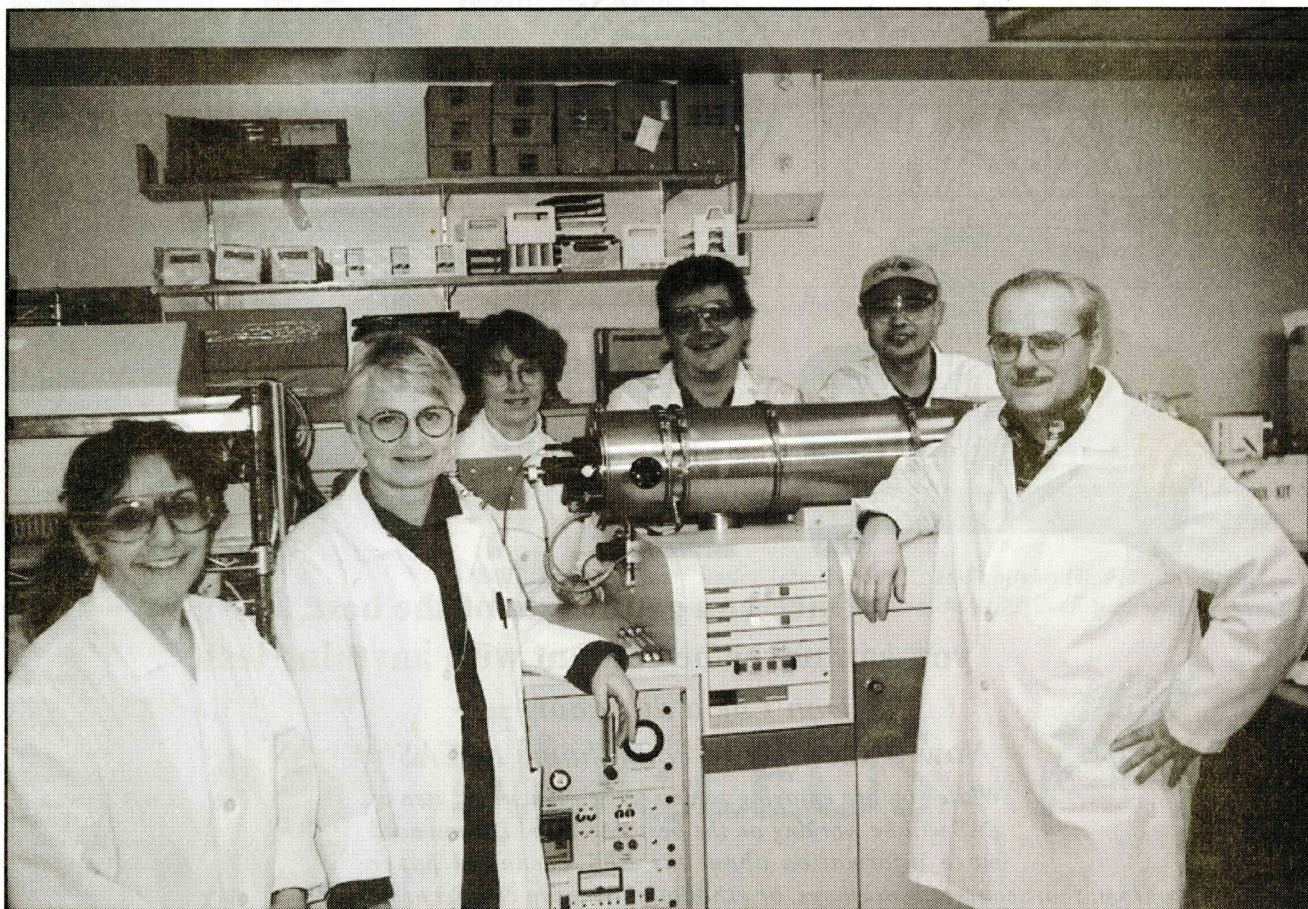


# THE NUCLEUS

May 1997

Of the Northeastern Section of the American Chemical Society

Vol. LXXV, No. 9



## Monthly Meeting

*Kathleen Swallow on mutagens  
in combustion products*

## Book Review

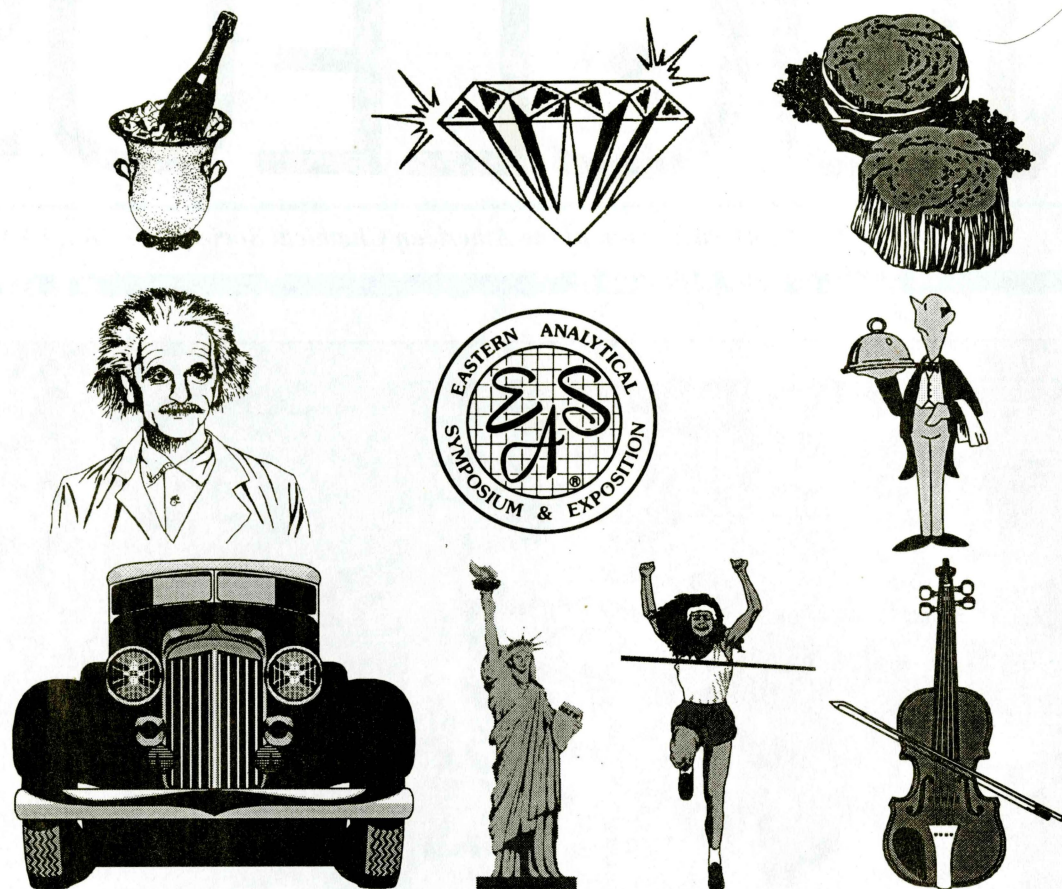
*S.H. Snyder "Drugs and the Brain"  
Reviewed by R. S. Umans*

## Candidates' Statements

*Election of 1998 Candidates*

## Health and Safety

*Ethical issues in health and safety*



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The 1997 EAS will be held November 16 - 21, 1997 at the Garden State Convention Center and the DoubleTree Hotel in Somerset, New Jersey. You can be part of the 1997 EAS. If you have attended EAS in the past, you are aware of the wide range of papers which are presented at EAS. If you have never attended EAS, but work in the general area of analytical chemistry and the allied sciences, we welcome you to come aboard. You will be surprised to see how many of your colleagues already attend EAS every year. While the general call for papers closed on April 15th, we may still have room for poster presentations in some sessions, and welcome papers in all areas of the analytical and allied sciences. Contact us as soon as possible to see if we can accommodate your paper.

**EAS FACTS IN BRIEF:** EAS is a non-profit [501(c)(3)] scientific organization run totally by volunteer scientists. EAS is proudly sponsored by the Analytical Division and the North Jersey and New York Sections of the American Chemical Society; the American Microchemical Society; the Chromatography Forum of the Delaware Valley; the New York Microscopical Society; and the Delaware Valley, New England, and New York Sections of the Society for Applied Spectroscopy. The 1996 EAS attracted over 5100 attendees and included over 640 Technical Papers, 14 CONFERENCES-IN-MINIATURE, 23 EAS Short Courses, 24 EAS Exhibitor Workshops, 9 Seminars, 9 Tutorials, and 318 exhibit booths. In 1997, the advance Registration fee will remain at a low \$65.



#### The Northeastern Section of the American Chemical Society, Inc.

Office: Marilou Cashman, 23 Cottage St., Natick, MA 01760. 1-800-872-2054 (Voice or FAX) or (508) 653-6329. Any Section business may be conducted via the business office above. NESACS Homepage: <http://www.tiac.net/users/obermayr/nesacs> Washington, D.C. ACS Hotline: 1-800-227-5558

#### Officers 1997

**Chair**  
Martin Idelson  
1603 Commonwealth Ave.  
West Newton, MA 02165  
527-8880 FAX 527-3222  
e-mail: [actingup@tiac.net](mailto:actingup@tiac.net)

**Chair-Elect**  
Michael J. Hearn  
Chemistry Dept., Wellesley College  
Wellesley, MA 02181, 283-3127

**Immediate Past Chair**  
Patricia L. Samuel  
40 Holland Ave.  
Bar Harbor, ME 04609  
(207) 288-3044 FAX (207) 288-2719  
e-mail: [jgraycote@acadia.net](mailto:jgraycote@acadia.net)

**Secretary**  
Sonja Fetela  
Polyonics, Westmoreland, NH 03467-4740  
603-352-1415, 603-352-1936  
e-mail: [info@polyonics.com](mailto:info@polyonics.com)

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James Piper  
Simmons College, 300 The Fenway  
Boston, MA 02115, 617-521-2722

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20 Somerset Rd.  
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\*one year term

All Chairs of standing Committees, the editor of THE NUCLEUS, and the Trustees of Section Funds are members of the Board of Directors. Any Councilor of the American Chemical Society residing within the section area is an ex officio member of the Board of Directors.



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**Cover:** Staff of the Core Laboratory for Analytical Chemistry, MIT, around the mass spectrometer of an HPLC/MS system. Front row: Koli Taghizadeh, Kathleen Swallow, Art Lafleur; back row: Elaine Plummer, John LoRusso, Kaisheng Jiao

**Deadlines:** Summer issue: June 11, 1997 Send copy to Dr. Myron Simon, 20 Somerset Rd., West Newton, MA 02165 (Editor will be abroad)

September issue: July 14, 1997

## THE NUCLEUS

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**Editor:** Arno Heyn, 21 Alexander Rd., Newton, MA 02161, Tel: 969-5712, FAX: 527-2032; e-mail: [aheyne@worldnet.att.net](mailto:aheyne@worldnet.att.net)

**Associate Editor:** Myron S. Simon, 20 Somerset Rd., W. Newton, MA 02165, Tel: 332-5273

**Board of Publications:** Doris I. Lewis (Chair), Joseph A. Lima, E. Joseph Billo

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

**Advertising Manager:** Vincent J. Gale, P.O. Box 1150, Marshfield, MA 02050, Tel: (617) 837-0424 FAX: (617) 837-8792

**Contributing Editors:** Edward Atkinson, History of Chemistry, Maryann Solstad, Health; Catherine E. Costello, Calendar; Dennis Sardella, Book Reviews.

**Proofreaders:** Ernest I. Becker, Donald O. Rickter, M.S. Simon

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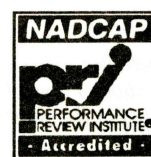
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## Board of Directors

*Notes of Meeting of  
February 13, 1997*

*NOTE: Board Meetings are held on the monthly meeting day at 4:30 p.m. Section members are invited to attend.*

### Officers' Reports

**Chair:** Dr. Idelson announced that Ms. Bonnie Carr will be the local Chair for National Chemistry Week 1997.

**Chair-Elect:** Dr. Hearn stated that Dr. Tanner is securing a speaker for the May Education Night meeting.

**Treasurer:** Dr. Piper distributed copies of the monthly report which was APPROVED. The annual budget was discussed. The proposed budget of \$164,798 represents a negative balance of about \$9,900, but it is anticipated that a number of the budgeted items will not be expended and that income will exceed the budgeted amount.

The tax-exempt status of the Section was discussed. It was suggested that we seek the advice of the Counsel of the national ACS before developing our own financial strategies for maintaining the tax-exempt status.

**Trustees:** Dr. Hopkins presented the "Condensed Annual Report for 1996", based on the 29-page full report prepared by Dr. Handrick. There was a discussion of program development for using some of the income funds. Dr. Strem will write a proposal, to be sent to the Directors and Trustees.

### Standing Committees

**Bd. Of Publications:** Dr. Lewis stated that the National Fall Meeting of the ACS in 1998 will be in Boston. Also 1998 is the centenary of the founding

*continued on page 15*

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## Directions

**From the North:** On I-93 south, \*leave at Exit 15 (JFK Library/ South Boston/ Dorchester) turn left and follow the Univ. of Massachusetts signs along Columbia Rd. and Morrissey Blvd. 100 yds. to the Service Rd. Proceed 1/2 mile to the traffic signal at UMass Drive, turn left and onto the campus.

**From the South:** Take I-93 north to exit 14 (JFK Library/Morrissey Blvd.) and follow Morrissey Blvd. northward to the traffic signal at UMass Drive. Turn right to the campus.

**From the West:** Take the Mass Turnpike east to the end at I-93. Take I-93 south and follow directions at \* above.

**On the campus:** follow signs to the underground garage. Obtain free voucher from attendant. Walk or take elevator to Level 2. Proceed to the top floor of the Library.

**By MBTA:** Red Line to JFK/UMass Station. Take free shuttle bus from the "T" parking lot, or MBTA bus # 8, 16. ◇

## Monthly Meeting

*The 789th Meeting of the Northeastern Section  
of the American Chemical Society*

### Education Night

Thursday, May 8, 1997

University of Massachusetts-Boston, Harbor Campus  
University Club, Healy Library, 11th floor

**5:30** Social Hour

**6:30** Dinner

**7:15** Evening Meeting  
Dr. Martin Idelson, Chair, presiding

**Address:** *Analysis of Potential Mutagens in Combustion Products*  
Prof. Kathleen C. Swallow, Merrimack College

### Presentation of Awards:

Philip L. Levins Memorial Prize  
James Flack Norris/Theodore William Richards  
Undergraduate Research Fellowships  
Undergraduate Grants-in-Aid  
Undergraduate Research Symposium  
1996 Project SEED Students  
Excellence in Teaching at the Secondary School Level  
Induction of New Members into *Aula Laudis*  
Avery A. Ashdown Chemistry Examination;  
Simmons College Prize

Dinner reservations should be made no later than noon, May 1. 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.** Obtain voucher at registration desk. See directions, page 4.

*Plans are underway for Summerthing 1997. Place and date to be announced.*

## Biography

Dr. K. C. Swallow earned her B.S. in chemistry at the University of Richmond and her Ph.D. in Analytical Chemistry at MIT. She left an Assistant Professorship of Chemistry at Wellesley College to found an analytical testing laboratory, which she later sold to MODAR, Inc.. It is active in the development of supercritical water oxidation for hazardous

waste treatment, and she became its Manager of Analytical Laboratories. After being a Senior Associate with Gradient Corp., an environmental consulting firm, she returned to teaching as Associate Professor of Chemistry at Merrimack College. Dr. Swallow is currently on sabbatical leave as a Visiting Scientist in the Core Laboratory for Analytical Chemistry and in the Supercritical Water Oxidation Group in the Department of Chemical Engineering at MIT. ◇

## Abstract

The Core Laboratory for Analytical Chemistry at MIT, provides analytical chemistry expertise for research groups in environmental research, such as the Department of Chemical Engineering on combustion research. Chemists in the Core Laboratory work to identify and isolate components of the products of combustion generated from laboratory-scale combustors under various conditions. Tar in solid combustion products contains polycyclic aromatic hydrocarbons (PAH), many of which have been demonstrated to have mutagenic properties in both bacterial cultures and in human cell lines. Information on the PAH composition of tar is helpful in studying the health threat to humans by airborne particulate combustion products. In addition, certain chemicals in combustion products offer clues to the formation of PAH and soot. These mechanistic studies are also being applied to the formation of fullerenes in certain types of flames.

The Core Laboratory is equipped with a broad range of sophisticated analytical instruments including gas chromatographs, gas chromatograph/mass spectrometers (GC/MS), high performance liquid chromatographs, and a high performance liquid chromatograph/mass spectrometer (HPLC/MS). By using a combination of these techniques we are able to identify most of the major components of the PAH fraction of tar samples. Unequivocal identification of PAH depends on the availability of reference standards provided by a group of synthetic organic chemists. We thus have been able to complete a comprehensive analytical survey of several combustion samples. ◇

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# Health & Safety on My Mind

## Ethical Issues in Chemical Health and Safety

by M.A. Solstad

For the last several years different divisions or committees of ACS have offered programs or symposia on ethics at our national meetings. They've often been buried in the formidable ACS program offerings and attract only scattered interest. I am hoping that the *Ethical Issues in Chemical Health & Safety* Symposium I am chairing in San Francisco will do better.

Recent offerings from the divisions include that of the Younger Chemists Committee (YCC), aimed at making students think about cheating and its effect on their career, and on science. The Division of Professional Relations (PROF) and the Division on Chemistry and the Law (CHAL) both include sample scenarios to illustrate ethical problems in their fields. In CHAL there have been issues relating to the different rules of conduct in science and the law.

For many years our smaller sister society, the American Industrial Hygiene Association (AIHA), has offered courses, panels and symposia on ethics. They are always popular and well attended. A past member of their Ethics Committee, the instructor of their Professional Development Course on Ethics, and past Chair of their Law Committee, will be joining me on the panel in San Francisco. She'll be offering an all too short sample of that course with the help of a video from the National Society of Professional Engineers. Each month the *Synergist*, the magazine of the AIHA, presents an ethical dilemma for commentary from the members.

In what way is ethics in the field of chemical health and safety, or industrial hygiene, different from ethics at a school, or in research? "Why bother; we know the difference between right and wrong." I submit that there is an important difference, and that is why I have arranged the

symposium. Except for the medical field, more than in other scientific endeavors, our work directly affects the health or safety of the public, and of fellow workers.

Our first duty is not just to "science" or "truth" or "honesty", but to the health and safety of the worker, whether in an industrial or office setting, or our fellow chemists in the lab. Next come our duties to the public, the environment, the various regulations that govern the workplace and environment, the financial health of the company which signs our paycheck and our own sense of integrity.

Ethical issues are easily resolved when the problems are black and white. When there is white on both sides, or when there are several shades of grey, honest scientists can reach opposite conclusions.

For one instructive example, borrowed from the National Society of Professional Engineers: A young engineer working for Z Corp. in a one industry town, is able to control their effluent within regulatory limits for heavy metals. The sewage from the town is profitably sold as fertilizer. A new contract obtained by the Z Corp. will increase production several fold. However, this will increase the amount of total metal because of a larger amount of effluent, thereby increasing the metallic load at the sewage plant. If the concentration of metal in the sewage gets too high then "dilution is the solution" might bring the metal concentration within regulatory limits, but the total metal load from the sewage treatment plant will still be too high. The obvious solution, pretreatment of the effluent to remove metals, as suggested by the young engineer, may put the operation in the red because the new contract has a very slim profit margin. Besides, "it's within the regulatory limits now."

The treated sewage is a good source of income for the town, so to stop selling it is not popular. Here we have the classic dilemma: Environment or public health vs. jobs vs. regu-

# Northeastern Section

## A.C.S. Election of Candidates for 1998

In the interest of providing maximum information and expression of opinion by the candidates for election in 1997, the Nominating Committee has prepared this section of the *Nucleus* for mailing concurrently with the ballots. All candidates were asked to submit biographical material and, with the exception of committee member nominees, position statements. Except for correcting typographic errors and minor changes to attain uniformity in format and presentation of the biographical data, these statements have been reproduced without change. An official ballot along with a ballot envelope and return envelope have been provided. The election and balloting are being carried out in conformance with Article VIII of the Constitution of the Northeastern Section. The order of candidates on the ballot was determined by lot. Comments regarding the election may be addressed to the Nominating Committee Chair, Dr. Patricia L. Samuel. (address on p. 3)

**BALLOT DIRECTIONS:** Vote for the candidate(s) of your choice, insert your ballot into the ballot envelope, insert the sealed ballot envelope into the return envelope, *sign your name on the return envelope only*, affix postage and mail.

**The Ballot Must be Received by June 1, 1997.** ◇

lations, with the hapless engineer (or chemist) in the middle.

Similar dilemmas arise for the chemist frustrated by pollution regulations that don't make scientific sense, or a "good" employee working at a bad company, torn between paycheck and integrity.

My intention is not to suggest the solution to these dilemmas, but rather to encourage my fellow chemists to see that ethics in science involves more than meticulous honesty in the lab notebook. ◇

## Chair-Elect

(Three-year sequence: Chair-Elect, Chair, Past-Chair)

### Donald O. Rickter

**Biography:** Born at home in the hills of Humboldt County, Calif.; married Phyllis, a "Professional Volunteer" from Grand Rapids, Mich. We are parents of David, a geography professor, and Paul, a technical writer at MediTech. My interests are Questioning, Reading, Swimming, Travel and Unitarian Universalism.

**Education:** One-room school (where I learned that teachers are usually too busy; I have to teach myself), high school and University of California-Davis in Davis, Calif. (AB, MS and general secondary teaching credentials); Ph.D. (physical organic with Mike Karabatsos), Michigan State Univ. (1964).

**Experience:** Dairy farming until drafted into the U.S. Navy as a Hospital Corpsman for 2 years; 3 years of H.S. and college teaching; Polaroid Research (Scientist 1964-96; 6 patents; 9 publications; Information Manager 1978-96); now in transition to be an independent information consultant; my specialty is the management of chemical information, using STN/CAS, Knight-Ridder, and many other resources. These are powerful tools for enhancing your work—in research, teaching, marketing, or whatever.

**ACS Service:** Member since 1953; Alternate Councilor most years (1985-97); Current member of Divisions of Organic Chemistry, Chemical Information, and Professional Relations; Congressional Science Counselor, 8<sup>th</sup> District, Mass., (1974-92);

**NESACS Service:** Co-Chair, Professional Relations Committee (1997); Nominating Committee (1996); Board of Publications (1983-85) Chair (1985); Program Committee (1981); Liaison between Polaroid and the Northeastern Section (1974-96); Helped start the Section web page in 1996; ACS and Polaroid exhibit at Mass. State House (June 1992);

**Memberships:** ACS; NENON (New England Online Users); Special Libraries Association.

**Statement:** This is one of the largest and best sections of the American Chemical Society. We are fortunate to have many opportunities for extracurricular activities here, learning from some of the leading chemists of the world, developing skills in teamwork, and broadening our understanding of science and technology. We need more chemists who share their ideas. You are encouraged to come to meetings and become more involved in the ACS. How can the Section serve you better? How can you serve



better? We can solve many problems as we take part and share our abilities. The public has some negative attitudes toward chemistry that will not go away if we are silent, neglecting our responsibility to inform people.

All chemists (industrial, academic, government, and independent) need to do public relations about the impact of science and technology on the lives of our fellow citizens.

Thanks to many hard-working volunteers (those listed on the title page of *The Nucleus* and many others), the NESACS provides valuable service to chemists and to the public. Just one example is the Employment Services done by Ted and Arlene Light. You do not have to attend a national ACS meeting to benefit from career services.

I am grateful to chemists at Polaroid for their support and input over the years—and to the Nominating Committee for its confidence in me.

Please study the ballot and vote!

## Secretary

(Two-year term)

### Sonja L. Fetela

**Education:** B.S. (industrial chemistry), Keene State College

**Professional Experience:** Polyonic/Adcotek, Inc., Westmoreland, NH. (current position); Inks Chemist, the Mearl Corp.; Research and Development Technician, Imtec, Inc.

**NESACS Service:** Interim Secretary (1997)

**Statement:** Recent nomination and acceptance for the position of Secretary of the Northeastern Section for the remainder of 1997 has presented me with the opportunity of building upon the reputation associated with this office, that of which my many predecessors can be proud. Having attended only two board meetings to date, I realize that the office of Secretary is responsible for record-keeping of minutes relating to regular meetings of the Board of Directors, certifying officers and councilors, and keeping the lines of communication between the local section and the national society open to enable everyone to properly network ideas and information which are responsible for making the ACS strong as a unified organization. During my term as Secretary, it is my goal to discover the strengths that allow NESACS to operate effectively and efficiently, and in doing so, will be able to work with other members to maximize these qualities, which will be necessary for NESACS to uphold its position within an ever-changing society.

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## Auditor

(Two-year term)

### Anthony Rosner

(reprint of 1996 Statement with revisions)

It has been my pleasure to have served and grown as Auditor for the Northeastern Section of the ACS over the past seven years and to have had the experience of working with Jim Piper. Since 1986, I have developed my accounting, computing, and administrative skills to the level of having managed over 120 research grants totaling \$10M at several universities and colleges nationwide. In a changing economic and political climate, I relish the opportunity of being able to continue as Auditor and would welcome your suggestions and support.

## Trustee

(Three-year term)

### Joseph A. Lima

**Education:** B.S. Chemistry, University of Massachusetts; MBA, Babson College

**Professional Experience:** Vice President, Houghton Chemical Corp., Boston.

**ACS Service:** Member since joining as Student Affiliate; member of the Division Of Chemical Marketing and Economics.

**NESACS Service:** Nominating Committee (1996); Board of Publications (1994- ; Chair 1995)

## Councilors and Alternate Councilors

(4 Councilors and 4 Alternate Councilors for 3-year terms, 2 Alt. Councilors for 1-year terms)

### Wilmon B. Chipman

(no statement received)

### Catherine E. Costello

**Education:** A.B. (chemistry) Emmanuel College; M.S., Ph.D. (organic chemistry) Georgetown University.

**Professional Experience:** Assoc. Director, MIT MS Resource (1975-95); Prof. of Biophysics and Director of BUSM Mass Spectrometry Resource.

**ACS Service:** Councilor, Northeastern Section (1989-97); Alt. Councilor (1986-88); member of the Constitution and Bylaws Committee, International Committee. Completed many tours for the ACS Speakers Bureau.

**NESACS Service:** Constitution and Bylaws Committee

(Chair); Nominating Committee (four terms); assembles the *NUCLEUS* Calendar; Board of Publications (1988-93) Chair (1990, 1993);

**Memberships:** ASMS, AAAS, Soc. for Glycobiology NIH Physiological Chemistry Study Section, several review panels and editorial boards.

**Statement:** I wish to continue to serve as a Councilor for the Northeastern Section in order to bring the interests of our members to the attention of the national ACS, to provide input to national policies based on my experience with educational institutions, research funding programs and national and international exchange of scientists and information, and to increase access of our members to the wide resources available to support their work and careers. I would like to foster more collaborations among academic institutions and between academia and industry and to encourage interdisciplinary research and training.

### Michael J. Dube

**Education:** B.Sc., Southeastern Mass. Univ.; Ph.D., Brown Univ. (1993).

**Professional Experience:** Visiting Asst. Prof., Brown Univ. (Spring 1993); Lecturer, Rhode Island College (Spring-Summer 1993); Asst. Prof., Wellesley College (1993-1996); UMass. Dartmouth (June 1996 -).

**NESACS Service:** Alternate Councilor (1996-); James Flack Norris Speakers' Bureau (Chair, 1997-).

**Statement:** I am serving the NESACS as Chair of the James Flack Norris Speakers' Bureau. I am aware of the activities and functions of the Section and the dedication necessary to play an active role in its affairs. I feel that serving as Councilor will allow me to attain experience that will prepare me to better serve the Section now and in the future. If elected, I will represent the Section's interest and participate in the various forums at both the local and national levels. I would faithfully serve the Section, offering fresh, new insights that will reflect the changing interests of the chemical community. Several issues that continue to warrant attention are the role the chemical community plays in society, increasing the quality of chemical education in our institutions, exposing students to chemistry by supporting programs that allow students to perform research, and increasing minority enrollment in chemistry. If given the chance, I would effectively voice and communicate concerns and needs of the Section to the best of my ability.

### Arno H.A. Heyn

**Education:** B.S., Ph.D., Univ. of Michigan (analyt. chemistry).

**Professional Experience:** Boston University (Instructor to Professor, 1947-84); Prof. emer. (1984-); visiting scientist appointments at Brookhaven Laboratory (summers

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phaseX

## MEMORANDUM

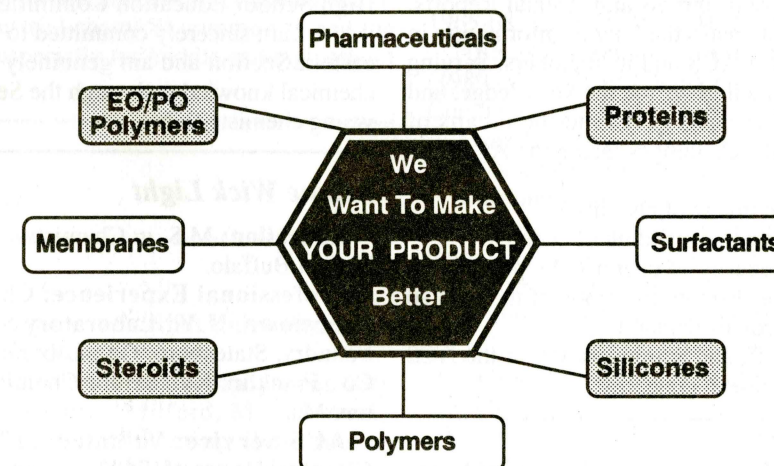
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1954-56); Kernforschungszentrum Karlsruhe (1973, 1980, summers 1981, 1982, 1986).

**ACS Service:** 50-year member; Councilor (1967-1997); Elected ACS Committees: Comm. On Committees (1992-94); Council Policy Comm. (1986-91; vice-chairman 1987-88). Council Committees: Local Section Activities (Associate, 8/1996-). Const. And Bylaws (1980-85; chairman 1983-5); Membership Affairs (1968-72, 1973-79; secretary 1970-72, 1973-79).

**NESACS Service:** Currently: Const. And Bylaws Comm.; Awards Committee (chair 1986-); Nominating Committee several times, last: 1996. Editor of *The Nucleus* (7/1989-). Chairman sequence (1967-69); Treasurer (1959-62); Member and chairman of numerous committees in the past.

**Award:** Henry A. Hill Award for Distinguished Service to the Northeastern Section, 1986.

**Statement:** I wish to continue to be able to apply the experience gained from long service as councilor and member of several committees to the benefit of the Society, the Northeastern Section and its members. Specifically, my current appointment to the Subcommittee which reviews Annual Reports of Local Sections will give me insight into the criteria which are applied to judging the performance of Local Sections. This knowledge will be useful to our Section in preparing future programs and Annual Reports. Generally, I wish to help increase the flow of information in both directions between the ACS and its members. Serving on committees of the Council gives me the knowledge, and being the editor of the *Nucleus* gives me the means of communication. Among the challenges facing the ACS, and science, in general, are:

- Improving the public image of chemistry
- Improving the professional standing of chemists
- Stabilizing the job security of chemists by publicizing information about the economic outlook of the field so supply more nearly equals demand
- Keeping officers, staff, and administration of the ACS in touch with its members' concerns.

### Esther A.H. Hopkins

A.B., M.S., Ph.D., J.D. Admitted to practice before the Massachusetts Supreme Judicial Court and the Patent Trademark Office of the Department of Commerce.

**Professional experience:** Chief Bureau Counsel for Bureau of Administrative Services of the Mass. Dept. of Environmental Protection; formerly Instructor in Chemistry, Virginia State College, Petersburg, Va.; Research Chemist, American Cyanamid and MRT Pharmaceuticals, Stamford, Conn.; Scientist, Patent Attorney, Manager, Polaroid Corp.; Trustee, Boston University; Member, Evaluation Committee for the Natl. Medal of Technology; Member, Tercentennial Commission, Town of Framingham.

**ACS Service:** Councilor, Northeastern Section, (1971-97); member, Council Policy Committee; Committee on

Professional Relations (past-chair).

**NESACS Service:** Past-chair. Member and chair of many committees.

**Award:** Henry A. Hill Award for Distinguished Service to the Northeastern Section.

**Statement:** I want to continue to speak for the Northeastern Section at the meetings, in the committees, in the Task Forces and at the Caucuses of the ACS. Speaking for the Section means for the science we all practice, for the people who practice it and for the communities in which we practice. I bring experience, wisdom, devotion. May I have your vote?

### Stephen Lantos

**Education:** B.S., Univ. of Michigan (1984); master's degree from Tufts University (1988).

**Professional Experience:** Chemistry teacher, Brookline High School (last 12 years).

**NESACS Service:** Chemistry Education Committee, chair of High School Education.

**Award:** Chosen as one of the Section's *Aula Laudis* honorees for excellence in teaching chemistry.

**Statement:** As head of the annual Avery Ashdown Examination for High School Students since 1988, and the High School Education Committee Chair for the last two years, I am sincerely committed to working with the Northeastern Section and am genuinely interested in advancing chemical knowledge through the Section, particularly to our young chemists-to-be.

### Arlene Wick Light

**Education:** M.S. in Chemistry, State University of New York at Buffalo.

**Professional Experience:** Chemist, Blackstone Co., Jamestown, N.Y.; Laboratory Supervisor, Blackstone Foundry, Statesboro, Ga.; Laboratory Supervisor, Kendall Co., Franklin, Ky.; Senior Chemist, Kendall Co., Lexington, Ma.

**ACS Service:** Volunteer at National Employment Clearing House (NECH) at two National Meetings per year since 1990. At these meetings I worked in various capacities, including: training volunteers, supervising the message center, reviewing applications and managing the Resource Library.

**NESACS Service:** Employment Service Committee (1993-); Professional Relations Co-Chair (1993-); Hospitality Committee (1978-); Northeast Regional Meeting (NERM) Committee (1978, 1993); Section Secretary (1979);

**Award:** Henry A. Hill Award for Outstanding Contribution to the Northeastern Section (1993).

**Statement:** I have been active in the Northeastern Section since moving here in 1975. My most recent activity has been to initiate, with Truman Light, a Clearing House

for members and employers of the Section to assist them with their employment needs. This endeavor was a result of our work since 1990 volunteering at the National Meetings. The concept of local assistance is now implemented by the National ACS, where the Northeastern Section has been cited as a leader in this effort. If elected, I shall be able to continue attending and participating at National Meetings, as Councilor, and to upgrade the resources of the local Career Services Committee.

### Cynthia B. McGowan

**Education:** B.A., Russell Sage College; Ph.D., Brandeis University

**Professional Experience:** Assoc. Prof., Merrimack College (1993-); Asst. Prof., Wellesley College (1984-93); Scientist, Polaroid Corp. (1980-84)

**NESACS Service:** James Flack Norris Award Committee (1992-96, Chair 1995); Education Task Force (1990-94); Chair, Chemistry Education Committee (1990-92); James Flack Norris Undergraduate Summer Research Scholarship Subcommittee (1989-92); Calendar editor for the *Nucleus* (1988-91)

**Statement:** As a Northeastern Section Councilor I will be able to become more involved in the ACS at the national level. I am interested in promoting education-related activities involving the industrial chemical community and the academic community, especially for middle and high school age students.

### Janet S. Perkins

(no statement received)

### Dorothy J. Phillips

**Education:** B.A. Chemistry, Vanderbilt University; Ph.D. Biochemistry, Univ. of Cincinnati.

**Professional Experience:** Chromatography Chemistry Division (CCD), Waters Corp., Milford, Ma. Currently Brand Manager in the CCD Marketing Department; involved in the development and applications of new chromatographic packings at Waters (1984-96); fermentation and nutrition research, Dow Chemical Co., Midland, Mich. (1974-84).

**ACS Service:** Councilor, Northeastern Section (1994-97);

**NESACS Service:** Co-Chairperson, Northeastern Section Centennial Celebration Committee (1997); Chairperson of Program SEED Committee (1992-97); Nominating Committee, Chairperson (1994); Section Chairperson (1993); Chairperson-Elect (1992);

**Statement:** I realized during my first term as Councilor that it is important for each member to understand the governing body of the American Chemical Society (the Society) and to be involved in policy-making activities. I was fortunate to be appointed first as an associate (non-voting

member), and then a full member of the Membership Affairs Committee (MAC). MAC is your voice on the governing body, for example, reducing Society membership fees during periods of absence from the work force. Since very few members who work in industry are involved in the Society's governance, my role as a Councilor is important. As a result of my increased involvement and attendance at national meetings, Waters Corporation is now the sponsor of an award in the Division of Analytical Chemistry. I would like to continue my involvement in the governing body, helping to put in place programs that are inclusive of both academic and industrial scientists. I ask that you vote for me to continue as one of your councilors.

### Alfred Viola

**Education:** B.A. (1949), M.A. (1950) Johns Hopkins; Ph.D., University of Maryland (1955).

**Professional Experience:** Northeastern Univ. (1957-); Professor (1968- present); Visiting Scholar, Wellesley College (1992-97); Visiting Professor: Monash Univ., Australia (1984); Univ. of Munich, Germany (1977); Research Associate, Boston Univ. (1955-57).

**ACS Service:** Councilor, Northeastern Section (1986-88); Alternate Councilor, Northeastern Section (1963-64, 1965-68, 1990-91, 1992-94, 1995-97).

**NESACS Service:** Continuing Education Committee (1989 -), Co-Chair (1989), Chairman (1990-); Norris Award Committee (1979-86) Chairman (1981, 1985).

**Award:** Henry A. Hill Award for Distinguished Service to the Northeastern Section (1996).

**Statement:** Despite having been honored to receive the Hill Award, I do not feel that entitles me to sit back on my laurels. In my capacity as Chair of the Continuing Education Committee, I have been instrumental in bringing ACS Short Courses to the Section, as well as in arranging for other symposia, all intended to provide continuing education opportunities to our members. I firmly believe that this is a vital activity which the Section must undertake in order to provide an essential opportunity to the membership to stay abreast of the ever evolving advances and changes in the world of chemistry. On a different topic, I firmly believe that the problems facing the chemical profession and its practitioners are now more numerous and more profound than at any previous time in the history of science, but so also are the opportunities for chemistry to contribute to the health and welfare of society as a whole. There is a great need to educate the public as to the truths and misconceptions that surround the world of chemistry, and thereby address the rampant scientific illiteracy with the public which now hinders scientific progress in this nation. I would like the opportunity to continue to represent these viewpoints within the Section and the Council.

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## Nominating Committee

(One-year terms)

### Mary T. Burgess

**Education:** B.S., Simmons College

**ACS Service:** Member, Committee on Professional Relations; Liaison to the Women Chemists Committee.

**NESACS Service:** Hospitality Committee (Chairman), including serving as Hospitality Chair for the Northeast Regional Meeting (NERM), 1978; National ACS Meeting in Boston, 1990; NERM 23, Boston 1993, at Northeastern Univ.; ACS Pops and Summerthing programs.

My experience with scientists in this area will enable me to contact members to become active in the Section.

I ask for your support and hope that you will vote for me as a member of the Nominating Committee for the Section.

### James A. Kaufman

**Education:** B.S., Tufts Univ. (1965); Ph.D. W.P.I. (1971); Post-Doctoral Fellow, W.P.I. Chem. Engineering Dept. (1971-73)

**Professional Experience:** Curry College, Assoc. Prof. (1977-82), Professor (1982-); Director, Health, Safety & Environmental Affairs (1991-93); Founder/President, The Laboratory Workshop (1981-); Laboratory Safety Consultant (1980-); Senior Research Chemist, Dow Chemical Co. (1973-77); Research Assoc., Holy Cross College (1970-71); Instructor, W.P.I. (1966-69).

**ACS Service:** Councilor (1982-87), Alt. Councilor (1981), Northeastern Section; Council Committee on Chemical Safety (1979-88); Division Of Chemical Health and Safety (1975-); Editor of divisional newsletter, 1 year; membership comm., 6 years, Chairman (1986); Developed letter on lab safety from ACS President to college/university presidents and national awards for college/university lab safety programs; Organized and chaired several DCHAS Symposia. ACS Tour Speaker (1991-).

**NESACS Service:** Chairman-Elect (1993); Chairman (1994); Past-Chairman (1995); Health and Safety Comm., chairman (1978-91, 1996); Contributing Editor (Safety) *The Nucleus* (2 years); participated in symposia on lecture demonstrations, home chemical safety, and lab. safety.; helped to develop and organize the Academic Lab Safety Council (1989); Workplace Chemicals Conference (May 1986), Nominating Committee (1985); Moderator, Hazardous Waste Symposium, Simmons College (1984); Safety Symposia for Mass. Safety Council Annual Meeting (1978, 1981); Safety Symposium for NERM-8; Auditor (1981).

### John L. Neumeyer

**Education:** B.S., Columbia Univ. (1952); Ph.D. (Medicinal Chemistry), Univ. of Wisconsin (1961)

**Professional Experience:** Director of Medicinal Chemistry, McLean Hospital, Harvard Medical School (1996-); Scientific Director, Chairman and Co-Founder, Research Biochemicals Int'l. (1980-1996; Distinguished University Professor, Medicinal Chemistry and Chemistry, Northeastern University (1969-92); Visiting Scientist, McLean Hospital, Harvard Medical School (1985-86); Visiting Professor of Chemistry, Univ. of Konstanz, Germany (1975-7); Senior Staff Scientist, Arthur D. Little, Inc. (1963-69); Senior Research Chemist, FMC Corp. (1961-63); Research Chemist, Ethicon (Div. Of Johnson & Johnson), (1952-57)

**ACS Service:** Northeastern Section Councilor (1988-96); Alt. Councilor (1997-); Division of Medicinal Chemistry, Councilor (1971-81, 1983-87), Executive Comm. (1971-81), Vice Chairman (1981), Chairman (1982)

**NESACS Service:** Trustee (1989-93); Founder and Chairman, Medicinal Chemistry Group (1964-65)

### Peter V. Pallai

(no statement received)

## Esselen Award Committee

(Four-year terms, two to be elected)

### Dodd S. Carr

**Education:** Bachelor's degree from Loyola College, Md. (1945); master's degree (1948), doctorate in chemical engineering (1950) Johns Hopkins Univ.; M.Bus.Adm., Rutgers/State Univ. of N.J. (1961).

**Professional Experience:** Research chemist, Internat'l Nickel Co. (1949-66) in metal finishing research; manager, chemical and electro-chemical research, Int'l Lead Zinc Research Organization (1966-91); published many journal articles in Australia, Brazil, Canada, Europe, Japan and the U.S.; authored chapters in several encyclopedias and books and received several U.S. patents.

**ACS Service:** Member since 1947. Has been a member of the Maryland, North Jersey, North Carolina and Northeastern Sections. ACS Emeritus member.

### Iclal S. Hartman

**Education:** A.B., M.A. Mount Holyoke (organic chemistry); Ph.D. (biochemistry-cancer research), University of Florida.

**Professional Experience:** On the Faculty of the Chemistry Dept., Simmons College, Boston.

**NESACS Service:** Professional Relations Committee, Membership Committee, chair (1990-97).

**Statement:** Our Section is privileged to have the Esselen Family endow an award for the recognition of outstanding

chemists who have made contributions to the society at large. If elected, I will be privileged to serve on the Esselen Committee. I hope that my educational background in chemistry, biochemistry, and cancer research, together with my teaching and research experience in the more specialized areas of environmental chemistry and biochemistry of drugs and drug design will enable me to serve on the committee responsibly and effectively. I would appreciate your vote.

### Martin Idelson

**Education:** B.S., Chem. (1952; Ph.D. (1955) Polytechnic Institute of Brooklyn.

**Professional Experience:** Shipley Co. (1985-90); Polaroid Corp. (1957-85); Children's Cancer Research Fundat., Boston (1954-57); Pavelle Color, Inc. (1947-51). Teaching Experience: Bentley College (1991-92); UMass Boston (1985-86); Northeastern University (1955-64, 1991-94).

**NESACS Service:** Chairman-Elect (1996), Chair (1997); Continuing Education Committee (chairman).

**Research and Publications:** Synthetic organic chemistry, synthesis and properties of high molecular weight synthetic polypeptides, dyes, photographic processes, photoresists. Many publications and patents on these subjects.

**Memberships:** American Chemical Society; Soc. of Photographic Scientists and Engineers, Fellow (now: Soc. for Imaging Science and Technology), Assoc. Editor; Sigma Xi.

### John C. Warner

(no statement received)

## Richards Medal Committee

(Four-year terms, two to be elected)

### John M. Buchanan

(WITHDRAWN, but ballot printed already)

### Roy L. Kisliuk

**Education:** B.S. in Biology and Chemistry, Queens College, Flushing, N.Y.; (1950); M.S. in Microbiology, Yale Univ., New Haven, Conn. (1952); Ph.D. in Biochem., Western Reserve Univ., Cleveland, Ohio (1956).

**Professional Experience:** Professor of Biochem., Tufts Univ., School of Medicine (1972-); Appointments of Assistant Prof. and Assoc. Prof. (Pharmacology, Biochemistry) at the Tufts Univ. School of Medicine from 1960-72); Visiting Scientist, Laboratory of Nutrition and Endocrinology, Natl. Institute of Arthritis and Metabolic Diseases, Bethesda, Md. (1958-60); Fellow, Nat'l Foundat. For Infantile Paralysis at the Microbiology Unit, Dept. of Biochemistry, Oxford Univ., Oxford, England (1956-58);

U.S. Public Health Service Predoctoral Fellow, Yale Univ., New Haven, Conn. (1951-2).

**ACS Service:** Member since 1960.

**NESACS Service:** Medicinal Chemistry Group; Chairman (1972-75); Secretary (1970-72).

**Other Appointments, Honors, and Publications:** Scientific Advisory Board, 11<sup>th</sup> Int'l Sympos. On Pteridines and Folic Acid Derivs., to be held in Berchtesgaden, Germany, June 1997; Advisory Panel, Israel Cancer Research Fund, New York, N.Y. (1994-96); Prof. of Pharmacology and Experimental Therapeutics, Tufts Univ. (1992-); Program Director for Biochemistry, Natl. Science Foundation, Washington, D.C. (1972-73); Leukemia Soc. Scholar (1961-66). 155 publications on folate enzymes, coenzymes and antimetabolites.

### Charles E. Kolb

**Education:** S.B. in Chemistry, M.I.T. (1967); M.A. (1968), Ph.D. (physical chemistry), Princeton University (1971).

**Professional Experience:** President and C.E.O. of Aerodyne Research, Inc. (ARI) (1985-); at ARI: Senior Research Scientist (1971-75); Principal Research Scientist (1975-), Executive Vice President and Director of Research (1984-85), Director of the Applied Sciences Division and Corporate Vice President (1981-84), Technical Director, Applied Sciences Division (1979-80), Director of the Center for Chemical and Environmental Physics (1977-79); Since joining ARI, his personal areas of research have included atmospheric chemistry, combustion chemistry, chemical lasers, materials chemistry, and the chemical physics of rocket and aircraft exhaust plumes. Author and co-author of over 125 archival publications in these fields.

**Other Affiliations:** Research Affiliate, MIT Spectroscopy Laboratory (1981-92), Dept. of Aeronautics and Astronautics (1993), Advisory Board for MIT Regional Laser Center (1981-92). Associate in Atmospheric Chemistry, Center for Earth and Planetary Physics, Harvard Univ. (1976-85); NAS/NRC: Board on Atmospheric Sciences and Climate (1997-), Committee on Research Opportunities and Priorities for the EPA (1995-97), Committee on Review and Evaluation of the Army Chemical Stockpile Disposal Program (1993-), Board of Assessment of National Institute of Standards and Technology Programs; Panel for Chemical Science and Technology (1991-3), Committee on Atmospheric Chemistry (member 1987-89, chairman 1990-93), Panel for Chemical Technology (1989-90), Panel for Chemical Physics (1987-88); NAS/NRC Committee on Tropospheric Ozone Formation and Measurement (1989-91); Gordon Research Conference on Atmospheric Chemistry, co-chair (1991); First Atmospheric Chemistry Colloquium for Emerging Senior Scientists (ACCESS), co-chair (1991). Editor, Atmospheric Sciences of Geophys. Res. Letters (1996-); Editorial Advisory Board of the Int'l. J. of Chem. Kinetics (1990-92).

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**NESACS Service:** Trustee (1994-96); Chair-Elect (1990), Chair (1991); Served on NESACS committees: program, budget, nominations, professional relations, co-chaired the NES/ACS Elementary Educational Task Force (1990-1994).

**Award:** Recipient of the 1997 ACS Award for Creative Advances in Environmental Science and Technology.

**Patricia A. Mabrouk**

**Education:** A.B. in Chemistry and Mathematics, Wellesley College (1982); Ph.D., physical chemistry, M.I.T. (1988); NIH Postdoctoral Fellow, Stanford University (1988-90).

**Professional Experience:** Asst. Prof. of Chemistry, Northeastern University (1990-)

**Professional Societies and Honors:** Nominated for NSF Presidential Faculty Fellow (1995); Barnett Award for Innovative Research (Northeastern Univ.) (1990); Am. Institute of Chemistry Award (Wellesley College) (1982); Mary White Peterson Prize (research), Wellesley College (1982). Member of: Sigma Xi, ACS, The Electrochemical Soc., Soc. for Electroanalyt. Chem., AAAS, Am. Assoc. of Univ. Professors, Soc. for Applied Spectroscopy, New England Assoc. of Chemistry Teachers.

**Director-at-Large**

(Three-year terms, two to be elected)

**Phyllis A. Brauner**

*I am an "old-timer" who, through the years, has tried to initiate new ideas, some of which are still going strong.*

I sense that the needs of the membership are changing, and I have some ideas that I believe will be responsive to these needs. I hope to join with others to see how we can better serve the Section.

I also believe that the membership can serve itself through service to the public.

**Bonnie Carr**

(no statement received)

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**Board of Directors**

continued from page 4

of the Section. Special issues of the *Nucleus* will be published for these events.

**Nominating:** Dr. Strem presented the slate for the 1997 elections. The list will be read at the February Meeting and will be in the April *Nucleus*. A few gaps have to be filled, as yet, especially for the position of Secretary.

**Chemistry Education:** Dr. Tanner wrote to Dr. Idelson that the Student Affiliate Program is to be extended to include Community Colleges. There was a discussion of criteria for the *Aula Laudis*.

**Employment Services:** Concerning the Career Service Subcommittee, Dr. T. Light stated that there will be an Employment Services Table at every meeting. He asked members, especially those in academic institutions, to spread the news about available employment services both within the

Section and at the National Employment Clearing House.

**Constitut. and Bylaws:** Dr. Costello circulated a draft of proposed amendments. After discussion, the draft was APPROVED and will be forwarded to the national C&B committee for a preliminary review.

**Other Committees**

**Centennial:** Dr. Phillips will have a meeting March 3 at Polaroid. (Meeting postponed to March 24)

**Old Business:** It was announced that Dr. Charles Kolb won the National ACS Award for Environmental Science. There is a description in *C&EN*, January 13, 1997.

**New Business:** Dr. Michael Hearn (via J. Piper) forwarded a request to establish an audio-visual library in some central location. The request was made by a high-school teacher who has volunteered to help. ♦

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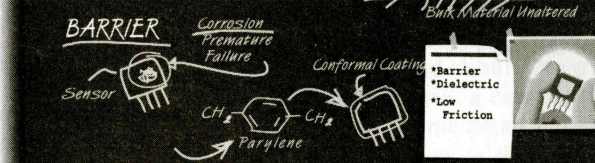
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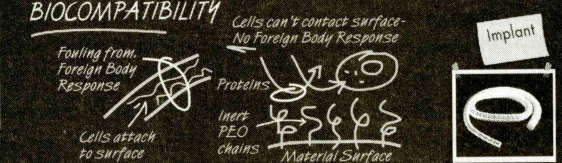
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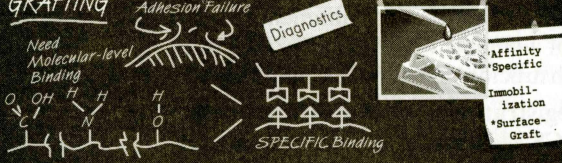
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# ACS Short Course

## Interpretation of Mass Spectra

A Two-Day Short Course Sponsored by the Northeastern Section, ACS, Committee on Continuing Education

National ACS is making top-rated ACS Short Courses available to local sections at tuition fees greatly reduced from the normal \$785. The NESACS Committee on Continuing Education is pleased to present this relatively new course, which has been offered successfully at each National ACS Meeting since 1992.

**Dates and Time:** Monday, May 12, 1997, 8:00 a.m. - 5:30 p.m.  
and Tuesday, May 13, 1997, 8:30 a.m. - 5:30 p.m.

**Place:** Snell Library, Room 90, Northeastern University,  
360 Huntington Ave., Boston, MA

### Program Agenda:

The nature of chemical bonding as it pertains to ion formation in the mass spectrometer.

Naturally occurring stable isotopic abundance in the interpretation of mass spectra.

Rules and patterns of fragmentation for different types of organic compounds.

Determination of data validity.

Correlation of characteristic mass spectral peaks with specific compound types.

Procedures for recognizing and validating a candidate for the molecular ion.

The significance of a library search in the interpretation of mass spectra.

How to recognize and interpret a mixed mass spectrum.

The importance of a chemical ionization spectrum to the interpretation of an electron ionization spectrum.

Dealing with mass spectra from alternate ionization techniques used for high molecular weight non-volatile molecules (FAB, Electrospray, MALD, etc.)

MS/MS: When to use it. How to interpret precursor (parent) - product (daughter) ion reactions.

**Instructor:** O. David Sparkman, an independent consultant in GC/MS and mass spectrometry who is currently working with the National Institute of Standards and Technology, has extensive experience in quadrupole ion traps, transmission quadrupoles, and sector instruments, and has been involved with the development of a number of different GC/MS data systems. He is one of the highest rated instructors in the ACS continuing education program.

### Pre-registration Required—Registration Fees:

ACS Members if received before April 28	\$225.00
after April 28	\$275.00
non-ACS Members if received before April 28	\$325.00
after April 28	\$375.00

There will be a limited number of scholarships for unemployed ACS Members on a space-available basis.

Parking Fee \$5.00/day University cafeterias will be available for lunches.

For further information contact: Prof. Alfred Viola - (617) 373 2809

### Registration form for Short Course: Interpretation of Mass Spectra

Name: \_\_\_\_\_ Affiliation: \_\_\_\_\_  
Mailing \_\_\_\_\_ Telephone: \_\_\_\_\_  
Address \_\_\_\_\_

Mail with remittance to: (Please make checks payable to NESACS)  
Prof. Alfred Viola, Chair NESACS Committee on Cont. Ed.,  
Department of Chemistry, Northeastern University, Boston, MA 02115

# Book Review

*Drugs and the Brain*, by Solomon H. Snyder (W.H. Freeman, 1996, an imprint of Scientific American Books, 228 pages, ISBN 0-7167-6017-7) \$19.95 (paperback)

Reviewed by Robert S. Umans  
(Department of Chemistry, Boston College)

Much of the recent surge of interest in the chemistry and biology of functioning of the brain has drawn upon progress made in understanding the mechanisms of action of psychoactive drugs. And surely few are more qualified to chronicle this progress than Solomon Snyder, the Johns Hopkins neuroscientist who has vastly enlarged our knowledge of the molecular processes by which these drugs exert their effects, and interpreted what these processes reveal about the functioning of the brain.

*Drugs and the Brain* is an engagingly told story of the discovery, development, use (and abuse) of psychoactive drugs, and of the insights brain researchers have gleaned from studying their action. In Snyder's words:

"This reciprocal interaction between drug development for therapeutic purposes and the use of drugs to understand the brain has been largely responsible for an explosion of brain research that began in the 1950s and continues today."

Snyder's training in psychiatry, combined with his career-long endeavors to unravel the mechanisms of neurotransmitter action, puts him in a unique position to synthesize the medical, biochemical, and neurophysiological aspects of the action of these drugs, and for the most part he tells his story with striking success.

Since psychoactive drugs work largely by influencing the transmis-

sion of nerve impulses, Snyder begins with an introduction to brain cells and to synaptic transmission. This brings him to neurotransmitters, the focus of his story, and to a detailed discussion of the activity of the model neurotransmitter acetylcholine. In discussing acetylcholine action he makes use of the approach he will bring to bear on the remaining neurotransmitters, a synthesis of the *historical perspective* (the discovery in the 1920s of the role of acetylcholine as a neurotransmitter), *biochemical perspective* (acetylcholine synthesis and release by the presynaptic neuron, uptake by receptors in the postsynaptic neuron, and breakdown by acetylcholine esterase), *neurophysiological perspective* (the location and function in the brain of acetylcholine-containing neurons), *medical perspective* (the role of acetylcholine deficiency in Alzheimer's disease), and *pharmacological perspective* (use of drugs that restore normal acetylcholine levels in treating Alzheimer's).

In subsequent chapters Snyder discusses six classes of psychoactive drugs: opiates (especially morphine and heroin), neuroleptics (antischizophrenics), stimulants (especially amphetamines and cocaine), anti-anxiety agents, antidepressants, and psychedelic drugs. For all of these he attempts the synthesis described above, mostly with admirable success.

Along the way we are treated to a number of original and penetrating observations. We learn, for example, that recognition of the addictive or euphoria-producing potential of a drug was often dependent on the social setting and commercial form in which the drug was produced. If those using it did not expect psychoactive effects, frequently they did not experience them (or discounted them if they did). Heroin, for example, was first marketed as a cough medicine in 1898, and its addicting potential was not recognized until many years later, while coca extract was introduced in 1863 in a wine touted for its delightful taste and ability to lift the spirits, and only after about 40 years (and

well after its incorporation into Coca-Cola) were its damaging side effects appreciated.

Snyder also describes an LSD "trip" he took, combining the clinician's eye for precise analysis with a poetic evocation of the sensory and visual hallucinations he experienced. The telling is so vivid that one almost experiences the harrowing, but (aptly, in the language of the day) "mind-blowing" trip with him.

The book is not without its flaws. Some could have been prevented by more careful proofreading, like a paragraph describing the action of nitric oxide which appears under the heading, "nitric acid." Or a figure which the text identifies as comparing the structures of ephedrine and epinephrine, but which actually compares the structures of ephedrine and amphetamine.

Nor was Snyder well-served by his editors in several figures which, while correct, display a level of detail reaching well beyond the discussion in the text. One lays out the components of first- and second-messenger action, for example, but includes terms (like "transducer" and "internal effector") and molecular designations ("Inositol triphosphate," "Diacylglycerol"), which are nowhere explained in the text. It will not do to say, as Snyder does, "The present state of knowledge is depicted in the figure on the previous page." Without explanation, most of the figure is meaningless and should have been omitted. Similarly, a complex figure laying out in some detail the metabolic transformations of the neurotransmitter gamma-aminobutyric acid (GABA), and the pathways by which its metabolites intersect with the reactions of carbohydrate metabolism, is not referred to at all in the text, except to identify GABA as an important inhibitory neurotransmitter. This figure too should have been omitted. All of this bespeaks overly hasty production.

But more serious is what appears to be some confusion in identifying the level of scientific sophistication of the book's readers. *Drugs and the*

*Brain* is presented under the heading of the Scientific American Library, suggesting that it is directed at an audience which is scientifically literate although not familiar with the areas of psychopharmacology and neurobiology. While much of the book is appropriately directed to this audience, some of the figures, such as those on pages 54 (chromatography profiles at various stages in the isolation and purification of enkephalins) and page 80 (graphs of average clinical daily dose of neuroleptics versus their  $K_i$  for blocking dopamine receptors), require a level of biochemical sophistication lacking in many (or most) who would read this book. At the same time, Snyder writes that the opiate etorphine

"... acts in humans at doses that are a small fraction of a milligram, less than a millionth of an ounce."

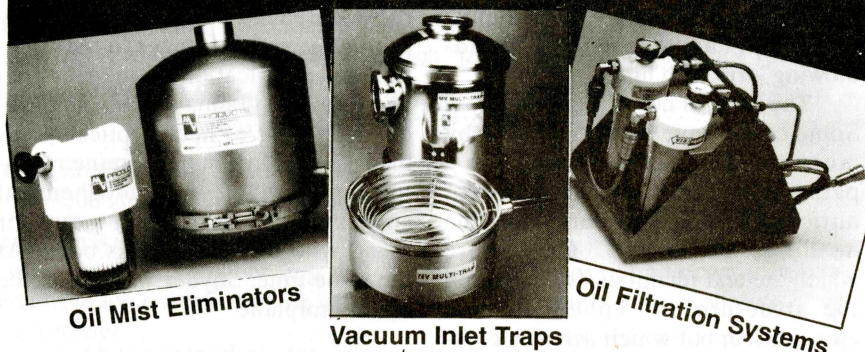
Surely anyone who can follow the aforementioned figures does not need to have the scale of milligrams explained, while anyone who needs to have milligrams explained would be lost in much of this book.

Finally, I wish Snyder had shared with us his views on some of the controversies regarding the development and use of psychoactive drugs, controversies he mentions but does not pursue. Lest I be accused of criticizing him for not writing the book he did not intend to write, I should note that he *does* weigh in on one of them, the overprescribing of Valium and other benzodiazepine tranquilizers:

"The drugs came to be used as panaceas, too often employed to relieve relatively moderate distress. Many doctors prescribed them even in the absence of genuine emotional disturbance, simply to help normal men and women cope with everyday life. Though benzodiazepines are relatively safe, such indiscriminate use is far from wise."

continued on page 18

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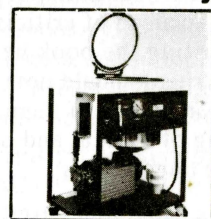
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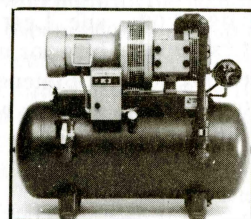
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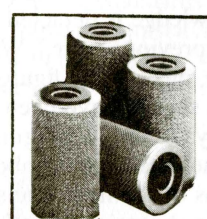
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## Book Review

continued from page 17

What are his thoughts, then, on the wisdom of administering Prozac and other serotonin reuptake-blocking antidepressants to patients "...with only mild depression and sometimes to patients who aren't clinically depressed but are simply feeling 'blue'."? (That this is not a farfetched occurrence was brought home to me when a friend related the story of a friend of hers who had recently broken up with her boyfriend. Feeling "down," she consulted her internist, who promptly put her on Prozac.) In using drugs to "remake personality," Snyder quotes the psychiatrist Peter Kramer, author of *Listening to Prozac*, as referring to "cosmetic psychopharmacology." Comments Snyder,

"Should drugs be reserved for treating serious illness, or is the reengineering of personality a legitimate goal? Today, these are the most widely debated questions in psychiatry and psychopharmacology." And later: "Whether these drugs are used too frequently in patients who might well recover without drug treatment is hotly debated."

Indeed. And where does Snyder, surely as steeped as anyone in the issues of the debate, come down on this pressing question?

Another controversial issue which he describes but does not pursue concerns the reluctance of the pharmaceutical industry to develop life-saving or life-enhancing drugs which do not appear likely to return large profits. Here is Snyder on the reaction of the industry in the United States to the successful use of lithium in Europe to treat the mania of bipolar affective disorder (manic-depressive illness):

"Even at this point, the drug was slow in catching on, especially in the United

States. Drug industry economics might have been a factor. The major antis-chizophrenic and antidepressant drugs, introduced to psychiatry in the mid-1950s, were all patented chemical entities. This means that each drug could only be sold by the firm that held the patent, guaranteeing considerable profit to the company in question. Lithium, being a well-known metal ion, was not patentable. Thus, it is hardly surprising that the major drug companies were reluctant to spend the many millions of dollars required for toxicity studies and clinical trials before such a product could be brought to market. Not until the mid-1960s was lithium marketed commercially in the United States and abroad, finally benefiting hundreds of thousands of patients afflicted with mania. It is not clear why drug companies overcame their initial reluctance to market the drug. One factor was presumably the moral imperative to provide a medication known to alleviate a serious illness. In any event, although lithium is not a major money-maker, it is nevertheless a profitable product for the companies that market it."

Is this profit-driven disregard of the "moral imperative" to develop a drug which could dramatically improve the quality of life for hundreds of thousands of patients (and their families) inevitable? One hopes not. Is there a way of inducing the pharmaceutical industry to develop such drugs, perhaps something akin to the "orphan drug" procedures? I would very much have wished to hear Snyder's thoughts on these questions. Perhaps we shall, in his next book. ◇

## Unauthorized Copying Penalized

From a News Release of the Business Software Alliance, dated November 11, 1996.

**Business Software Alliance Collects \$100,000 from Kentucky Firm. Unauthorized Copying on Computers Leads to Settlement.**

WASHINGTON (Nov. 12)—The Business Software Alliance (BSA) announced today that it has concluded an investigation into unauthorized copying of software at Fosroc, Inc., a manufacturer of construction and mining chemicals headquartered in Georgetown, Kentucky, with a payment of \$100,000 by the company. Under the settlement, Fosroc, Inc. has also purchased sufficient software licenses to meet its needs and strengthen its existing software management program.

Like most BSA's cases, the investigation of Fosroc, Inc. began with a call to BSA's Antipiracy hotline. After gathering additional information, BSA contacted Fosroc's management, seeking a full audit of the company's computers. Fosroc cooperated fully with BSA's request and moved swiftly to determine the scope of the problem. In the end, the audit revealed more copies of office software products by BSA members—Lotus, Microsoft, and Symantec—than Fosroc had licenses to support.

"This settlement will allow Fosroc to proceed with its plans to implement policies and practices to protect against software copyright infringement in the future," said Bob Kroger, BSA's Vice President of Enforcement. "Indeed, in addition to deleting any infringing copies, Fosroc has committed to acquiring and using only licensed software to meet its future business needs. The lesson for other companies is to

adopt strong software management practices before becoming subject to a BSA investigation."

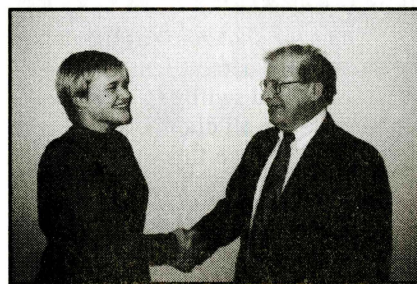
"Once the situation was brought to the attention of current senior management, we moved swiftly to quantify the problem, settle all claims, and ensure future compliance through a tightly controlled software installation program," said Andrew T. Rodgers, President and CEO of Fosroc, Inc. "As a good corporate citizen and owner of substantial intellectual property, it has always been this company's intention to fully comply with all copyright requirements."

The Business Software Alliance promotes the continued growth of the software industry through its international public policy, education, and enforcement programs in 65 countries throughout North America, Europe, Asia, and Latin America. BSA worldwide members include the leading publishers of software for personal computers including Adobe, Apple Computer, Autodesk, Bentley Systems, Lotus Development, Microsoft, Novell, The Santa Cruz Operation, and Symantec. Since its inception in 1988, BSA has filed more than 600 lawsuits worldwide against suspected copyright infringers.

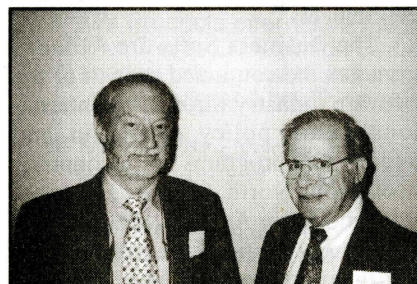
In addition to its public policy, education, and enforcement programs, the BSA also initiates audits of organizations suspected of using copied software. BSA operates 35 hotlines around the world for callers seeking information about copyright matters or to report suspected incidents of unauthorized copying software. Callers in the U.S. can dial the toll-free hotline 888-NO-PIRACY—to speak with experts who regularly staff the hotline.

For additional information: Diane Smiroldo, 202-530-5136; [diane@bsa.org](mailto:diane@bsa.org). ◇

## From the March Meeting



Sonja Fetela, the new Secretary, being congratulated by Dr. Idelson



Dr. Hans van Willigen, March speaker, and Dr. Idelson ◇

## Member News

We congratulate Dr. Charles Kolb who has been honored with the ACS Award for Creative Advances in Environmental Sciences and Technology. The award was given at the San Francisco ACS Meeting on April 15, 1997. In his honor the Division of Environmental Chemistry held a symposium on Atmospheric Chemistry as a Science and a Service. In addition to Dr. Kolb, Dr. Dudley Herschbach and Dr. Mario J. Molina of this section presented papers at this symposium, as well as two papers coauthored by Dr. Kolb. ◇

## Historical Notes

*Continuation of biographies of recently deceased members*

by Edward R. Atkinson,  
Amherst, Mass.

**Furth Fairbanks**, 71, a retired professor of chemical engineering, died of lymphoma on November 27, 1996. He was a California native who obtained a B.S. in mechanical engineering and an M.S. in chemistry at Berkeley. After service as an officer in the U.S. Navy during World War II he received the Sc.D. in chemical engineering at M.I.T. in 1953 and joined the faculty there. He later was employed as a research and development executive by the Dennison Manufacturing Company and by the Container Corporation of America. Just prior to his retirement in 1994 he was a member of the chemical engineering faculty at the University of Petroleum and Minerals, Dhahran, Saudi Arabia.

**Emmanuel H. Freedman**, 81, a retired pharmacist, died on October 9, 1996. He obtained the B.S. from the Massachusetts College of Pharmacy, then operated his own drug store. He was also employed as an industrial pharmacist by the federal Occupational Safety and Health Administration. He was a member of the ACS, the American Conference of Industrial Hygienists, and the Massachusetts Pharmaceutical Society.

**Robert P. Geyer**, 78, Professor Emeritus at the Harvard School of Public Health, died on January 16, 1997. He was a native of Racine, Wisconsin and obtained the Ph.D. in biochemistry at the University of Wisconsin in 1947. While on the faculty at Harvard he served as Chairman of the Department of Nutrition and specialized in problems of intravenous nutrition and in improving the taste of oral medicinals. He developed perfluorocarbon fluids as substitutes for whole blood. These materials can carry oxygen from the

lungs to the tissues. In animals they can replace almost all natural blood and clinical applications of these materials are in progress.

**Alphonsus F. Hayes**, 3rd, 47, died suddenly on August 31, 1996. Known to his associates as Al or Alfie, he was a native of Gloucester. He obtained the B.S. from Suffolk University and then was employed by W.R. Grace for 18 years. His work was in the areas of specialty polymer development and construction products. In the Gloucester community he was known as a devotee of popular music, antique cars, and athletics for young people.

**Otto J. Kalmes**, 64, died on August 31, 1996 after a long battle with cancer. He was a native of Hamburg, Germany and came to the US as a small boy. He graduated from Boston Latin in 1949, received the B.S. in chemical engineering from Northeastern University in 1954, and the Ph.D. from the Institute of Paper Chemistry in 1958. Mr. Kalmes' career was in the field of paper chemistry. In 1969 he founded the M/K Systems, Inc. He was a Fellow of TAPPI and was named Papermaker of the Year in 1993.

**Gloria Gilbert Lyle**, 73, died on December 17, 1996 after suffering a massive heart attack. She was a native of Atlanta, Georgia who received the B.A. *magna cum laude* from Vanderbilt University in 1944 and the M.S. from Emory University in 1946. She then taught chemistry at Hollins College in Virginia for one year. While her husband Robert was completing his graduate work at the University of Wisconsin Gloria was employed in cancer research at the McArdle Institute in Madison. After a short stay at Oberlin College the Lyles came to the University of New Hampshire in Durham in 1951. During the subsequent 25 years in Durham they both were active in the affairs of the Northeastern Section, the national ACS, and its Divisions. Robert was Chairman of the Section in 1970. During that period the chemistry department enlarged its graduate program and Gloria was among the first to receive the Ph.D. in chemistry from UNH. In 1993 the

department celebrated the centennial of its coming to Durham and Gloria returned as a featured speaker to reminisce about the years of her life in Durham. Gloria held appointments as a visiting scholar at Oxford University, the National Institute of Health, the University of Virginia, and the Laboratoire de Chimie Organique at Grenoble, France. She was a co-recipient of the Carol and Harry Mosher Award of the Santa Clara Section, ACS. She also held a Public Health Service post-doctoral fellowship.

In 1976 the Lyles, their Georgia accent still intact, fled to regions below Mason and Dixon's Line. Robert joined the faculty of the University of North Texas in Denton and Gloria the faculty of what is now the University's Health Science Center. In 1980 when Robert became vice president of chemistry and chemical engineering at the Southwest Research Institute in San Antonio, Texas, Gloria joined the faculty of the University of Texas, San Antonio. In 1993 the Lyles retired from their respective positions and founded the GRL Consultants with Gloria as President.

Gloria Lyle's research was primarily in the field of stereochemistry. She made wide use of optical rotatory dispersion and first described the phenomenon known as geometrical enantiomeric isomerism. Her researches were described in 42 papers, review chapters, and a patent and were supported by foundations, government agencies, and industrial organizations. During this work she directed three postdoctoral, ten doctoral, five masters, and many undergraduate theses. She was active in many professional, fraternal, and civic organizations. With her husband she shared in the activities of the Democratic Party. She was a member of the Gamma Phi Beta sorority and of the Beta Eta chapter of Alpha Chi Sigma. At the time of her death she was assistant editor of the fraternity's publication, *The Hexagon*. Her services to her profession spanned 50 years.

A photo of Gloria Lyle can be found on page 111 of the February 3,

1997 issue of *Chemical and Engineering News*.

**Joseph Charles O'Hara**, 86, died on October 28, 1996. He was a Dorchester native and a graduate of Boston's Mechanic Arts High School and Wentworth Institute. From 1928 until retirement in 1963 Mr. O'Hara served as a chemist for the Hood Rubber Company.

**Ruth S. Quinn**, 70, a retired biochemist, died on September 29, 1996. She was a Springfield, Mass. native who received the BS. from the University of Massachusetts (Amherst) in 1948 and the M.S. from Smith College in 1950. She served as a research associate at Johns Hopkins University (1950-1952) and at M.I.T. (1952-1954), then retired to raise two sons and a daughter with her husband, a gynecologist. In 1965 Mrs. Quinn joined the National Science Foundation program to educate women in science and obtained the M.S. in chemistry from Wellesley College and the Ph.D. in biochemistry from Harvard in 1972. She became a research fellow and instructor at the Harvard Medical School and at the Arthritis Unit of Massachusetts General Hospital.

**Luis A. Riva**, 70, (also known as Luis A. Riva Tupino, Jr.) died on November 22, 1996. He was a native of Lima, Peru and obtained the S.B. in chemical engineering from M.I.T. in 1950. He was employed by the Eastern Coal Company as a chemical engineer and manager of the company's research and development activity for thirty years prior to retirement in 1990.

**Pierre F. Smith**, 76, a retired professor of pharmacology at Northeastern University, died on January 2, 1997. He was a native of Tonawanda, N.Y. who received the B.S. from the University of Buffalo in 1941 and later the M.S. and Ph.D. degrees from the University of Maryland. During World War II he was a captain in the U.S. Navy Medical Service and remained active in the reserve corps until 1980. After the war, Mr. Smith taught at the

University of Rhode Island, Rutgers University, and Northeastern University, where he taught for 17 years prior to retirement. He was a member of several professional societies and fraternities.

**J. Edward Vivian**, 83, died on July 23, 1996. He was a Montreal native who as a boy aspired to a career as concert pianist. He received the B.S. from McGill University in 1936 and then became a member of the chemical engineering faculty at M.I.T. from 1938 until 1980, while obtaining the S.M. (1939) and Sc.D. (1945) degrees. Ed was involved in the Manhattan Project during World War II and later was a member of an advisory group in the Atomic Energy Commission. He served as executive officer of the chemical engineering department (1974-1980) and showed special interest in the department's Chemical Engineering Practice School. He was a visiting professor at the Birla Institute of Technology and Science, India (1972) and a consultant to the establishment of the National Institute of Industry, Madrid. His specialties were those of a classical chemical engineer: gas adsorption, kinetics, separation processes, distillation, air pollution control, and plant design. Ed was a member of several professional organizations and of Alpha Zeta of Alpha Chi Sigma.

**Donald D. Wright**, 99, died on February 10, 1996. He was a Michigan native who received the B.S. in chemical engineering from the University of Michigan in 1920. He served as chief chemist at the Hood Rubber division of B.F. Goodrich for forty years before retirement in 1962. Mr. Wright developed gasket materials for submarines and for the iron lung and other prosthetic devices. He was active in the affairs of the Boston Rubber Group and served on international committees that set standards for rubber products. He was a co-founder of the elastomer and plastics topical group of the Northeastern Section. He was a member of Alpha Beta of Alpha Chi Sigma. ◇

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# Calendar

## April 28

Prof. Robert Huber (Max-Planck-Inst. Biochemie, Martinsried, GER)  
1997 Max Tishler Lecture: "Structure and Function of Large Proteins and Protein Assemblies by X-ray Crystallography and Electron Microscopy"  
Harvard University  
Science Center D, 1 Oxford St., at 4 PM  
Harvard University

Dr. A. Angelopoulos (IBM Corp., Endicott, NY)  
"Absorption of Polyelectrolytes onto Epoxy Resin Surface"  
Tufts University  
AV Room, Science & Technol. Ctr., at 2:30 PM

## April 29

Prof. Robert Huber (Max-Planck-Inst. Biochemie, Martinsried, GER)  
"Proteolytic Enzymes and Their Inhibitors, Structures, Functions, and Tools for Basic Science and Medicine"  
Harvard University  
Pfizer Lecture Hall, Mb-23, 12 Oxford St., at 5:00 PM

## May 1

Prof. Gerhard Ertl (Fritz-Haber Inst., Max-Planck Gesellschaft)  
TBA  
Harvard University  
Pfizer Lect. Hall, Mb-23, 12 Oxford St., at 5:00 PM

Prof. Jan Hayes (Merced College) and Prof. Patricia Perez (Mt. San Antonio College)  
Multicultural Chemistry: What is it? Why is it? Should it be?  
Univ. Mass. Lowell  
Alumni Lounge, North Campus, at 4:00 PM; dinner follows  
Dinner Reservations due April 25; call (508) 934-2925

## May 5

Prof. Dennis Dougherty (Cal. Inst. of Technology)  
"Physical Organic Chemistry on the Brain - High Precision Studies of Ion Channel Proteins"  
Harvard University  
Pfizer Lect. Hall, Mb-23, 12 Oxford St., at 4:00 PM

## May 7

Prof. Kenneth R. Leopold (Univ. of Minnesota)  
"Partially Bonded Molecules from the Solid State to the Stratosphere"  
Harvard University  
Pfizer Lect. Hall, Mb-23, 12 Oxford St., at 4:00 PM

## May 8

Dr. Carl Matthew Selavka (NYS Division of Criminal Justice Services)  
"In the Wake of OJ: Some Lessons for Forensic Laboratories and Their Stakeholders"  
Northeastern University  
130 Hurtig Bldg., at 4:00 PM

## May 12

The Harry Wasserman Symposium:  
Prof. Samuel Danishefsky (Sloan-Kettering Inst. and Columbia Univ.)  
"Glycal Assembly in the Construction of Tumor Antigens and Glycopeptides"  
Prof. Tamio Hayashi (Kyoto Univ.)  
Title To Be Announced  
Prof. Harry Wasserman (Yale Univ.)  
"Vicinal Polycarbonyls and Related Systems in the Synthesis of Bioactive Molecules"  
Harvard University  
Pfizer Lecture Hall, Mb-23, 12 Oxford St., at 1:30 PM

## May 13

Prof. Stephen Buchwald (Mass. Inst. of Tech.)  
"New Palladium-Catalyzed Processes for Use in Organic Synthesis"  
Boston College  
Merkert Chem. Ctr., Room 127, at 4:00 PM

Prof. Jack Henion (Cornell Univ.)  
"LC/MS Applications: From Molecular Recognition to High Throughput Sample Analysis"  
Northeastern University  
129 Hurtig Bldg., at 4:00 PM

Dr. Reza Ohadiri (The Scripps Research Inst.)  
"Molecular Replication"  
Tufts University  
Pearson Hall, Rm. 106, at 4:30 PM

## May 15

Prof. Peter T. Lansbury (Brigham & Women's Hospital and Harvard Medical School)  
"Molecular Mechanism of Amyloid Formation in Alzheimer's Disease"

Mass. Inst. of Technology  
Faculty Club, Glycobiology Dinner Meeting at 6:30 PM  
Call (617) 642-0135 for reservations

## May 19

Prof. Kevan Shokat (Princeton Univ.)  
"New Chemical Approaches for Tracing Cellular Protein Kinase Cascades"  
Harvard University  
Pfizer Lect. Hall, Mb-23, 12 Oxford St., at 4:00 PM

## May 27

Dr. Michael Harmata (Univ. of Missouri, Columbia)  
"[4+3] Cycloadditions"  
Boston College  
Merkert Chem. Ctr., Room 127, at 4:00 PM

## June 2

Prof. Thomas Maniatis (Harvard Univ.)  
"Mechanisms of NF- $\kappa$ B Activation"  
Harvard University  
Pfizer Lect. Hall, Mb-23, 12 Oxford St., at 4 PM

## June 3

Prof. Greg Petsko (Brandeis Univ.)  
"Combinatorial Chemistry: A New Paradigm for Structure-Guided Drug Design"  
Northeastern University  
129 Hurtig Bldg., at 4:00 PM

## June 25

Prof. Paul Goetinck (Mass. General Hospital and Harvard Medical School)  
"C-Terminal G-3 Domain of Aggregan, its Influence on Glycosaminoglycan Addition"  
Mass. Inst. of Technology  
Faculty Club, Glycobiology Dinner Meeting at 6:30 PM  
Call (617) 642-0135 for reservations

Notices for the Nucleus  
Calendar should be sent to:  
Prof. Cathy Costello  
Mass Spectrometry Resource  
Dept. of Biophysics  
Boston Univ. Med. Ctr., R-806  
Boston, MA 02118-2394  
Tel.: (617) 638-6490  
Fax: (617) 638-6491, 638-6761  
e-mail: cecmsms@bu.edu

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19 Mill Road  
Harvard, MA 01451

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