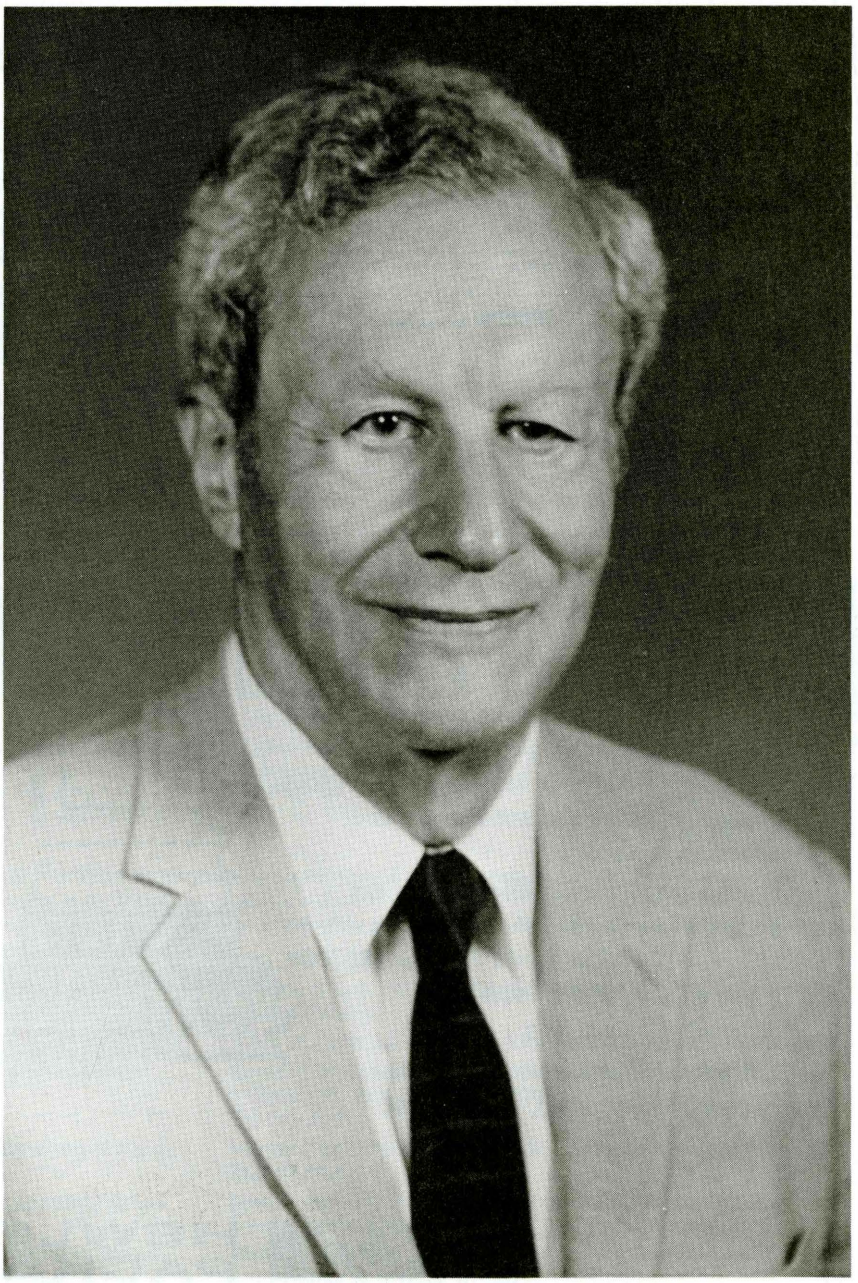
THE NUCLEUS

December 1988 *Of the Northeastern Section of the American Chemical Society* *Vol. LXVII, No. 3*

Monthly Meeting:

Prof. Westheimer on Educating Non-Scientists



ACS News

Councilors Report

Inside the Nucleus

Calendar

The Northeastern Section of The American Chemical Society Inc.
Office: Karen Piper, 19 Mill Road, Harvard, MA 01451, in 617 area 1-800-872-2054; (617) 456-8227
Any ACS Business may always be conducted via the business office above.

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Cover: *Professor Frank H. Westheimer*

January Issue Deadline: *November 20, 1988*

HAPPY HOLIDAYS

THE NUCLEUS

Dedicated to the Memory of James Flack Norris
Published monthly from October to May by the Northeastern Section of the American Chemical Society, Inc.

THE NUCLEUS is distributed to the members of the Northeastern Section of the American Chemical Society, to the secretaries of the Local Sections, and to editors of all local publications. Forms close for advertising on the 1st of the month of the preceding issue. Text must be received by the editor six weeks before the date of issue.

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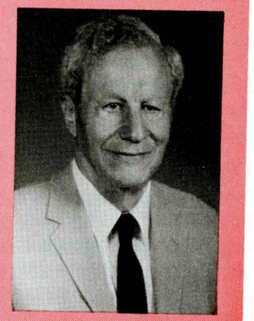
December Meeting

The 712th Meeting of the Northeastern Section of the American Chemical Society

Thursday, December 8, 1988

A Night to Honor



PROFESSOR FRANK WESTHEIMER

Simmons College, Main College Bldg.,
300 The Fenway, Boston, Massachusetts

5:30 p.m. Social Hour: The Fens Room

6:15 p.m. Buffet Dinner: The Fens Room

7:30 p.m. Presentation to Honor
Professor Frank Westheimer

7:45 p.m. Lecture—"Educating the Next Generation of Non-Scientists"
—Professor Frank H. Westheimer

Refreshments will be served after the program.

Dinner reservations must be made no later than December 2, 1988. Please call Mrs. Piper at (800) 872-2054 or (508) 456-8227. Reservations not cancelled at least 24 hours in advance must be paid. Members: $15.00; Non-members, $18.00; Students and Retired Chemists: $5.00. THE PUBLIC IS INVITED.

Abstract

Educating the Next Generation of Non-Scientists

In many, if not most colleges and universities in America, the education of scientists and non-scientists is highly asymmetric: while scientists learn a modest amount in the humanities and social sciences, humanists and social scientists are not even exposed to much science. This asymmetry results at least in part as a reaction to the vertical nature of education in science, where one concept is built upon another. The response of humanists and administrators to the need for sequences in science has been to reject science almost completely.

Science courses will benefit from diagnostic examinations, that is, tests to find where gaps exist in a student's knowledge that, if not repaired, will make further learning difficult. But much additional science for non-scientists will be needed for balanced education, and nothing will help much without that. Such reform will come (if it can be achieved at all) only at considerable cost in effort on the part of science faculty. ◇

Biography

Frank H. Westheimer

This year Dr. Frank H. Westheimer was awarded the Priestly Medal, the highest honor the ACS can bestow, for "distinguished services to chemistry." In his introduction of Dr. Westheimer at the Priestly Medal ceremony, ACS president Gordon Nelson gave the following background information:

"Dr. Frank Westheimer earned the B.S. degree in 1932 from Dartmouth College and the Ph.D. degree in 1935 with James Bryant Conant at Harvard University. After a postdoctoral year under the sponsorship of Louis P. Hammet, Dr. Westheimer joined the staff of the University of Chicago in 1936, reaching the rank of Professor in 1945. From there he joined the faculty at Harvard, where he has remained to date, currently holding the title of Morris Loeb Professor Emeritus.

Frank Westheimer's name is automatically associated with public service contributions as well as with the field of bio-organic chemistry. In the area of public service contributions, the Westheimer Report immediately comes to mind. The Report represented the first serious assessment of the past, present and future of chemistry, and had enormous effect on the field of chemistry itself. The Westheimer Report made chemists think about the nature of our science and about its future, and set the tone for a series of assessments that have now been undertaken again. In the area of scientific contributions, Frank Westheimer played a leadership role in combining aspects of molecular biology and chemistry, thereby virtually founding the field of bio-organic chemistry."

Other awards earned by Dr. Westheimer in his career include the National Medal of Science in 1986 and the Arthur C. Cope Award of the ACS, 1982, for outstanding achievement in organic chemistry. ◇

ACS News

The LA Meeting

Global warming, DNA analysis in criminal trials, nutrition and immunity, and superconductivity were among topics discussed at the American Chemical Society's 196th national meeting held September 25–30 in Los Angeles.

A close look at environmental problems, cancer, and human ill health was the highlight of a symposium on pesticides and cancer. Another symposium dealt with the preservation, treatment and chemistry of archaeological wood and wood in old shipwrecks. A treatment for fabrics that makes them cool in warm weather, warm in cool weather also was reported.

A new cigarette-cancer link, nerve regeneration, and research on baby teeth as indicators of environmental exposure was described. Effects of vitamin E and copper deficiency on the immune system, new cholesterol-lowering drugs, and a new cigarette that heats but does not burn tobacco also were examined. Other topics of special public interest included the following:

Citrus as a cancer preventive, effects of microwaving on food flavor, friction and wear in magnetic recording, urethane in processed foods and wine, and a new class of herbicides. Also, testing of recombinant bacteria that make plants frostproof, perfume chemistry, consumer products as a source of California air pollution, and safety issues for artists and art conservators.

Reports on progress in high-temperature superconductivity, theories on ozone depletion, new methods of determining the composition of planet surfaces, and potential effects of biotechnology on crops and market economics also were scheduled, along with nonmetal composites for automotive, aerospace, and recreational product applications. Another look at how the dinosaurs died and whether comet swarms caused biological crises found in fossil records were presented.

"New and Interesting Materials Through Biotechnology" was the title of a plenary session Monday evening featuring experts in five areas of this new field. Nobelist Glenn T. Seaborg of the University of California at Berkeley gave an illustrated address Sunday afternoon at the California Museum of Science and Industry on "Modern Alchemy—The New Elements," followed by colorful chemistry demonstrations.

Vitamin E Studied at Tufts

New studies suggest that depressed immune functions in elderly people can be partially improved with vitamin E supplements. They also indicate that in animals, at least, the more polyunsaturated fat there is in the diet, the greater is the need for vitamin E.

These findings were reported by Dr. Simin Nikbin Meydani at the 196th national meeting of the American Chemical Society. Dr. Meydani is an assistant professor at the U.S. Department of Agriculture's Human Nutrition Research Center on Aging at Tufts University in Boston.

As humans age, their ability to resist disease tends to decline because the immune system becomes less effective. Dr. Meydani said her group has found that some dietary antioxidants—particularly vitamin E and a substance called glutathione—can reverse some of the declines in immunity which occur during aging, and therefore should make it easier for the elderly to fight off disease.

"When vitamin E supplements were given to healthy elderly subjects for about one month, improvements in their immune responsiveness were noted," she said. These included increases in cellular immunity and challenges to their white blood cells, or lymphocytes. Some 34 human subjects were in the double-blind study; 17 on placebos and 17 on vitamin E supplements.

Based on her results, which she believes are the first for human trials, she said that dietary requirements for vitamin E may be greater than currently recommended.

She also noted that in preliminary studies with animals, the requirement for vitamin E depends on the kinds of fat in the diet. The more polyunsaturated fats, the greater the need for vitamin E.

In the past decade, it has been recognized that diet and nutrition play an important role in maintaining immune function and protecting against infectious disease and cancer. Recent animal studies also indicate that eating calorically restricted diets which are sufficient in all the essential vitamins and minerals prolongs and preserves immune function during aging.

"But we have not clearly understood the role of individual nutrients in the process or their potential for beneficial effects on the less vigorous immune system observed in the elderly," Dr. Meydani said.

She noted that her findings with vitamin E were observed first in animal studies. "When we fed very old laboratory mice diets containing high levels of vitamin E or glutathione, we found that their immune system was significantly more responsive and mounted a response closer to that of young mice than those fed standard levels of these nutrients."

How these antioxidants work is not known, admits Dr. Meydani. However, the studies using vitamin E showed increases in interleukin-2, a substance that promotes the growth of white blood cells. They also showed a decrease in prostaglandin E2, a substance that suppresses white blood cells and which the body seems to make more of with age. These biochemical changes may be the result of vitamin E influencing the metabolism of arachidonic acid, Dr. Medani said. Arachidonic acid is a fatty acid which can be oxidized to produce prostaglandins and other important mediators of immune function.

"With the exception of calorie restriction in animal models, efforts to retard the decline in immune function with age have not been successful and/or practical. Our research suggests that intervention in the aging process through increased intake of dietary antioxidants like vitamin E may be beneficial, but further research is necessary to substantiate this hypothesis," she cautioned.

Summary of a paper by Dr. S. N. Meydani, J. B. Blumberg, G. Yogeeswaran, and M. Meydani of the Nutritional Immunology and Toxicology Laboratory, USDA Human Nutrition Research Center on Aging at Tufts University, presented at the 196th national meeting of the American Chemical Society before the Division of Agricultural and Food Chemistry at the Sheraton Grande, Concours Salon 1 (2nd level), on Thursday, Sept. 29, at 2 p.m.

Dr. Meydani can be reached at (617) 556-3129.

Drug Release Implants Developed at MIT

Biodegradable, drug-releasing plastic implants are being tested in humans for treating brain cancer, Dr. Robert Langer of the Massachusetts Institute of Technology reported at the 196th national meeting of the American Chemical Society. He also described a new plastic that could be particularly valuable someday in vaccine-releasing implants for viral diseases like hepatitis and AIDS.

The plastic, or polymer, in the brain-cancer implants is a polyanhydride, one of a class of materials developed by Dr. Langer and his co-workers. The plastic wears away in the body much like a bar of soap wears away in the bath. This process, called surface erosion, has several advantages in implants, he said. The drug is released at a constant rate, drug molecules of any size can be used, and the polymer and drug disappear at the same time. Polyanhydrides can be designed with drug-release times from one day to as long as six years, Dr. Langer reported.

Brain-cancer tests of the implants in eight patients are being conducted by Dr. Henry Brem at the Johns Hopkins University Medical School, Baltimore, Md. Another 13 patients are in treatment at the University of Alabama, Northwestern, UCLA, and Duke. All of these tests are sponsored by Nova Pharmaceutical Corp., Baltimore, which has licensed the polyanhydride implant technology from MIT.

The implants are about the size and shape of a quarter, Dr. Brem said in a telephone interview. They contain the chemotherapeutic agent BCNU. After surgery to remove cancerous tissue, an implant is placed in the brain where it slowly releases the BCNU to prevent cancer cells from growing back.

The implant is very efficient because it releases the drug directly and continuously in the critical area. "Every cell sees fresh BCNU," Dr. Brem said. This is not true with the usual method of giving the drug—intravenous injection. Also, some of the injected BCNU reaches the bone marrow and lungs, where the drug is highly toxic. Only trivial amounts of BCNU reach those areas with the implant method. The implant is gone from the brain in about a month, and the plastic thus far has proved extremely nontoxic. The efficacy of the treatment will not be clear for a year or two, but Dr. Brem is optimistic.

The polymers with potential for releasing vaccines in the body are called pseudo polyamino acids. They were developed by Dr. Langer and co-workers Joachim Kohn and Doug Kline by stringing together amino acids, the building blocks of proteins, with special kinds of chemical bonds. The bonds are selected to give the polymers desirable properties, such as excellent mechanical properties or lack of resistance to breakdown by water.

Implants of some of these polymers in mice break down to release fragments that stimulate the immune system, Dr. Langer said. The immune system normally produces antibodies that overpower foreign substances in the body; vaccines work by causing the system to produce antibodies against specific disease-causing substances.

continued on page 8.

Councilors Report

Votes at the Los Angeles ACS Meeting

The following Councilors or Alternate Councilors (designated by asterisk*) represented the Northeastern Section at the Region I Caucus and Council Meeting of the Los Angeles National Meeting of the American Chemical Society, and voted on agenda scheduled business as follows:

VOTING ISSUES — COUNCILORS	MARY BURGESS	ADRIENNE DEY	MICHAELINE CHEN	ARNO HEYN	ESTHER HOPKINS	TRUMAN LIGHT	JOHN NEUMEYER	PATRICIA SAMUEL*	MARYANN SOLSTAD	VALERIE WILCOX*	ALFRED VIOLA	COUNCIL
1. (Free Access to) Meetings of Society												
Recorded Vote	N	Y	N	N	Y	N	N	N	Y	N	N	N
Sense of Council	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Refer to CPC	Y	N	Y	Y	N	Y	Y	N	N	N	Y	Y
2. Revision of Emeritus Status	Y	Y	Y	A	Y	Y	Y	Y	Y	Y	Y	Y
3. Approval of PEG (Professional Employment Guidelines)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
4. Divisional Membership Count	Y	N	Y	Y	Y	Y	Y	N	N	Y	Y	Y

Y = YES N = NO A = ABSTAIN

Other notes and news:
Arno Heyn is Vice-Chairman, CPC (Council Policy Committee) and assisted ACS President Gordon Nelson in running the Council Meeting; Heyn was re-elected to another CPC term (1989–91); Esther Hopkins is Chairman, Committee on Professional Relations (CPR) and was recently involved with the revision of the Professional Employment Guidelines (PEG) and developed the Petition for Free Access to Meetings;

The following Northeastern Section Councilors and Members were noted as active on Committees and Divisions: Adrienne Dey, Mary Burgess, Michael Strem (Professional Relations); Truman Light (Constitution and Bylaws); James Kaufmann, Maryann Solstad (Chemical Safety); Avrom Medalia (Colloids and Surface Chemistry, Meetings and Expositions); Michael Strem (Small Chemical Businesses); Dudley Herschbach (Chemical Education); Elizabeth Rock (Women Chemists); Albert Kirsch (History of Chemistry); Eli Dannenberg (Rubber); Stanley Israel, Ann Salamone (Polymer Chemistry);

The 1990 Spring Meeting of the American Chemical Society is scheduled to be held in Boston.

Submitted by Truman S. Light, Councilor-Coordinator of the NESACS Councilor delegation at the Los Angeles Meeting, September 28, 1988

ACS News

continued from page 7.

Dr. Langer and his colleagues found that one injection of a foreign protein in mice fitted with implants produced unusually high levels of antibodies that have persisted for more than a year. If the same thing happens in humans, implants made of pseudo polyamino acids could sharply enhance the protective effect of protein vaccines, Dr. Langer said. Protein vaccines are used against diseases caused by viruses, such as hepatitis B and AIDS, though no vaccine is yet available for AIDS. ◇

Summary of a paper by Dr. Robert Langer of MIT, Cambridge, Mass., presented at the 196th national meeting of the American Chemical Society before the Division of Microbial and Biochemical Technology at the Sheraton Grande, Grande Salon 2 (2nd Level), on Monday, Sept. 26, 1988, at 3:20 p.m.

Dr. Langer's telephone number in Cambridge is 617-253-3107.

American Chemical Society

1989 Membership Application

1155 Sixteenth Street, N.W., Washington, D.C. • (202) 872-4600

An Invitation

The American Chemical Society, the world's largest scientific organization, invites you to join in membership with 137,000 other chemists and scientists in allied fields. We hope this application will provide the opportunity for you to take advantage of the many benefits ACS offers to its members.

(Please type or print.)

Mr., Mrs. _____
Dr., Miss, Ms. Family Name First Middle

Mailing Address _____

_____

Telephone: Home _____ (Area Code) Office _____ (Area Code)

Academic Training

Name of College or University (Including current enrollment)	City and State	Curriculum Major	Years of Attendance	Title of Degree(s) Received or Expected	Date Degree Received or Expected

Courses Completed

Not required of those with a bachelor's, master's, or doctor's degree in chemistry or a closely related science.

Please list completed courses (by title) in the chemical sciences (attach separate sheet or transcript if more space is needed). Quarter hour credits should be multiplied by two-thirds. If school did not use a credit hour system, please estimate credits on basis of 15 lecture clock hours or 45 laboratory clock hours as equivalent to one semester hour credit.

Course Title	Semester Hours	Course Title	Semester Hours	Course Title	Semester Hours

The Admissions Committee will review all applications in accordance with the criteria for membership.

Nomination

Nomination by two ACS members is required by ACS Bylaws. If this presents difficulty, we suggest you contact the Washington office. Such nomination is not necessary for former members. Student affiliation does not constitute membership. The requirement of having two nominating signatures may be waived by the Admissions Committee in cases where applicant lives in areas remote from ACS members.

We recommend _____ *for membership in the American Chemical Society.*
(Name of Applicant)

ACS Member: _____
(Signature) (Printed Name)

ACS Member: _____
(Signature) (Printed Name)

This space for use of ADMISSIONS COMMITTEE

Local Section/Division Commission Claim

1 2 3 4 6 N

Statistical Information

(Please type or print.)

Mr., Mrs. _____
Dr., Miss, Ms. Family Name First Middle

Mailing Address _____

_____

Date of Birth _____ Sex ☐ F ☐ M Telephone: Home _____ Area Code Office _____ Area Code

(Information needed for statistical purposes)

Previous Membership I have ☐ have not ☐ previously been a member.
I have ☐ have not ☐ previously been a student affiliate.

Office Use Only

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MJR _____
DEL _____
HDL _____
MED _____
CSD _____
PNI 8921B
TEC _____

Professional Experience

Job Title: _____ Employer _____

Employer City, State, Zip _____ Starting Date _____ MO/YR

Nature of Business: ☐ Manufacturer ☐ Academic ☐ Government

☐ Other _____ (Please specify)

Dues/Subscriptions/Divisions

☐ **FREE DIVISION MEMBERSHIP FOR NEW MEMBERS FOR ONE YEAR!** Check here if you wish complete information.

There are four start dates for membership: 1 January, 1 April, 1 July, and 1 October. We are anxious to begin your membership as soon as possible and will therefore enroll you immediately upon approval of your application by the ACS Admissions Committee. Dues for 1988 are $79.00. Your membership will begin at the nearest quarter and you will be billed accordingly. Those entering 1 October will be billed for the three months of the year plus the full dues for the following year (or 15 months dues) or at the new member's option, may pay for the final three months of the current year only. Former members who did not resign will be assessed a $10.00 reinstatement fee. *Please send no money now.*

Student Dues

If you are a student majoring in the chemical sciences, a 50% reduction on membership dues is available. To apply you must be registered for a least six credit hours as an undergraduate or be enrolled as a full-time graduate student.

I am ☐ an undergraduate student enrolled as described above.
I am ☐ a graduate student enrolled as described above. _____ Name of College or University

National Affiliation

National Affiliates pay three-quarters dues (i.e., $59.25) and likewise will receive a prorated bill based on the quarter National Affiliation begins.

Husband/Wife Dues

If you are the spouse of a member receiving *C&EN,* 23% (of the prorated amount) will be deducted from your bill. This is the portion that is alloted for *C&EN.* If you are eligible, please give the name of your spouse and his/her membership number.

_____ _____
Spouse's Name Membership Number

If you wish to subscribe to any ACS publications, please list them below.

_____ _____

_____ _____

Remember, send no money now.

Agreement

I attest to the accuracy of information on the application. I agree to restrict for my own personal use all publications to which I subscribe at member rates. I understand that membership dues are payable annually unless my signed resignation is received by the Executive Director before January 1 of the year for which my resignation is to take effect.

_____
Date Signature of Applicant

IUPAC Affiliation

The International Union of Pure and Applied Chemistry (IUPAC) offers individual Affiliation to members of national chemical societies. Recognized by all the sciences and by the national level academies of science as the international representative body for chemistry, IUPAC is the authority on chemical nomenclature, terminology, symbols, atomic weights, and related topics. IUPAC Affiliate dues for ACS members residing in the U.S. are $20.00 and include a subscription to *Chemistry International* magazine.

☐ IUPAC Affiliation $20.00 (U.S. members only).

Inside the Nucleus

by Adrienne S. Dey

The Board of Publications has asked me to answer in this space some of the questions which are often raised about the Nucleus. The question which is probably heard most often has to do with the closing date for submission of material for each issue and it has taken some of the following forms:

"You don't *really* need six weeks before the date of publication! When is the "real" closing date?"

"Don't you just print the Nucleus in your basement the day before it appears in my mailbox?"

"Surely you are just giving me a hard time by not including my article which I submitted promptly three weeks after the deadline?"

And so forth . . .

Well, folks, it really does take six weeks for timely publication and delivery of the Nucleus. First of all, the Nucleus is mailed third class (since first class would be prohibitively expensive) and the post office requires at least two, and often three, weeks to deliver it to most of our members. If you live in some towns such as Lexington you may always receive it late no matter what we do and you should take this up with your local post office. Extra time for the mailing is a good idea to allow for storms, holidays, missing mailing labels, malfunctioning equipment, and other catastrophes.

The other three weeks are needed to convert the raw material received by the editor into the finished copies ready to be mailed. After the closing date the editor needs a few days to edit and organize the material and to prepare the layout for each issue. This often has to be done on a weekend. The rough mock-up of the issue is sent to the typesetter where the text is typeset and then arranged on each page according to the instructions provided by the editor. At this point it is usually necessary to do a little further editing to make the text fit nicely and for the design of each page to look as nice as possible. The editor has to do this at the typesetters during working hours; a second proofreader is usually present at this time to read the text very carefully. Another day is needed by the typesetter to make changes and corrections; then the camera-ready boards are ready for a final inspection by the editor before they are sent to the printer. At this point it is about two and a half weeks after the closing date.

The printer requires the boards a full day before the prearranged printing date. Printing is done on a web-offset press which is very economical but which constrains us to produce issues with a number of pages in increments of 8 (the typical Nucleus has 16 pages). The in-house bindery puts in the staples and trims the issues and then the mailing house puts on the mailing labels and takes the bundles to the post office.

So that is the story of the six weeks and you can see that it is not a conspiracy!

The Missing Minutes For those who have been asking why I haven't published any minutes of NESACS Board of Directors meetings recently, the answer is that no one has seen any since last March. If we ever get them they may have to be published as Historical Notes.

Noted with Pleasure After a long hiatus, we again have a Councilors report in this issue. Councilors are elected by the members to be their representatives at national meetings and the Northeastern Section, together with national ACS, covers their travel costs so it is appropriate that their voting record be available to the members.

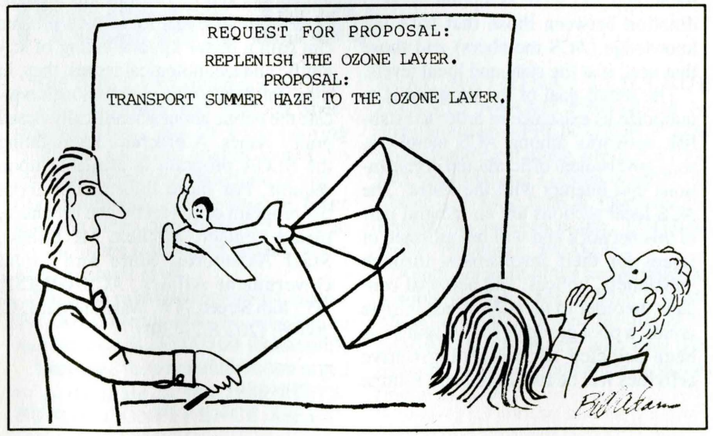
The I-Didn't-Think-I-Would-Live-Long-Enough Award This new award goes to our current chairman, Tom Gilbert, who got the ball rolling on an amendment to the NESACS Constitution (see page 4 of the November Nucleus) which will make some of the funds in the income account of the Richards Fund available for worthy projects of the section. I have pointed out on previous occasions that relatively large sums have been accumulating in the various income accounts of the section trust funds but that most of this money was being plowed back into the corpus of the funds ("to protect the endowment from inflation") instead of some of it being made available by the trustees for section activities. I guess we won't have to save it all to build a mausoleum after all!

Humor, Anyone? For the past several years the April issue of the Nucleus has contained some April-fools material. The first time Peter Meltzer, who was then Associate Editor, and I did this, it caused a veritable furor on the Board of Directors with calls for my impeachment, etc. The membership, however, reelected me that year as a Councilor with more votes than I had ever received before so I took this as a vote of confidence. During the next couple of years the spoof material was so subtle that some people thought it was real (remember the one about the battery with the gold cathode?). Now the April 1988 issue has again caused some members of the Board to rise in righteous indignation. The missing minutes would reveal that a couple of months ago a motion was even made to forbid the editor from ever again including any humorous material in the Nucleus. Fortunately this motion was defeated.

What to make of this? Certainly there is an excess of bozoamine in some quarters. But there is zero feedback from the membership, either pro or con. How about some letters to the editor? It is interesting to note that when the editor has requested humorous contributions, people have responded with enthusiasm and in a timely manner, something which is not usually the case otherwise. Maybe most chemists are not capable of "great" humor but it is fun nevertheless!

Membership News Dr. Judith H. Clausen, who operates her own consulting business in the field of chemistry and environmental health and who works with clients on compliance with OSHA regulations, has sent us news of her recent Sesquicentennial Award from the Mount Holyoke College Alumnae Association. The award was designed to recognize women who use their diverse talents with professional distinction, sustained commitment, and creativity, and who reflect the vision and pioneering spirit of Mount Holyoke's founder, Mary Lyon. Our congratulations go to Dr. Clausen.

Dr. Clausen adds to her note that she thinks the Nucleus should report positive news of members, not just deaths. The editor could not agree more and has in fact said the same thing herself! However, a person to compile such a membership news column has been quite impossible to locate in spite of continuing efforts. Any volunteers out there? Such a column could be quite fun to compile and the effort on the part of contributors is just a few words on a postcard and a few cents for a stamp. So how about it? The editor can't do it all alone. ◇



ACS Tracks Legislation

New Program Zeros in on the States

Community right-to-know • worker safety and health • ground water • productivity • waste disposal • technological education • R&D funding. . . . These are just some of the issues concerning the public today. Anxious to address these issues, state legislatures are moving forward to ensure economic stability and environmental safety for their people. The tables are turning. In many cases it is the states that are establishing policies and setting precedents on national issues—not the federal government. Many of these policies affect the chemical sciences and the day-to-day activities of its practitioners.

ACS and its members have become increasingly aware of these changing trends. In December 1987, the ACS Board of Directors moved to ensure that the Society is positioned to respond to state and local government policymakers in need of technical advice pertaining to the chemical sciences. As a result, a new program for *State and Local Government Affairs* (SLGA) was established within the Department of Government Relations and Science Policy early this year. The state and local government affairs program at ACS will work to determine the key issues in areas such as the environment, chemical safety and health, education, research, and technological development, and will serve as a point of coordination between those that have the knowledge (ACS members) and those that need it at the state and local levels.

The initial goal of the program is to publicize its existence in order to establish networks among ACS members, state government officials and organizations that interact with the states. The ACS local sections are an integral part of this network and will be informed of issues for their involvement through newsletters, notices, and personal contacts. In order to identify trends in state issues, a pilot group of twelve states has been selected for which legislative activities will be monitored on a routine basis. This initial group includes states that are known as legislative "trendsetters," and states that have undertaken new initiatives in areas that could affect the chemical sciences. All states will be monitored for activities on a few selected, key issues that are likely to have the greatest impact on the chemical sciences and its practitioners. A computerized legislative tracking service is being used to assist program staff with monitoring activities. ACS members are encouraged to participate in the SLGA program, to use it as a resource for identifying issues to which they might lend their expertise, and to establish contacts with government policymakers and citizen groups in their areas. These types of contacts will allow outside groups to see a more personal side of chemistry, which in turn, might alleviate some of their misconceptions about the chemical sciences and allow them to gain a better understanding of the contributions that science and technology make to their lives. Information about the SLGA program, as well as assistance from it, will be made available to selected state representatives and organizations.

The willingness of chemists and chemical engineers to become involved in science policy development will help to ensure that "sound science" is used when laws and regulations are written. If those in state and local governments can gain a better understanding of scientific and technological issues, they, in turn, can help science professionals educate the public about scientifically-based policy issues. A brochure highlighting the SLGA program is available upon request. For more information about the program or to receive the brochure, please contact: Michele M. Boisse, Staff Associate, State and Local Government Affairs, ACS-GRASP, 1155 16th Street, NW, Washington, D.C. 20036; (202-872-4391). ◊

Project SEED Turns 20

by Jeannette E. Brown

The American Chemical Society's Project SEED is celebrating its 20th Anniversary this year. Project SEED—Summer Educational Experience for the Disadvantaged—is the social action and education program of the American Chemical Society (ACS). It offers economically disadvantaged high school students 10 weeks of research experience at a nearby college or university, industrial, or governmental laboratory. This research experience encourages SEED students to consider wider educational and career possibilities. Historically, more than 60% of SEED students have been members of minority groups, and more than 50% have been female. In its 20 years, more than 2,000 students have benefitted from Project SEED.

Contributions to Project SEED come from industry, ACS members, and local sections. Perhaps the most important support from local sections results from their efforts to help organize area Project SEED programs and assist local sites in raising funds. For example, the Executive Committee of the North Jersey Section will commemorate the 20th Anniversary by contributing, individually, a minimum of $2.00 to Project SEED and by urging all members of the section to do likewise.

At their March meeting, the Committee on Project SEED found that there was simply not enough money to fund all the requests for student support in 1988. At least 40 prospective SEED students could not be supported. Please help us double the contributions of the Society membership in 1988 in honor of the 20th Anniversary of Project SEED. Send your contributions or requests for information to ACS Project SEED, American Chemical Society, 1155 16th St., N.W., Washington, D.C. 20036. ◊

College Grants Award Program 1989

The Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy, Inc., and its cosponsoring technical societies makes awards to small colleges for the purchase of scientific equipment, audio-visual or other teaching aides, and/or library material for use in the teaching of science at the undergraduate level.

Based on submitted proposals, at least ten (10) colleges will be selected to receive awards ($3,000.00 maximum).

Interested faculty members are urged to participate in the 1989 PITTSBURGH CONFERENCE MEMORIAL NATIONAL COLLEGE GRANTS AWARD PROGRAM by completing an APPLICATION FORM and submitting it along with a PROPOSAL (original and 3 copies of each), by March 1, 1989 to John A. Queiser, The Pittsburgh Conference, Inc., 12 Federal Drive, Pittsburgh, PA 15235.

Announcement of the award-winning schools will be made by May 1, 1989. These schools will join the list of 91 previous award-winners who have participated in the program since its inception in 1974. ◊

Fellowships for Nuclear Chemistry Summer School for Chemistry Majors

by Paul J. Karol

Twenty-four fellowships are available for qualified chemistry majors finishing their sophomore or junior years to attend the Summer School in Nuclear Chemistry at either San Jose, California or Upton, Long Island, New York. The awards include transportation, books, fees, room and board as well as six units of college credit. The program of lectures, laboratories, and tours is designed to interest students in pursuing a career in nuclear chemistry in order to alleviate a severe shortage of manpower in a number of areas of national need: health care, including nuclear medicine, the radiopharmaceutical industry, national security, nuclear energy, nuclear waste isolation, environmental issues and fundamental nuclear science. Graduates of the Summer Schools are assisted in finding employment the following summer at national laboratories, universities or in industry. Applications, due January 30, 1989, and further information may be obtained from:

Summer Schools in Nuclear Chemistry
Attn: Dr. P. A. Baisden L-234-rc
Lawrence Livermore National Laboratory
P. O. Box 808
Livermore, California 94551

Calendar

For additional information, call:
Boston College – (617) 552-3605
Brandeis University – (617) 736-2500
Harvard University (Chemistry) – (617) 495-4070
Massachusetts Institute of Technology – (617) 235-1596
Tufts University Health Science Seminar Series – (617) 628-5000
University of Massachusetts at Boston

Thursday, Dec. 1

Dr. Kilaparti Ramakrishna
(Woods Hole Oceanographic Institution)
"Global Climate Change and International Politics"
University of Massachusetts at Boston
McCormack Hall room 423 at 3:30 p.m.

Professor William H. Orme-Johnson
(MIT)
"The Bioinorganic Chemistry and Molecular Biology of Metal-Sulfur Clusters
Boston College
Gasson Hall room 305 at 4:00 p.m.

Professor Don C. Wiley (Harvard)
JOINT HARVARD/MIT PHYSICAL CHEMISTRY SEMINAR
"Structure/Function Studies of Membrane Glycoproteins from Influenza Virus and Human Cells"
Harvard University
Mallinckrodt MB-23 at 8:00 p.m.

Monday, Dec. 5

Professor Graham Fleming
(Univ. of Chicago)
Arthur D. Little Lecturer
"The Primary Steps in Photosynthesis"
Massachusetts Institute of Technology
Room 4-270 at 4:00 p.m.

Dr. James Hofrichte
(National Institute of Health)
"Time-resolved Absorption Spectroscopy: The Photocycles of Bacteriorhodopsin in Light- and Dark-adapted Purple Membrane
Brandeis University
Gerstenzang 122 at 4:00 p.m.

Tuesday, Dec. 6

Professor Graham Fleming
(Univ. of Chicago)
Arthur D. Little Lecturer
"The Dynamics of Polar Solvation"
Massachusetts Instituteof Technology
Room 4-370 at 4:00 p.m.

Dr. Harvey Penefsky (SUNY-Syracuse)
"Recent Thoughts on the Mechanism of Action of Mitochondrial ATPase in ATP Synthesis and Hydrolysis"
Tufts University Health Sciences Campus
Sackler Building Dublois A auditorium
at 4:00 p.m.

Thursday, Dec. 8

Professor Graham Fleming
(Univ. of Chicago)
Arthur D. Little Lecturer
"Tryptophan and the Internal Motions of Peptides and Proteins"
Massachusetts Institute of Technology
Room 4-370 at 4:00 pm

Dr. Gregory A. Petsko
(Massachusetts Institute of Technology)
"Building Better Mousetraps: Protein Engineering"
University of Massachusetts at Boston
McCormack Hall room 423 at 3:30 p.m.

Professor Nicholas Kildahl
(Worcester Polytechnic Institute)
"Some Unusual Cobalt (I) Chemistry"
Boston College
Gasson Hall room 305 at 4:00 p.m.

Thursday, Dec. 15

Professor Frank Bottomley
(Univ. of New Brunswick)
JOINT HARVARD/MIT INORGANIC CHEMISTRY SEMINAR
"Organometallic Oxides"
Harvard University
Mallinckrodt MB-23 at 5:00 p.m.

Tuesday, Dec. 20

Dr. Fred Sherman
(University of Rochester Medical School)
"Post-translational Modification of Yeast Cytochrome c"
Tufts University Health Sciences Campus
Sackler Building Dublois A auditorium
at 4:00 p.m.

Notices for the NUCLEUS Calendar should be sent to:
Cynthia B. McGowan
Department of Chemistry
Wellesley College
Wellesley, MA 02181
Phone: (617) 253-0320 ext 3112

(Note: Material should be sent so that it arrives before the first of the month prior to the month for which the event is scheduled.)

THE NUCLEUS
Northeastern Section of the American Chemical Society
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