chemical Society

**Symposium Organizers:** James S. Weinberg, Ph.D., Holcombe E. Grier, M.D.

**Speakers:** **Peter Houghton**, Ph.D. St. Jude Children's Research Hospital: *A New Paradigm for Developing Agents for the Treatment of Childhood Solid Tumors*

**Steven Weitman**, M.D., Ph.D. The University of Texas Health Science Center at San Antonio: *New Approaches to Anticancer Drug Development for Children with Cancer*

**Ken Bair**, Ph.D. Sandoz Pharmaceuticals: *New Paradigms of Cancer Treatment Targeting Specific Cancer Molecules*

For further information please contact Jeff Salowe, Dept. of Pediatric Oncology: (617) 734-6000.

## Abstracts

### A New Paradigm for Developing Agents for the Treatment of Childhood Tumors

Peter J. Houghton, and  
Clinton F. Stewart

Childhood solid tumors, heterografted into mice (xenografts) provide a useful model for identifying new agents that may have clinical utility. The camptothecin class of inhibitors of nuclear DNA topoisomerase I represent novel agents with very significant activity against xenografts of several types of childhood solid tumors. There is minimal cross-resistance between camptothecins and the major classes of

cytotoxic agents used in contemporary therapy, however, antitumor activity is self-limiting and highly schedule-dependent.

We have optimized scheduling of two agents, topotecan and the pro-drug, irinotecan, and defined the daily exposures associated with objective tumor responses in several xenograft model systems (rhabdomyosarcoma, neuroblastoma, medulloblastoma). We introduce the concept of Determined Effective Exposure (DEE), in mice, as target for pharmacokinetically guided clinical trials. If validated, this approach has considerable potential, both for prioritizing drug evaluation, and in determining whether agents progress from phase I to phase II trials, based on the maximal exposures achieved at tolerable dose levels relative to DEE determined in the models.

### New Approaches to Anticancer Drug Development for Children with Cancer

Steven Weitman

The Institute for Drug Development and The University of Texas have developed a multi-step process to facilitate the identification and development of new agents for use in children with solid tumors. This process involves *in vitro* and *in vivo* evaluation of the newest agents under consideration for development by the National Cancer Institute and the pharmaceutical industry. This approach will hopefully improve the pediatric oncologist's armamentarium against cancer.

### New Paradigms of Cancer Treatment Targeting Specific Cancer Molecules

Ken Bair

The earliest cancer drugs were selected on the basis of their cytotoxicity. Unfortunately, these agents exhibited little, if any selective toxicity to tumor cells relative to normal cells. As more information became available on the biology of cells, specific molecules were identified within cells that are important to both growth and survival which could serve as targets for chemotherapeutic agents. Although more attention was directed to 'selectivity', the utility of these more recently developed compounds is still limited by their toxicity to normal tissue and by the development of drug resistance during chemotherapy.

In the past few years, molecular biology has provided exciting new perspectives about the differences between tumor and normal cells and identified new cellular targets that may prove useful for the treatment and eventual cure of cancer. A discussion of a paradigm shift in cancer drug discovery along with an overview of some of the new targets in oncology will be presented. ◇

## Biographies

**Peter James Houghton**, Ph.D. graduated with honors from the University of Bradford in Yorkshire England with a Bachelors Degree in Pharmacy/Pharmacology. Dr. Houghton then received a Ph.D. from the University of London, Institute of Cancer Research. He continued at the Institute of Cancer Research in Sutton, Surrey, England for a post-doctoral fellowship in the Division of Biophysics. Dr. Houghton later entered the fellowship program of the Department of Biochemical and Clinical Pharmacology at St. Jude Children's Research Hospital and has remained at St. Jude's for the ensuing 19 years. He is currently the Chairman of Molecular Pharmacology and the Leader of the Solid Malignancies Program.

**Steven Weitman**, M.D., Ph.D. graduated from the University of Wisconsin with a Bachelor of Science degree. He then received both a Ph.D. in Pharma-

cology and a medical degree at the Medical College of Wisconsin. Dr. Weitman performed his pediatric internship, residency, and hematology/oncology fellowship at the University of Texas Southwestern Medical Center. He remained there until 1995 when he moved to the University of Texas Health Science Center at San Antonio. He is currently the Director of Pediatric Drug Development for the Institute for Drug Development of the University of Texas Health Science Center. Dr. Weitman's other responsibilities include membership in the Pediatric Oncology Group, co-chairmanship of the New Agents and Pharmacology Committee of the Pediatric Oncology Group, membership in the Phase I Executive Committee of the Pediatric Oncology Group, and membership in the American Board of Pediatrics, Association for Cancer Research.

**Kenneth W. Bair**, Ph.D. attended Wayne State University in Detroit, Michigan and obtained a Bachelor of Science Degree in Chemistry, fol-

lowed by a Master's Degree in Organic Chemistry. He then received a Ph.D. in Organic Chemistry from Brandeis University. As a Damon Runyon-Walter Winchell Postdoctoral Fellow, under the direction of Prof. Jack Baldwin at M.I.T., he then worked on the total synthesis of anthracycline antibiotics. In 1978, Dr. Bair joined Burroughs Wellcome Company in Research Triangle Park, NC to pursue the development of antitumor drugs, holding positions in both the Organic Chemistry and Tumor Biology Departments. In 1992 he moved to Sandoz Pharmaceuticals Corporation in East Hanover, NJ as Director of Oncology Chemistry. He is currently Executive Director of Oncology. ◇

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## Council Meeting at Orlando, Fla.

August 28, 1996

Reported by A. Heyn

This was the first time a national ACS meeting was held at Orlando. Despite the August date, the weather treated us kindly: Only one day was hot and there was some rain, including a thunderstorm Wednesday night, just as many of us were sitting in the respective planes, waiting to take off for home.

We also came to appreciate the distances in Orlando: On the map the Convention Center is right next to the Omni Rosen Hotel, the ACS meeting headquarters, and "just across the street" from the Peabody Hotel. But, "you can't get there from here!". A number of those staying at these two hotels had to take a cab to the "nearby" Convention Center because one had to go around fences which made what would be a few steps into a 10-15 minute walk.

At the Council Meeting, in addition to the reports of the officers of the Society, Joseph Dixon, the retiring chairman of the Society Committee on Publications, gave a progress report on the status of the new Governing Board of Publications, which for now has been established on an *ad hoc* basis. This Governing Board will have responsibility for business aspects of the publications and publishing activity of the Society, while the Council, through a new Joint Board-Council committee (to be established) will have editorial oversight, such as over the appointment of editors.

On other publication matters Joe Dixon reported that:

1. By now all of the Society's journals are produced digitally.
2. The *J. Phys. Chem. and Environ. Sci. & Technol.*, and soon to follow *Biochem.* are available on the Internet. Currently about 7,000 pages of these two journals are being viewed daily on the Internet.
3. The *J. Phys. Chem.* is to be divided into two separate sections: A. Con-

densed Phase, B. Gaseous Phase. Indices and abstracts for both sections will be listed in each of the sections.

The Membership Affairs Committee (MAC) reported that as of July 31 there were 148,451 members in the Society.

Only one petition for amending the Constitution and Bylaws was "for action": To change the designation "chairman" and its several composites to "chair". The Council overwhelmingly approved this change. As a result, if approved by the Directors, the next printing of the ACS Constitution and Bylaws will be modified accordingly. Local Section and Division bylaws will be modified as they come before C&B in the normal review process.

Other matters which required a vote by the Council:

(a) Setting registration fees for the 1997 national meetings (\$210 for pre-registration of ACS members, up from \$ 200), with corresponding increases for other categories. Passed overwhelmingly.

(b) In order to keep the membership count in the regions within the limits specified in Bylaw V, the Western New York Section is to change from Region III to Region I (our Region). Approved unanimously.

(c) Chartering a new Local Section, the California Los Padres Section, consisting of some 500 members in three counties NW of Los Angeles. The Southern California Section which included these counties approved the request and the Council approves.

(d) The Council voted unanimously to approve chartering a new International Chemical Sciences Chapter in Hong Kong.

The following Councilors/Alternate Councilors represented the Northeastern Section at the Council meeting: Michaeline Chen, Catherine Costello, Thomas Gilbert, Arno Heyn, Esther Hopkins, Doris Lewis, Truman Light, Janet Perkins, Dorothy Phillips, Alfred Viola.

These representatives voted in favor of all of the above items, except that A. Heyn and T. Light voted against the Chair[man] change, and A. Viola abstained from voting on the increase in the meeting registration fee for 1997.

The following reported on their other activities at the Orlando meeting on behalf of the Council or the Society:

M. Chen, a member of the International Chemical Sciences Chapter Subcommittee of the International Activities Committee, reported that there is an interest in establishing Chapters in Germany, and also in Taiwan.

C. Costello is a member of both the International Activities and the Constitution and Bylaws Committee and participated in their meetings.

T. Gilbert, as a member of the Meetings and Expositions Committee, participated in site selection panels for future meetings.

A. Heyn attended the meeting of the Local Section Activities Committee (LSAC) as a Committee Associate and participated in its subcommittees on Annual Reports and on Special Projects. The latter is, in effect, the C&B subcommittee of LSAC, in addition to other duties. He also attended part of the meeting of the Constitution and Bylaws Committee as a guest.

E. Hopkins was reelected to the Council Policy Committee and also attended its meeting.

T. Light and Arlene again were volunteers at the National Employment Clearing House where some 800 candidates were registered, as well as 200 employers (about 400 job openings). Ted and Arlene assisted candidates with various aspects of job searching, such as using ACS resources and videos. Ted also attended a meeting of the Copyrights Committee as a guest.

D. Phillips, a member of the Membership Affairs Committee (MAC), reported that MAC is considering the proposed revival of the "honorary Member" status. This idea was proposed by Ronald Breslow,

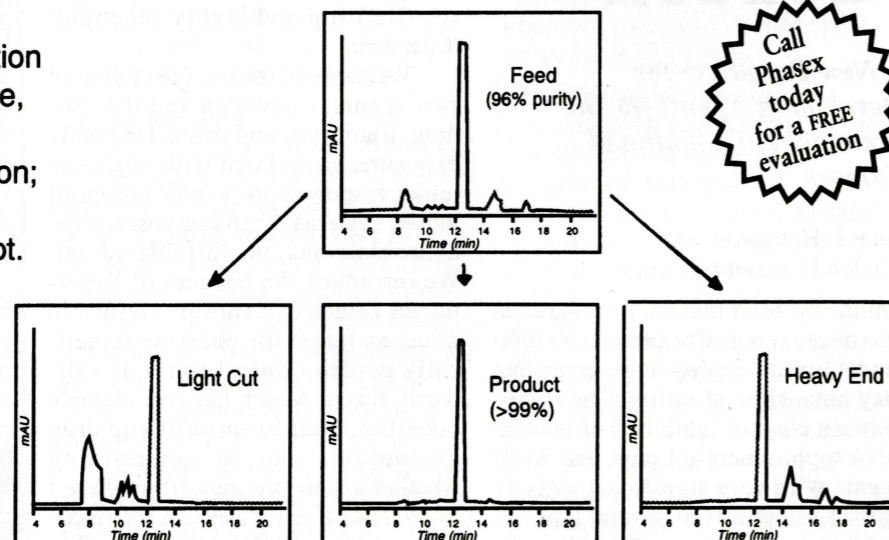
*continued on page 12*

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## Council Meeting

continued from page 11

President of the ACS, in order to be able to confer this status on a few non-chemists who are important to the Society. MAC formulated some ground rules on basis of which a petition can be formulated for amending the Constitution and Bylaws. MAC also explored Life Membership in the ACS. This is to be considered further in order to resolve such matters as: Life Member dues – fixed amount, or a sliding scale on basis of age. MAC also recommended that the petition, which is currently “for consideration” be referred back to MAC in order to resolve several concerns.

A special feature, viewed by a few of us at the Peabody Hotel: The daily escorting of several ducks to and from their roost in the penthouse via elevator and over a red-rug to the fountain in the lobby where they spend their day. This is a Peabody Hotel trademark, both in Orlando and the Memphis Peabody. ◇

### NES LOCAL DUES

When you receive your ACS dues bill there will be a line for the optional Local Section Dues. We ask you to include the Local Section Dues with your payment to the ACS. 85% of the NES Budget comes from Donations, Local Dues and Advertising Revenue. Only 15 % comes from your National Dues.

Your Local Dues Funds helps the NES to provide many services that you and other NES members want. Such services as:

Conferences covering topics of general interest.

Meetings and conferences on new technology.

Promote science and chemistry through schools.

The Nucleus which goes to 5000 NES members.

The last readership interest survey we did of Nucleus readers told us that “you” want more Nucleus coverage and an expansion of Section activities. We would like to provide it. So -- Please

Assist us by including your Local Section Dues with your ACS dues payment.

## Book Review

### *Science and the Detective* by Brian H. Kaye

VCH Publishers, Inc., 1995, 388 pp. \$79.95 hard cover

Reviewed by Dennis J. Sardella (Dept. of Chemistry, Boston College)

As an inveterate fan of courtroom and detective novels, I have always been intrigued by the array of techniques forensic scientists can deploy in investigating crimes, and have often wanted to know more about the science involved, particularly the chemistry. A recent *New Yorker* article on forensic geology rekindled my desire, so that I turned with great interest to *Science and the Detective* when it came across my desk. Written by Brian H. Kaye, a professor of physics at Laurentian University, and subtitled *Selected Readings in Forensic Science*, the book covers a wide range of topics and offers a general overview of the field. In twelve chapters, it surveys the topics of finger-, foot-, tire and pen prints, document analysis, dust, ballistics, explosives, electronic surveillance, odors and olfactronic signatures, drugs, toxins, forgery and fraud, forensic pathology and anthropology, and genetic fingerprinting. To someone who knows little about forensic science beyond what appears in the usual detective novels, (the book is written for readers who are assumed to know essentially nothing about science) it offers a broad introduction to everything from fingerprint analysis to DNA fingerprinting. This is the book's strength. This very comprehensiveness is, paradoxically, also its weakness, since it attempts to achieve this breadth of coverage in slightly less than four hundred pages.

The two chapters on finger-, foot- and tire prints describe an impressive range of techniques for visualizing them, ranging from microbiological (growing bacteria selectively on fingerprints) to chemical (ninhydrin and radioautography) to physical (laser-induced fluorescence of fingerprints and visualizing footprints in carpeting by triboelectric charging). Equally

interesting are the methods being developed to store and compare them, such as diffraction-based optical methods analogous to X-ray crystallography and computer-based parallel processing. Dust and fiber analysis are covered more briefly in a separate chapter, as are ballistics and the analysis of gunshot and explosive residues.

The chapter on surveillance methods (voiceprint analysis, infrared cameras, and speed detection) was disappointingly brief. I would have especially liked to learn more about computer-based image processing; the description did not convey enough information to be informative about how the method worked.

I liked the chapter on odors and the use of gas chromatography to attempt to develop olfactronic signatures (“synthetic bloodhounds”), but thought a lot more could have been done with the material. A section on the chemistry of the odors of onion was clear but seemed unnecessarily elaborate. Nearly half the figure could have been eliminated since it was never alluded to in the text. This was one case where less would have been better.

Two long chapters on drugs, toxins and environmental hazards were clearly and interestingly presented, although, as a chemist, I found the dearth of chemical formulas disappointing. For instance, in the section on drugs and athletes, it is surprising that not a single structural formula is presented. Also, it is unfortunate that both Figures 9.1 and 9.2 bear the caption “Figure 9.2.”

The longest chapter in the book deals with forgeries and frauds of various types. It begins with clearly written sections on papers, inks and toners, that make a good introduction to a subsequent discussion of counterfeit

bank notes, checks and postage stamps. This is followed by presentation of some high-profile cases of “fraud,” including Piltdown Man, the Shroud of Turin, the fossil *archeopteryx*, which is considered evidence for an evolutionary link between dinosaurs and birds, and the infamous David Baltimore case. Unfortunately, Kaye is rather uncritical in not distinguishing between clear cases of fraud or falsification (Piltdown Man and the Shroud), those which are alleged, but not completely proven (*archeopteryx*) and those which are questionable, at best. Certainly, Kaye's sermonizing seems intemperate in the face of the recent *New Yorker* article on the Baltimore case and the recent federal appeals panel report clearing him and Tereza Imanishi-Kari of any wrongdoing.

This chapter was perhaps the most disappointing to me, because the cases were presented so briefly that most of the details and nuances were lost. For instance, Kaye uses the Dreyfus Affair in conjunction with a discussion of forged handwriting, yet the case is presented so sketchily that its significance never becomes clear. How can one discuss this case meaningfully without at least mentioning the involvement of the French General Staff, the blatant anti-Semitism that underlay it, or the contribution of Emile Zola? He also creates the impression that the evidence of forgery comes only from the recently developed technology, whereas the forgery was so blatant and crude as to have been evident even at the turn of the century. Perhaps the perfunctoriness was dictated by space concerns, but it nonetheless represents a missed opportunity.

The book ends with a chapter on forensic anthropology and entomology, which I found fascinating, and a brief one on genetic fingerprinting.

Kaye is at his strongest when describing physical methods of detection, particularly optically based ones. Scientifically, the weakest parts of the book are definitely those dealing with chemistry, most of which do not go much beyond vocabulary. Structural

formulas are often incorrectly drawn, and there are not many of those. Some chemical information pops up at incongruous places, as when, in the middle of a brief section on radiochemistry, Kaye inserts a figure of the periodic table, with no further mention in the text than “As scientists' knowledge of the elements of the universe increased, they arranged them in a table, as shown in Table 2.”

Kaye's writing style, while generally lucid, is not fluid, and is often rather impersonal. His habit of introducing people by last name only, a carry-over from technical writing, appears odd in a popular book. The book features numerous block quotations which are almost invariably introduced by some formula such as “X has stated” or “Y makes the following statements.” This often interrupts the flow of the text and seems a bit slavish. Kaye also devoted a great deal of attention to the etymology of technical terms, which occasionally becomes tedious. There is an unfortunate number of typographical errors and misspellings (for instance, “Isle of White” for Isle of Wight, “Eva Brown” for Eva Braun, “Desraile” for Disraeli, “Gerber” for Geber, and “Nantick” for Natick Labs, to choose five of the most egregious).

Overall, “Science and the Detective” is an interesting and fairly entertaining introduction to forensic science. While realizing that the book was written for non-scientists, I think the scientific principles underlying many of the techniques could have been presented at a higher level which would have raised intelligent readers' scientific literacy without unduly taxing or alienating them. The hard cover price seems forbiddingly high, considering that the book does not really qualify as a monograph. ◇

### Northeastern Section Homepage

<http://www.tiac.net/users/obermayr/neacs>

## Summerthing 1996

At Lowell, Mass.

By Mary Burgess and  
Ted and Arlene Light

Almost forty people attended the Summerthing program at Lowell National Historical Park on Saturday, August 17, 1996. The group met at the Visitors Center at Market Mills, the former Lowell Manufacturing Company mill complex. There they viewed exhibits and the slide show, *Lowell: The Industrial Revelation*, which explored the history and growth of the textile industry in the Lowell area.

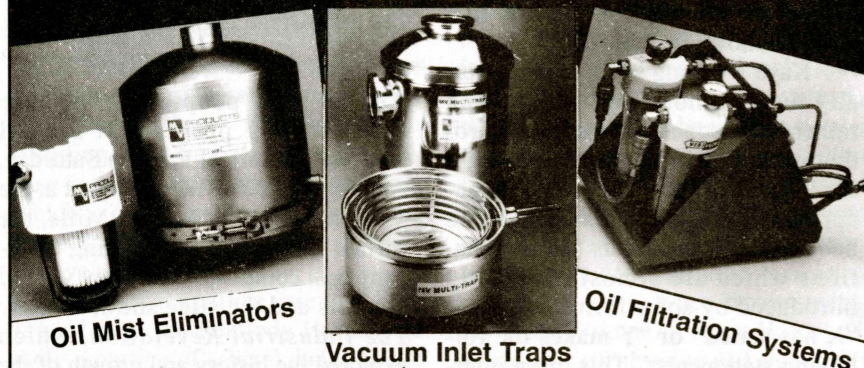
The group then rode a trolley car to board a canal boat and enjoyed a tour of the Pawtucket canal, through Guard Locks, and onto the Merrimack River. There they discovered the significance of Lowell industrial history and explored how the Industrial Revolution affected the Merrimack River and Lowell. After lunch, the group toured the Boott Cotton Mills Museum where they heard the roar of a 1920's weave room with operating power looms. They also explored the boarding house where they learned how the “mill girls” lived while working at the mills.

An exhibit taught us about the development of the weaving industry, how it lost its role in this area and how academia and industry are now working together to help revive the Lowell Community. ◇

### Member News

Frank Westheimer, Morris Loeb Professor of Chemistry, Emuritus, Harvard University, is the First American recipient of the Nakanishi Prize for his wide-ranging work of the application of physical chemistry to organic and biochemistry.

## Meet the Protectors of Vacuum Pumps, Systems and the Environment!



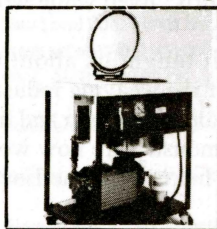
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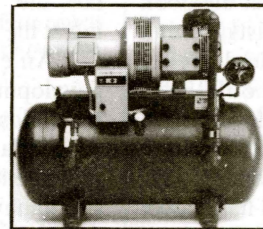
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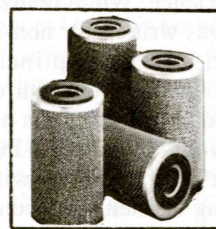
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## Professional Relations Column

### Good Questions Enhance Job Interview Success

Contributed by David Bushery<sup>1</sup>

Hiring-managers, in today's marketplace, rank teamwork, attitude and personality right up there with technical ability when making hiring decisions. Approaching the interview process well prepared with Company knowledge and with good questions will both demonstrate the candidate's interest and uncover the interviewers core needs early on, allowing for a more meaningful exchange of information.

Here are some thought-provoking questions which, when asked during an interview, are usually well received and often lead to gaining the "competitive edge," ultimately furthering one's candidacy:

1. How can I make your job easier?
2. What are your pet peeves?
3. How will my day be divided?
4. What would you like to know about me?
5. What is the profile of the best person in your department?
6. Tell me about your staff.
7. How will the staff/company grow in the next year?
8. What do you want to achieve in the next six months?
9. Why are you proud to work here?
10. What are your priorities?
11. What are the problems I might face?
12. Who would I interact with the most/least?
13. What is the personality of your department?
14. What are the strengths of the department?
15. If you could improve one thing, what would it be?
16. What do you Mr./Ms. Authority see as the most important part of your job?

## Applications Health and Safety Wanted: on My Mind

### 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 résumé, 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 & Science Policy American Chemical Society 1155 16th Street, N.W. Washington, D.C. 20036

For more information, contact Margaret Carey at 202/872-4467 or

17. Are there specific deadlines/projects to meet?
18. What would you expect of me in the first six months to make you feel you hired the right person?
19. When would you like to see me again?

<sup>1</sup>David Bushery is a Technical/Chemical Specialist at Positions, Inc., a contingency fee search firm in Faneuil Hall Marketplace in Boston. Tel.: (617) 367-9200. ◇

### Odds and Ends

By M.A. Solstad

### Safety on the Internet

If you have any institutional duties in chemical handling, general safety or environmental compliance, you may want to sign onto the SAFETY LIST. This corner of the internet generates about 50 messages a day of which, on a given day, maybe half a dozen will be of interest to you. Scanning these is an easy task, or an onerous chore, depending on how user-friendly your e-mail system is. Ralph Stuart, who runs this list from the University of Vermont, has just received an award from the ACS Division of Chemical Health and Safety (DivCHAS) for his contributions to chemical health and safety. To subscribe, send an e-mail to: listserve@uvmvm.uvm.edu In the body of the message write SUB SAFETY, and your name. For any questions, write rstuart@moose.uvm.edu

Web sites mentioned in *Chemical Health & Safety* recently: <http://www/law.vill.edu/fed-agency/fedwebloc.html> is a well-organized link to federal agencies and regulations, managed by Villanova. <http://www.epa.gov/swercpp/acc-pre.html> is from the EPA's Office of Chemical Emergency Prevention and Preparedness. <http://www.lib.uchicago.edu/atbrooks/safety/saftybib.html> is an excellent on-line bibliography of references on chemical safety for hazardous substances and on regulations concerning them in respect to toxicology, accident management or laboratory design.

### Chemical Health and Safety

The magazine, published jointly by DivCHAS and ACS, is now well into its third year of publication. It's timely, interesting, readable, and inex-

pensive for members or affiliates of DivCHAS. You, who have any interest in chemical health and safety, get your own copy, and ask your institution's library to subscribe. Jay Young's column on chemical accidents is always a must-read, both interesting and informative. Authoritative articles appearing in recent issues have included such topics as safety audits, contact lenses in the laboratory, laboratory waste minimization, interviews with regulators, and safety guidelines for peroxidizable organics. Try it, you'll like it better than those expensive newsletters you get now, or those advertisement-filled freebies.

### CHO Certification

I've written before about ACS efforts to develop a Chemical Hygiene Officer certification program. A certification program for environmental chemists is also in the works. For legal reasons, further developments in this direction have been turned over to the separate entity which has for some years administered the certification program for clinical chemists. A target date for the first exams is late next summer. Will chemists with other certifications, or defined levels of experience be grandfathered in? Still being studied. Will continuing maintenance be required to remain certified? Not known yet. Will this be a requirement for the position? No, but passing the exam may act as validation of your own knowledge, and might impress your employer. Stay tuned.

### The Civic-Minded Chemist

ACS, along with CMA and AIChE, currently is undertaking a program to encourage chemists to address civic

continued on page 16

## Health and Safety

continued from page 15

groups about **Our Chemical World**. Kits are available; call 1-800-227-5558, x6293. Or one could volunteer for the James Flack Norris Speakers Bureau, that I chaired for the Section for over a dozen years, and whose principal audience was school groups. Michael Dube chairs this enterprise now (617-283-3127).

Contact the editors of newspapers when chemical inaccuracies creep into stories. If a local citizens group is concerned about chemical issues, offer to provide them with factual information, or to interpret the information they do have. If you can be as neutral as possible, and avoid getting pulled into name-calling, you will be most effective. If there is a problem with chemicals being mishandled, say so; maybe you can suggest a solution. In the last year I've led a campaign to require cleaning the storm water runoff from a new development before it entered an environmentally sensitive cove. Neighbors of an adhesives plant have been bothered by its emission of toluene and sundry alkanes. The state took air samples in the surrounding neighborhood. I'm trying to put a face on the results for the neighbors. The State's clean exposure levels, legal and acceptable in the workplace, are far from acceptable for the general population. Many appreciate my input — others call me a tool of the lawyers, or insurance companies, or worse. So far I've kept my cool.

ACS still has available an excellent manual on *Chemical Risk Communication, Preparing for Community Interest in Chemical Release Data*, first written in 1938. If you need to interpret environmental chemical data for the public, this manual gives excellent guidance.

For householders' information, the Committee on Chemical Safety has prepared *Read the Label*, a 12-page booklet. Locally, MWRA last year had an excellent booklet on household chemicals, their use and proper disposal. ◇

## Norris Award

continued from page 4

worked the problem for the rest of the year. The decision was announced in January, 1950. The statement read, "The James Flack Norris Award shall be made for outstanding achievement in the teaching of chemistry, particularly when demonstrated at college or secondary school levels rather than shown in research." This approach to memorialize Norris recognized the emphasis he placed on teaching, and the Committee's fear that another award for outstanding research would be lost in the crowd.

The announcement which appeared in the *Nucleus* for January, 1950 read:

"The first national award for outstanding achievement in the teaching of chemistry is announced by the Northeastern Section of the American Chemical Society, Inc. in memory of the late James F. Norris. Teachers from schools, colleges and universities will be eligible. This is in accordance with the wishes of the late Anne C. Norris of Cambridge who left the Northeastern Section a bequest of \$10,000 plus half of the residue of the estate, to be used to perpetuate the memory of her husband, James F. Norris.

Believing in the importance of excellence in teaching as a contributing factor in the progress of chemistry, the Board of Directors of the Northeastern Section have selected this form of award as a memorial to Professor Norris, himself a teacher of great repute. The award will consist of a suitably inscribed certificate and a sum of money, and will ordinarily be given biennially, in the years when the Richards Medal for achievement in research is not awarded by the Northeastern Section.

Professor Norris was a student of Ira Remsen, one of chemistry's greatest teachers. (Norris) gained his outstanding reputation as a chemistry teacher at Harvard and Clarke

## NESACS Directory

The 1996 NESACS Directory is off the press. In addition to the names and addresses of members (mailing and alternate address, if it is in the files), phone/fax/e-mail numbers, the directory contains the current constitution and by-laws of the Section, current officers and committee chairs, lists of past chairmen, awardees, and a 56-page list of employers with the names of members employed.

Members may receive a copy for a payment of \$ 12.00 (incl. postage). Please note that the directory is for personal use by members of the Section only, and may not be used for solicitation, advertising or any other commercial use, except by specific permission of the Board of Directors.

Order from: *Karen Piper, Business Manager, 19 Mill Rd., Harvard, MA 01451, (508) 456-8622.* ◇

(sic) Universities, as Professor at Vanderbilt University and Simmons College, and at the Massachusetts Institute of Technology where he became Director of the Research Laboratory of Organic Chemistry. He was Chairman of the Northeastern Section, was twice President of the American Chemical Society and served on its Board of Directors for eleven years."

The early recipients were chosen by a secret committee, again led by Esselen, who remained active in promoting the memory of Norris for the next couple of years until his death in October, 1952. Open election of the Norris Award Committee did not begin until 1954, when it was realized also that the capital funds were adequate to give the award annually, instead of biennially.

The first presentation was made in May, 1951 at the Harvard Club to George Shannon Forbes, an old friend of Norris, an outstanding teacher at both Harvard and, in retirement, at Northeastern Universities. ◇

## Historical Notes

by Edward R. Atkinson, Amherst, Mass.

*Continuation of the short biographies of chemists and chemical engineers whose deaths have been reported to us during the past 12 months.*

**Joseph A. Martins, S.J.**, 87, died on June 15, 1996 after a long illness. He was a native of South Boston and studied for the priesthood at Boston College. After ordination in 1940 he taught chemistry at the Cranwell Preparatory School in Lenox, Mass., St. George's College in Kingston, Jamaica, Boston College, Holy Cross College and Clark University. He was department chairman at Holy Cross in 1953-1962. Since 1974 Father Martins was engaged in retreat work at Holy Cross and other Jesuit centers in New York and Connecticut. His last years were spent as a resident of the Jesuit Campion Center in Weston, Mass.

**Timothy E. McCarthy**, 82, died on October 14, 1995. He was a graduate of Mission High School in Boston and obtained the B.S. and M.S. degrees from Boston College and the Ph.D. in chemistry from Georgetown University. After service in World War II he carried out research on anemia at the Armour Laboratories in Chicago and then taught chemistry at the Fort Devens branch of the University of Massachusetts. After this institution closed he joined the faculty at Boston College and remained there until retirement in 1977.

**David A. Murphy**, 77, died on April 5, 1996. He was a native of South Boston and attended the Boston public schools. His undergraduate degree in chemical engineering was from Syracuse University and he did graduate work at M.I.T. After service in World War II he was employed for 20 years as a chemical engineer at the Waltham plant of the Polaroid Corporation. He retired in 1980. As a resident of Norwood he was active in town and church affairs.

**Alec Niconchuk**, 77, died on October 27, 1995. He was a native of Peabody,

Mass. and lived there for his entire life, except for the 8 years of World War II, when he served as Lt. Commander aboard the USS Chicopee in the Atlantic Fleet and the USS Morton in the Pacific. After graduating from Peabody High School in 1936 he studied at Northeastern University and the Harvard Supply Corps School. Following the war he was employed at the Dewey & Almy Chemical Co. (later W.R. Grace & Co.) in Cambridge and at the United Shoe Machinery Corporation in Beverly. His field of expertise was rubber technology. He held a number of patents in the field, including one describing a material for the repair of tubeless automobile tires. In 1964 he founded the North Shore Laboratories in Peabody. In addition to membership in the ACS he was also active in the Boston Rubber Group.

**John W. Nye**, 76, died on October 9, 1995 after a long illness. He was an honors graduate of Needham High School and received the B.S. in chemistry from the University of Massachusetts, Amherst in 1941. For 37 years before retirement in 1982 he served as a research chemist at the Dewey & Almy Chemical Co. (W.R. Grace & Co.) in Cambridge and Lexington. As a lifelong resident of Needham he was active in church and community affairs, serving as deacon, choir member, and hospital volunteer.

**Chong Wha Pyun**, 65, died on February 1, 1996. He was an honors graduate of the Seoul National University in Korea, then came to the U.S. to obtain the Ph.D. in chemistry from Brown University in 1964. Until 1970 he did post-doctoral work at the University of Oregon, the University of Minnesota, and the Carnegie-Mellon University in Pittsburgh. He then joined the faculty of what is now the University of Massachusetts-Lowell. His teaching and research were in the fields of polymer science, reaction kinetics, and the history of science and technology. He was

## C&B Amendment

The amendment of Article VIII, Sec. 1 which was printed in the Summer issue has been submitted to the national C&B Committee for review prior to taking formal action.

C&B recommended a simplified wording which retains the substance of our amendment, but states it more briefly. The changes are editorial in nature. In the interest of more rapid action, the original text will be voted at the October 1996, or at a later meeting. If approved, the text with the editorial changes will be submitted to the ACS C&B Committee for formal approval.

The modified amendment thus reads:

"Newly elected members of an elected award committee shall take office immediately upon notification of their election, provided that the award has already been presented or will not be given in that year. Otherwise, newly elected award committee members shall take office on the first day of the month following the scheduled presentation of that year's award. In either case, newly elected members shall take office no later than January 1 and shall serve until their successors have been duly elected and qualified." ◇

a visiting professor at Seoul National University (1977) and the Pohang University of Science and Technology (1986).

Chong Wha Pyun was a leader in the Korean-American community of the U.S. he served as president of the Korean-American Scientists and Engineers Association in 1976. In 1978 he was awarded the Order of Civil Merit by the Korean government. In August 1995 he was awarded honorary citizenship, as an exceptional overseas Korean, by the government of metropolitan Seoul.

(To be continued) ◇

# BUSINESS DIRECTORY

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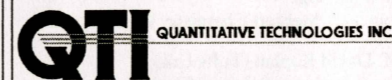
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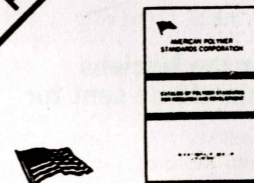
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# Calendar

## October 23

Dr. John Rogers (Harvard University)  
"Microfabrication of Mirrors, Magnets and  
Trenches 100 Molecules Wide"  
Harvard University  
Pfizer Lect. Hall, MB23, 12 Oxford St., at 4 pm

## October 28

Prof. ChiHuey Wong (Scripps Research  
Institute)  
"ChemicalEnzymatic Approach to Carbohydrate  
Recognition"  
Harvard University  
Pfizer Lect. Hall, MB23, 12 Oxford St., at  
4:15pm

## October 29

Prof. James Williamson (Mass. Inst. of  
Technology)  
"Molecular Recognition in RNAProtein  
Complexes"  
Tufts University  
Rm. 106, Pearson Hall, at 4:30 pm

## October 31

Prof. Larry E. Overman (Univ. California,  
Irvine)  
"New Cyclization Reactions and their  
Application in Natural Products Total  
Synthesis."  
Boston College  
Room 127, Merkert Chemistry Ctr., at 4 pm

Prof. Richard Friesner (Columbia University)  
"Testing and Development of Molecular  
Modeling Force Fields Using Ab Initio  
Quantum Chemistry"  
Harvard University  
Pfizer Lect. Hall, MB23, 12 Oxford St., at 5 pm

## November 4

Prof. Stuart Schreiber (Harvard University)  
"Chemical Approach to Understanding and  
Controlling Cellular Protein Function"  
Prof. Marc G. Caron (Duke Univ. Medical Ctr.)  
"G ProteinCoupled Receptors: Mechanisms of  
Signaling Termination"  
Prof. Paul Sigler (Yale University)  
"Stereochemistry of Trimeric G-protein  
Regulation"  
PFIZER SYMPOSIUM: Harvard University  
Pfizer Lect. Hall, MB23, 12 Oxford St., at 1:30 pm

## November 5

Prof. Paul Davidovits (Boston College)  
"How Do Gas Molecules Enter Liquids and  
What Do They Do There?"  
Applications to Atmospheric Chemistry."  
Tufts University  
Rm. 106, Pearson Hall, at 4:30 pm

## November 6

Prof. Robert Whetten (Georgia Inst. of  
Technology)  
"Nanocrystal Gold Molecules & Crystals of  
Nanocrystals"  
Harvard University  
Pfizer Lect. Hall, MB23, 12 Oxford St., at 4 pm

## November 7

Prof. Gregory A. Petsko (Brandeis University)  
"Protein Structure in 4 Dimensions."  
Boston College  
Room 127, Merkert Chemistry Ctr., at 4 pm")

## November 11

Prof. Richard Losick (Harvard University)  
"Asymmetric Division and Cell Fate"  
Harvard University  
Pfizer Lect. Hall, MB23, 12 Oxford St., at 4:15 pm

## November 12

Prof. Vassili Karanassios (Univ. of Waterloo)  
"Elemental MicroAnalysis by ICP  
Spectrometry"  
Tufts University  
Rm. 106, Pearson Hall, at 4:30 pm

## November 13

Dr. Amy Howell (Dept. of Chemistry, Univ. of  
Connecticut)  
"2Alkylidene Oxetanes: Useful Intermediates  
for Organic Synthesis"  
UMass Dartmouth  
Sci. & Eng. Bldg., Rm. 305, at 4 pm

## November 14

Prof. Jerrold Meinwald (Cornell University)  
"The Chemistry of Violence, Sex, and Drug  
Dependency in the Insect World."  
Boston College  
Room 127, Merkert Chemistry Ctr., at 4 pm

Dr. Harold Hess (Bell Laboratories/Lucent  
Technologies)  
Observing Quantum Caverns Using Near Field  
Spectroscopy  
Mass. Inst. of Technology  
Rm. 6-120, at 5 pm

Prof. Vinod K. Singh (Indian Inst. of Technology)  
"New Ligands in Asymmetric Synthesis"  
Northeastern Univ.  
Rm. 129, Hurtig Bldg. at 4 pm

## November 18

Prof. J. Eric Gouaux (Columbia University)  
"Structure, Function and Assembly of  
 $\alpha$ -Hemolysin:  
A Heptameric TransmembranePore"  
Harvard University  
Pfizer Lect. Hall, MB23, 12 Oxford St., at 4:15pm

## November 20

Prof. Tobin Sosnik (Univ. of Chicago)  
"The Role of Secondary Structure and Other  
Possible Early Events in Protein Folding"  
Harvard University  
Pfizer Lect. Hall, MB23, 12 Oxford St., at 4 pm

Dr. Arthur L. Utz (Dept. of Chemistry, Tufts  
University)  
"Molecular Reaction Dynamics at the  
Gas-surface Interface: Splats, Volcanoes and  
BellyFlops"  
UMass Dartmouth  
Sci. & Eng. Bldg., Rm. 305, at 4 pm

## November 21

Prof. Joseph E. Coleman (Yale Univ.)  
"The Role of Zinc in Molecular Biology"  
Boston College  
Room 127, Merkert Chemistry Ctr., at 4 pm

Prof. David Kaplan (Tufts Univ.)  
"Biocatalysis for Polymer Synthesis and  
Modification at Interfaces"  
Northeastern Univ.  
Rm. 129, Hurtig Bldg. at 4 pm

## November 25

Prof. Catherine Dulac (Harvard University)  
"Molecular Approaches to Smell and  
Pheromone Perception in Mammals"  
Harvard University  
Pfizer Lect. Hall, MB23, 12 Oxford St., at 4:15 pm

## Notices for the Nucleus Calendar should be sent to:

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