

THE NUCLEUS

August 1989

Of the Northeastern Section of the American Chemical Society

Vol. LXVII, No. 9

Summerthing:

*At Lowell Historical Park
and U. of Lowell
joint with AIC*

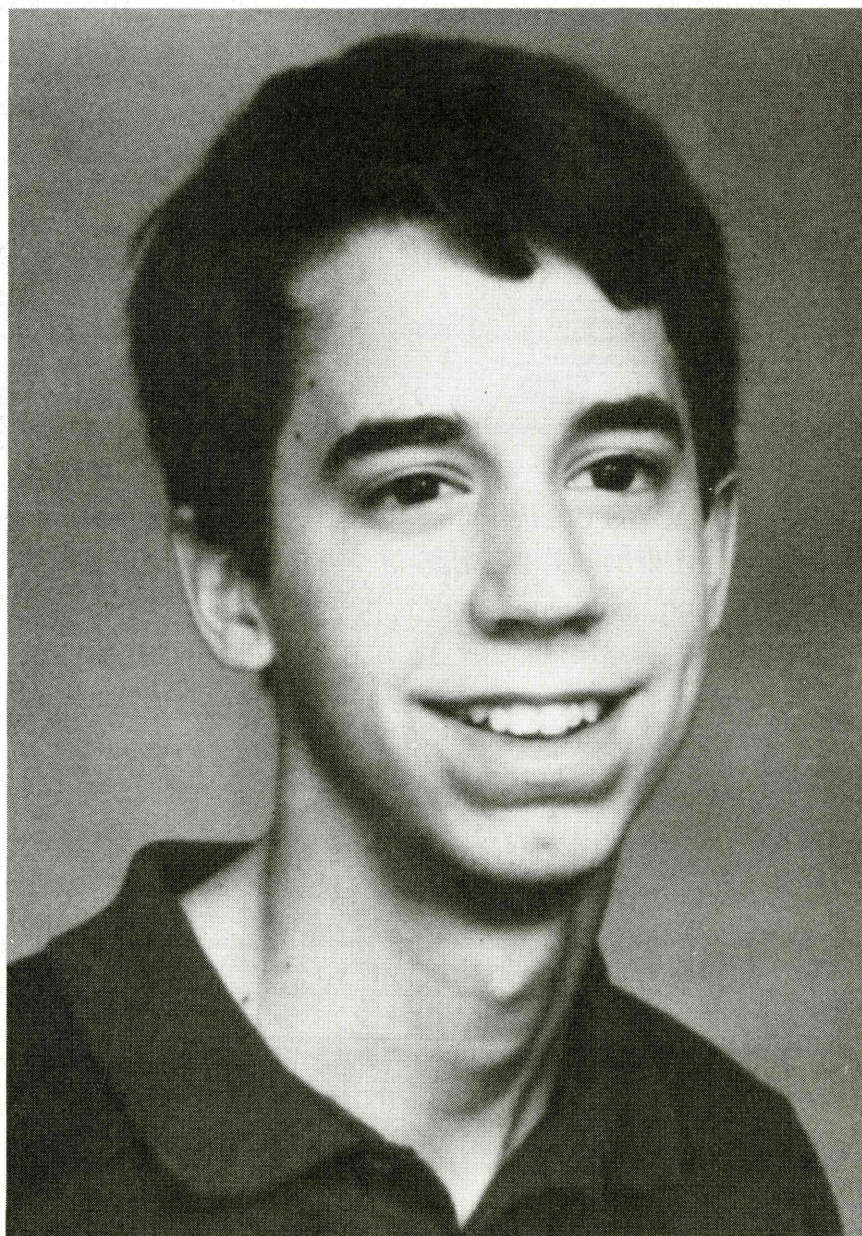
Election Results

Education Night

*High School Contest Winners,
Other Awards, College
Research Symposium*

National Chemistry Week

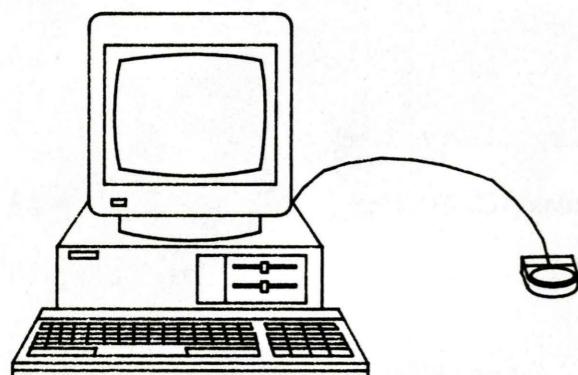
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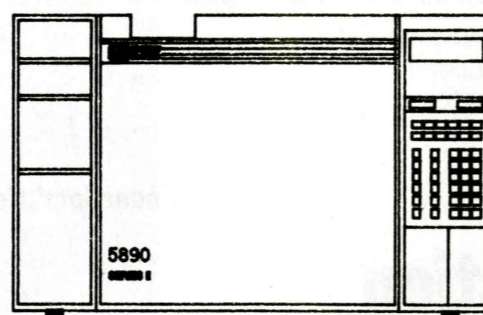
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Cover: Wayne Whitney (Medfield High School), First Prize Winner,
A.A. Ashdown Examination Contest, Simmons College Prize

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THE NUCLEUS

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Editor:	Arno Heyn, 21 Alexander Rd., Newton, MA 02161, Tel: 969-5712
Board of Publications:	Jean Vnenchak (Chair), Catherine E. Costello, Michael E. Strem
Business Manager:	Russell F. McCann, 10 Bassett St., Foxborough, MA 02035, Tel: 543-2155
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Associate Editor:	Myron Simon
Contributing Editors:	Edward Atkinson, History of Chemistry, Book Reviews; Maryann Solstad, Health; Bill Adams, Cartoons; Cynthia McGowan, Calendar.
Circulation Manager:	Mark A. Druy, 38 Bonad Rd., Arlington, MA 02174, Tel: 641-1957
Proofreaders:	G. Richard Handrick, Donald Rickter

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Election Results

The following is the result of the balloting for the 1990 ACS officers of the Northeastern Section. There were a total of 666 ballots counted (622 last year). The * indicates the winner(s) in each category.

CHAIRMAN-ELECT—*Charles E. Kolb, Jr., 338; Thomas R. Copeland, 282.
TRUSTEE—*Adrienne S. Dey, 364; Myron S. Simon, 262.
SECRETARY—*Michael J. Hearn, 595; Arno Heyn, Ceded votes to Hearn.
AUDITOR—*Anthony L. Rosner, 487.
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Kathleen Thrun, 192; *Mary Ann Solstad (Alternate), 279; Richard Milius, 185; Paul Vouros (withdrawn), 251; Katie Stygall, 208; *Alfred Viola (Alternate), 251; David M. Howell, 206; *Wallace J. Gleekman (Councilor), 318; Iclal S. Hartman, 173; Bruno V. DePamphilis, 175; James Quick, 212; Patrick M. Gordon, 157; *Adrienne S. Dey (Councilor), 381; *Esther B. Garber (Councilor), 327.

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THEODORE WILLIAM RICHARDS MEDAL COMMITTEE—*Frederick Greene, 329; *Dudley Herschbach, 359; Kenneth D. Legg, 176; Donald J. Ciappenelli, 284.

GUSTAVUS JOHN ESSELEN AWARD COMMITTEE—*Arthur S. Obermayer, 527; *Myron S. Simon, 527.

Letter to the Editor

When I saw the contents page of the March 1989 issue of *The Nucleus*, and read of the scheduled talk by Dr. Suzanne Q. Lomax on "The Application of Chemistry to the Examination of Works of Art," I thought, "Great! This is a lecture I mustn't miss." From this letterhead, you can see how neatly the subject of this talk fits in the area of my discipline in chemistry.

When I turned to page 5, I saw that the talk by Dr. Lomax had been scheduled for March 9. My copy of the *Nucleus* arrived today, March 11. I can't help wondering about the extent to which the potential audience for a most interesting presentation may have been reduced by this circumstance. An audience diminished for a reason like this is a disservice both to those who would have liked to attend and to the speaker, who always deserves a maximum turnout for the work of preparation.

From years of intimate personal involvement in the affairs of professional organizations, I know of the hard work done on a volunteer basis by people like yourself on projects such as publication of *The Nucleus*. Thus, I feel really churlish in expressing a complaint, but necessary improvements depend upon awareness of what has to be improved.

If delays in the delivery of *The Nucleus* are the result of its not being sent by first class mail, I, for one, would very gladly increase my voluntary ACS local section contribution by any amount that it would take to make the change, because I think so well of the publication and of the Section. I can't imagine that any significant number of members would not feel the same way.

Sidney Lauren
Nashua, NH
March 11, 1989

Editor's Reply: We appreciate your comments and are aware that despite a mailing date of the 20th of the preceding month, some members receive their third-class copies of the *NUCLEUS* late. If you, too are willing to pay extra for first-class mailing, let us know and we will see what can be done.

Summerthing—1989

THE AMERICAN INSTITUTE of CHEMISTS, Inc.
THE NORTHEASTERN SECTION
of THE AMERICAN CHEMICAL SOCIETY
Jointly invite you, your families, and friends to
A NEW SUMMERTHING!

When: Saturday, August 19

Time: 8:45 AM to 5:00 PM

Where: LOWELL Massachusetts

Cost: A Bargain at \$12

*Lowell National Historical Park

Seniors (62 and Over) \$10

*Lowell Heritage State Park

Children (5-12) \$6

*The University of Lowell

(under 5) Free

PROGRAM

8:45 Registration, Visitors Center, National Historical Park
Here you will break into five smaller groups for:
A Mill and Canal Tour of 2 hours
Five groups starting at half-hour intervals.

Other Special Events scheduled for each group:

Slide Show, Working People's Exhibit, Waterpower Exhibit, Visitors Center Exhibit, Free Time (and snack time)

FREE TIME CAN BE USED TO VISIT THE QUILT MUSEUM
AND/OR THE WHISTLER HOUSE

1:15 Transfer to the University of Lowell

1:30 Luncheon, University of Lowell

2:30 A fascinating General Lecture

"Fabrics and Dyes—Then and Now in Lowell" and simultaneously
A Magic Show (for children of all ages)

3:30 A University Tour (optional)

5:00 END of a lovely day

Advance Registration—Please cut out and return by **August 10** to:

Ms. Karen Piper, 19 Mill Road, Harvard MA 01451

If questions, call Karen at 1-800-372-2054 (if in 617 area) or 508-456-8224

Name(s): _____

Address: _____ Tel. Nos. _____ (H)

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No. Adults _____ @ \$12.00 \$ _____

No. Senior Citizens _____ @ \$10.00 _____

No. Children (5-12) _____ @ \$ 6.00 _____

No. Children (4 and under) _____ no charge

TOTAL \$ _____

Please make check payable to: **Northeastern Section ACS, Summerthing 89** and enclose with registration.

(Check covers: lunch, tours, snacks, and miscellaneous costs)

Will you need transportation? Check here and you will be contacted.

Could you supply transportation if needed? yes/no _____

A BAG OF USEFUL INFORMATION WILL BE PRESENTED TO YOU UPON ARRIVAL AT THE VISITORS CENTER. THIS WILL INCLUDE, AMONG OTHER ITEMS, DIRECTIONS TO THE UNIVERSITY.

Lowell National Historical Park

Lowell National Historical Park and Lowell Heritage State Park preserve and interpret Lowell's pioneering role in the American Industrial Revolution. The Parks include over 5 miles of canals, operating gatehouses, mill complexes, mill worker housing, and 19th century commercial structures.

Mill and Canal Tour

The Mill and Canal Tour highlights the history of Lowell's mills, canals, and people. This two and one quarter hour journey by trolley, canal boat, and foot, follows the Merrimack River and historic canals through restored transportation locks. Visitors will stop at several sites during the tour: the Guard Locks Complex, or the Pawtucket gatehouse, and the Suffolk Mill, to view a restored turbine and worker housing.

The University of Lowell Department of Chemistry

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Directions to Lowell National Historical Park

Lowell National Historical Park is located in downtown Lowell, Massachusetts. Visitors should approach Lowell by either Interstate 495 or Route 3. Take exit marked **LOWELL CONNECTOR** to Exit 5N.

Follow **Thorndike Street** straight until you have passed under the rotary, then bear right onto **Dutton St.** At 200 yards on the right is the **Visitor Center Parking Lot.**

The approach to the Park from the Lowell Connector is clearly marked with brown & white signs which read "Lowell National & State Parks."

Winners of the 31st Annual Avery A. Ashdown High School Chemistry Examination Contest

STUDENT	SCHOOL	TEACHER
First Prize—The Simmons College Prize		
Wayne Whitney	Medfield High School	Judith Noble
Second Prize		
Joe Churchman	Brookline High School	Reen Gibb
Third Prize (Co-awardee)		
Charles Swiger	Winchester High School	William J. R. Marks
Third Prize (Co-awardee)		
Mitchell Verter	Brookline High School	Reen Gibb
Third Prize (Co-awardee)		
Christopher Welch	Bedford High School	Catherine Kreuger
HONORABLE MENTION—FIRST YEAR		
Andrew Ho	Lexington High School	David Olney
Maki Inada	Lexington High School	Judith Masselam
Reena Sastri	Lexington High School	Judith Masselam
Jeremy Tennis	Needham High School	Edmund Nevirauskas
Mark Liffman	Phillips Academy	Ronn Minne
Robb Aldrich	Hamilton-Wenham Regional	Harold Simpson
HONORABLE MENTION—ADVANCED PLACEMENT		
Christopher Leggett	Gilford High School	Carolyn Parker
Melanie Leitner	Brookline High School	Reen Gibb
Brian Hamill	St. John's Preparatory	Renee Zimmerman
Marjorie Bullitt	Winsor School	Ann O'Meara
Ofer Inbar	Newton South High School	J. Walter Brough
Matthew Pincus	Brookline High School	Reen Gibb

1989 CONTRIBUTORS

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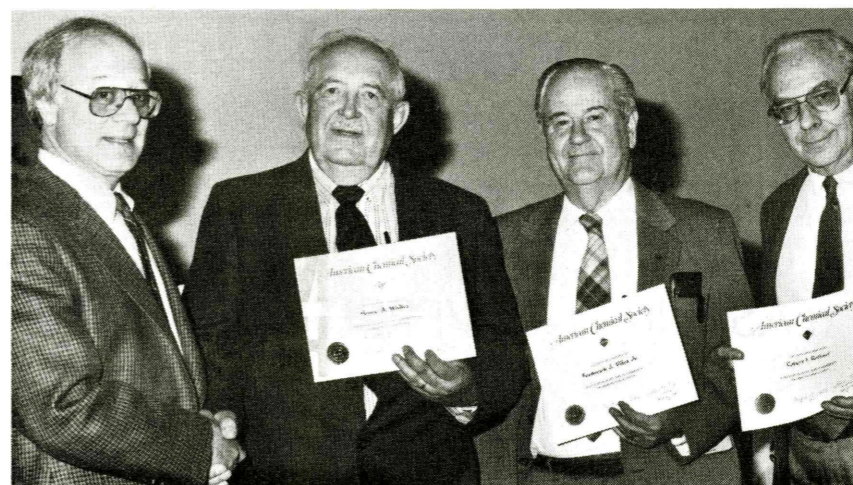
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Norwood High School, Retired

AWARD FOR EXCELLENCE IN TEACHING OF SECONDARY SCHOOL CHEMISTRY

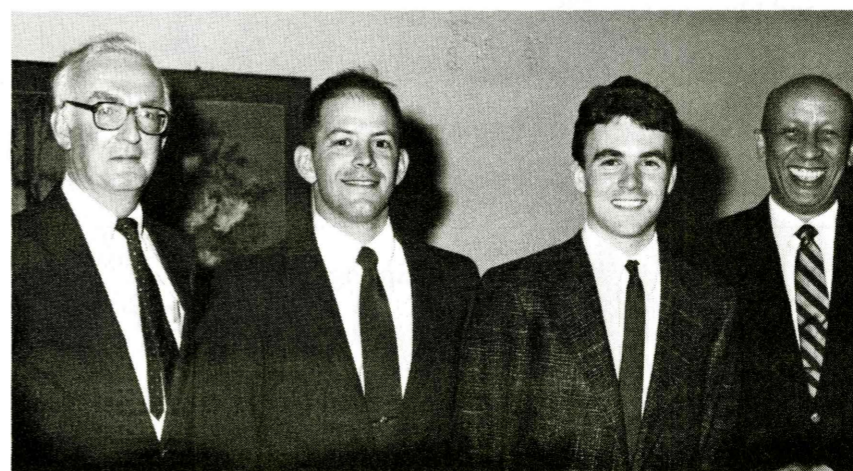
Jacqueline M. Arendt
Wayland High School



The 50 year members (left to right) Michael Strem: Chairman, N.E.S.A.C.S., Henry A. Walter, Frederick J. Viles, Jr., Robert F. Raffauf.



Avery Ashdown Exam—Top Awardees (left to right) Steve Lanbos: Chair, Ashdown Exam Committee, Wayne Whitney (Winner) Medfield High School, Mitchell Verter, Brookline High School, Joe Churchman, Brookline High School, Charles Swiger, Winchester High School, Wallace Gleekman, Chair, High School Education Committee.



Participants in the college research symposium (left to right.) E. Joseph Billo, Program Chair, James E. Dowling, UMass, Boston, Michael Stranberg, UMass, Boston, Prof. J.P. Anselme (Adviser) UMass, Boston.

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National Chemistry Week 1989

September 30

The Travelling Chemistry
Demonstration Show

October 28

Chemical Hazards in the Home—How
Safe is your Home?

November 1

Forensic Science

November 4

Science Teaching on the Cutting Edge

December 27

Holiday Lecture

For information about any of the above,
please call Karen Piper, Tel. (in 617 area:)
1-800-872-2054; others: (508) 456-8227.

In 1987, the ACS conducted the first
ever National Chemistry Day, which
proved a huge success. The ACS Board
of Directors established Chemistry
Week for October 29 through Novem-
ber 4, 1989. The Northeastern Section
again is staging events to point out to
teachers, pupils and the general public
the importance of chemistry for every-
thing that is around us.

We include the following information
for Section members to show what the
Northeastern Section is planning for
Chemistry Week 1989. Complete infor-
mation will be sent later to target
groups and the general public.

The Travelling Chemistry Demonstration Show

Framingham State College

A workshop for high school teachers,
academic faculty and students on how
to take demonstrations on the road.
Seven speakers include Prof. Jerry Bell
(Simmons College) and Tom Green-
bowe with Toby Dills (S.M.U.). (See
also related story on p. 10) Reser-
vations: Karen Piper (see above) or Tom
Greenbowe (508-999-8245)

Chemical Hazard in the Home

Minuteman Technical Vocational High
School, Lexington

A symposium sponsored jointly by the
Northeastern Section, and the Depart-

ments of Environmental Management,
and Public Health (Commonwealth of
Massachusetts). Discussion of various
aspects of hazardous substances used in
the home.

Forensic Science

Boston Museum of Science

Addressing advances in criminology;
toxicology and drugs; and the role of
the expert witness.

Science Teaching Day

Framingham State College

Sessions for high school teachers in
biology, chemistry, and physics, and
elementary and middle school teachers
in life science, and physical science.

Holiday Lecture

Boston Museum of Science

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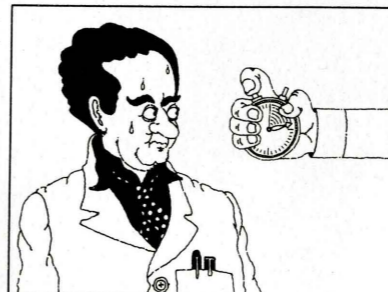
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Real Chemistry for Real Students

Magical Chemistry from S.M.U.
By Katie Stygall

Professors Tom Greenbowe and Toby Dills, chemistry faculty at the Department of Chemistry, Southeastern Massachusetts University, devote a part of their very busy lives towards motivating young students to pursue studies in science and mathematics. One way they do this is by presentation of a non-technical chemistry demonstration for middle school students entitled "Demonstrations of Chemical Phenomena". Over the past three years they have presented this show to six schools in Southeastern Massachusetts.

I asked Tom why he believed his show was different from those produced by colleagues elsewhere. 'Our show is fast paced and informative. Science principles are explained to the students at an appropriate level. The demonstrations are *not* presented as magic. Science teachers are informed of the content of the show beforehand. We hold mini-workshops for the teachers so that they can redo some of the demonstrations if they wish. Undergraduates from SMU perform some of the demonstrations and—we hope—serve as role models for students. We have a humorous style and lots of personality! Our audiences are very enthusiastic about the presentation.'

Indeed, the audience response is terrific. One student was so excited he called an open line on a radio station to talk about it.

I asked Toby to describe how the shows works today. 'An important goal of the show is to pose and then answer three questions: "What is a chemical reaction?" "How do you know a chemical reaction has occurred?" and "What different types of chemical reactions are there?" These are the universal questions that anyone doing a show for young students should focus on. Students are introduced to the concept of a chemical reaction when we ask "what happens when we combine these two solids together?" Or, "Based on what you just observed, predict, what should happen when these two solutions are mixed."

Toby and Tom display precipitation, acid-base, reversible equilibrium, and redox reactions. They use a series of chemiluminescence reactions to show how chemists produce light without the aid of a battery or electricity. Liquid nitrogen is used to change the properties of a variety of materials such as flowers, racquet balls and rubber tubing.

Safety is an important concern of the team. All safety regulations are followed during the preparation and performance of the show. Only one demonstration at a time is done in front of the audience.

Asked about his co-demonstrator, Tom is very enthusiastic. 'One of my goals at SMU was to get one or two of the chemistry faculty to learn the ropes and be able to present the show on their own. Toby is a natural emcee and feature presenter for the show.'

Melissa Martin and Colleen Westgate who assist with the show are chemistry majors at SMU and enjoy this work tremendously. They both plan careers in teaching at the high school and college level.

Several articles about the show have appeared in local papers.

It is refreshing to see scientists who take the time to inspire young people.



Prof. Tom Greenbowe demonstrating (left to right) Melissa Martin, Colleen Westgate (assistants), Amber LeBlanc and April LeBlanc (onlookers), Prof. Tom Greenbowe

As ever the major problem confronting the team is funding. It takes a minimum of \$600.00 to present this show as it should be presented. Tom and Toby donate their time. The money goes to pay for transportation, undergraduate stipends, chemicals and gases, and glassware. Budget constraints restrict the number of shows that can be presented. It would of course be wonderful if this kind of work with young people could be permanently funded. If any Nucleus readers have any ideas about how these shows might be permanently funded, we'd love to hear from them.

Both Tom and Toby would love to see faculty from other colleges and universities involved in this type of work and are willing to advise anyone who is interested. They plan to hold a "chemistry demonstration" workshop this year for college faculty, undergraduate and graduate students.

At present, Toby and Tom are only able to schedule three shows, so they request that interested teachers attend the show at Framingham State before requesting the show at their school. As a fan of their work, I'd like to say that my charismatic colleagues may not present a "Magic Show", but there is magic in the air!

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Board of Directors, Northeastern Section, ACS

Condensed Minutes

Meeting of February 9, 1989

Chairman Strem announced that the Award Dinner at the Dallas ACS Meeting will be on April 10, 1989. Six Board members have indicated they will attend.

Annual Meeting of the Board of Directors, 1988: The meeting was reconvened to receive the report of the Board of Trustees. The report was ACCEPTED and the Annual Meeting was ADJOURNED.

Treasurer's Report: Dr. Piper presented the report for the preceding month. The report was ACCEPTED.

Esselen Award Committee: T. Light reported that the committee has selected Prof. Carl Djerassi of Stanford University who is to receive the 1989 award at the April 6 Section meeting.

Public Service Committee: P.A. Brauner announced several events planned by the committee:

(1) on October 28 a symposium on

Chemical Hazards in the Home (cosponsored by NESACS and the Mass. Dept. of Environmental Management). (2) Science Teachers' Day at Framingham State College on November 4. (3) Symposium on Forensic Chemistry in conjunction with Chemistry Week (Oct. 28–Nov. 4).

National ACS Spring Meeting in Boston: J. Billo reported on planning for the meeting. The following have been appointed: General Interest: Myron Simon; Student Workers: Stan Patterson; Hospitality: to be announced; Exposition: Vincent Gale; Public Service: Catherine Costello, Michaeline Chen; Fund Raising: To be announced.

Summer Programs: J. Perkins, P. Brauner and R. Kramer constitute the committee to organize a summer event. Several suggestions were made and taken under advisement.

David Howell

Meeting of March 9, 1989

Chairman Strem announced that Mary Ann Solstad has been elected by the Board to replace Lloyd Taylor as Alternate Councilor. Lloyd Taylor has also resigned as chairman of the Long Range Planning Committee. A new chairman will be named. Other announcements: The College Research Symposium to be held Saturday, April 22 at Wellesley College. W.S. Gleekman announced for the *Chemical Education Committee* that the Ashdown Exam will be given on April 8, 1989 at Simmons College.

The following presented written reports which are on file: J. Kaufman (*Safety Committee*), K. Stygall (*Public Relations Committee*).

The Treasurer presented his report. In his capacity as chairman of the *Budget Committee* he asked that certain monies budgeted as income for 1988 be moved to 1989 inasmuch as the funds were received in 1989. APPROVED.

P.A. Brauner reported for the *Awards Committee* that the Levins award is now in place.

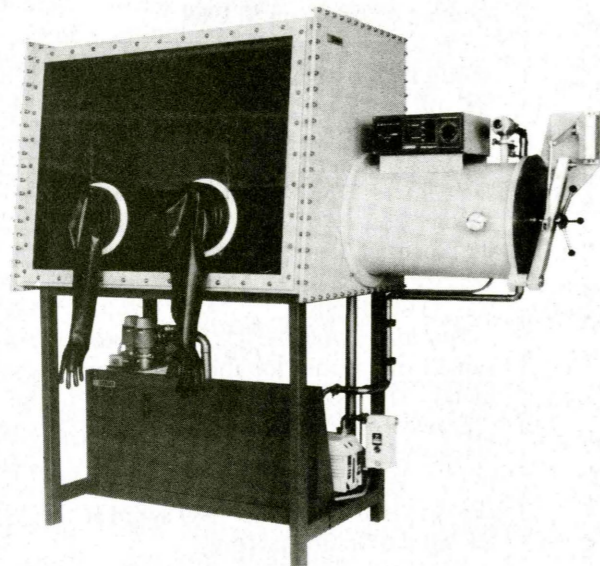
Board of Publications: Dr. Strem announced that the Directory, after a delay for the purpose of correcting information is to be mailed at the end of April. Suggestions were made for keeping member information up-to-date.

Constitution and Bylaws: T. Light reported that certain bylaw amendments will be presented to the Board in time to be voted at the May meeting. He was asked concerning the applicable rules for conducting campaigns of candidates for Section office. The NESACS Bylaws do not address fair election procedures, but the provisions of Bylaw V of the ACS Bylaws apply to all segments of the Society, including Local Sections. T. Gilbert will look into this further.

Esselen Award Committee: T. Light reported that everything is in place to

continued on back page

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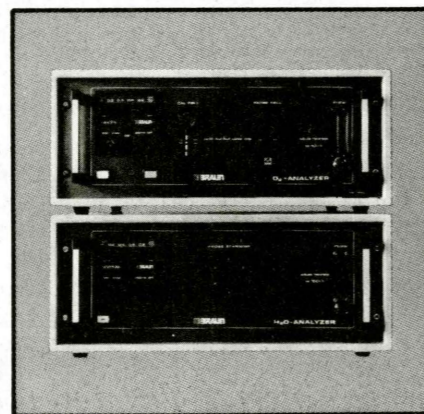
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Councilors' Report

ACS National Meeting, Dallas, April 12, 1989

ACTION

Dues Increase
1990 (straw vote)

\$0

\$2

\$4

Dues Increase (Final)

\$0 YES

\$0 NO

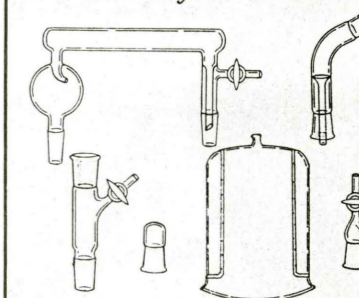
Constitutional Amend-
ment On Divisional
Activities Recommit

Delete Mandatory
"Headquarters"

Accept New Ocean
County Section

	COUNCIL	BURGESS	CHEN	COSTELLO	DEY	GARBER	HEYN	HOPKINS	LIGHT	PERKINS	SOLSTAD
\$0	139			■				■			
\$2	72			■			■				■
\$4	119	■	■					■		■	
\$0 YES	180			■				■			
\$0 NO	158	■	■	■			■	■		■	■
Constitutional Amend- ment On Divisional Activities Recommit	Y	Y	Y	Y	Y			Y	Y	Y	Y
Delete Mandatory "Headquarters"	Y		Y				Y	Y		N	
Accept New Ocean County Section	Y	Y	Y	Y	Y			Y	Y	Y	N

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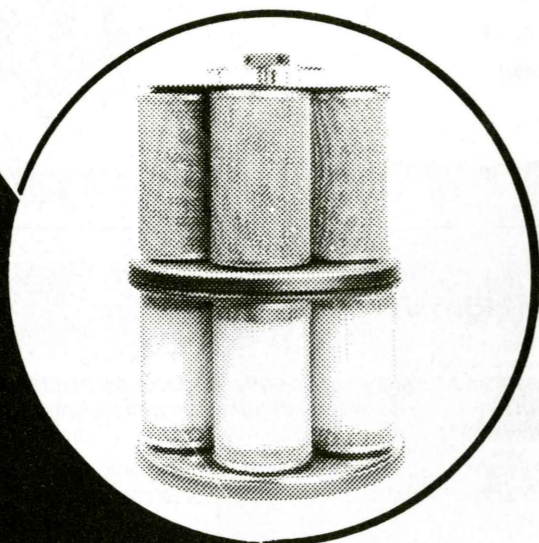
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College and University Safety Council

The first meeting of the College and University Safety Council was held on May 10, 1989 at Curry College. The meeting was attended by 25 members representing 16 local colleges and universities. First organized by Dr. James Kaufman, professor of chemistry at Curry College and Dr. Frank S. Wagner, technical director of Strem Chemicals, Inc., the Council is a joint effort of the Curry College Laboratory Safety Workshop and The Health and Safety Committee of the Northeastern Section of the ACS. The goal of the Council is to promote health and safety in academic institutions. The meetings provide a forum for the exchange of ideas on health and safety issues. Other activities include a guest speaker and a complimentary inspection of the host institution's laboratory facilities. The meetings are held bimonthly at different member institutions. The scheduled meeting dates for the next 12 months are as follows:

September 13, 1989	January 17, 1990	May 16, 1990
November 15, 1989	March 14, 1990	July 18, 1990

For further information please contact:

Frank S. Wagner
STREM CHEMICALS, INC.
7 Mulliken Way
Newburyport, MA 01950
(508) 462-3191

James Kaufman
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Theodore William Richards Medal nominations

Deadline: October 31, 1989.

Send nominations to the committee chairman: Prof. Dietmar Seyfarth, Chemistry Dept., Mass. Institute of Technology, Cambridge, MA 02139.

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Board of Directors

Continued from page 11

make the award at the April 6, 1989 meeting at Harvard to Carl Djerassi of Stanford.

Plans for future meetings were discussed.

1990 National ACS Meeting in Boston: M. Simon will be in charge of the General Interest Program.

Chemical Safety: M.A. Solstad mentioned Mass PIRG's topic: "Misuse of Toxic Substances". Small businesses appear to have problems in interpreting how the rules apply to them. The AIChE is concerned in this problem and could provide information. Prof. Robert Alberty (V. Pres. of MIT) is up to date in this area and can be contacted at 293-2456.

Continuing Education: A. Viola announced the first program, to be offered May 13 at Northeastern University on Laboratory Robotics—1989: The State of the Art. The Board APPROVED.

Public Service Committee: The following programs were announced: October 28, Lexington Minuteman Voc-Tech High School (Topic to be announced); Nov. 1, Museum of Science: "Forensic Science"; Nov. 4, Framingham State College: Science Teacher Program.

NEW BUSINESS:

Dues: On motion made and seconded it was VOTED that Local Section Dues for 1990 be raised to \$8.00, an increase of one dollar. It was further MOVED and VOTED to set the Local Dues of the Section at 10% of the national ACS dues assessed for the preceding year, rounded off the nearest dollar.

There was a brief discussion on possible sources for funds to support the attendance of handicapped chemists at national meetings.

P.A. Brauner related two proposals to the Board: (1) A request for supporting a workshop for Chemistry Demonstrations in an amount not to exceed \$5000. (2) A video tape is now available titled "Burning Questions" on the impact of the world on science and vice versa. This tape can be purchased for \$310 and rented by the Section to interested members or groups. No action was taken on these items at this time.

David Howell

Award Winner

Wayne Whitney, the first prize winner of the Ashdown Chemistry Examination Contest was the subject of a page 1 article in the July 5, 1989 Boston Globe, titled *Gifted, Talented and Underserved*.

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