ALFRED BADER

Chemistry Related Correspondence

ACS - Project Seed
1990-2018

Queen's UNIVERSITY ARCHIVES

Separation Record

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Date: Dec 20, 2021 Archivist: BKeirstead

Dr. Alfred Bader
Chairman

March 31, 1986

Checked '86, '87, '88

Mr. Brian A. Bernstein
Treasurer
American Chemical Society
1155 - 16th Street N.W.
Washington, D.C. 20036

Dear Mr. Bernstein:

Thank you for your letter of March 27, received this morning.

This is to confirm our telephone conversation of this morning:

1. The signed copy of your letter is enclosed.

2. I amended the letter to state that the donation will be in the form of the common stock of the Sigma-Aldrich Corporation.

3. The name and address of the stockbroker making a market in our stock is Mr. William Schield, Robert W. Baird & Co., telephone number 414-765-3505. I believe that Mr. Schield will be able to obtain a somewhat better price for the stock than other brokers, and so I suggested to you that you instruct him to sell the stock, should you decide to sell.

4. My intent is to provide sufficient funds so that at the beginning the interest, rather than the capital, would be used by the A.C.S. to make the award. Some years from now, I would like to discuss with you in some detail just what it would take to assure that the award could be made through interest, in perpetuity.

Previously, I had discussed with Dr. Rogers two further suggestions regarding this award, and Dr. Rogers had assured me that these present no problems.

One is that the award be given either by myself, when I attend the A.C.S. meetings, or by the Aldrich representative who has presented the Aldrich awards in the past. This has been Dr. Ike Klundt.

The Aldrich award address has been published by the Aldrichimica Acta, and I believe that each award winner has been very pleased by the manner in which we have published these important addresses. I would like to suggest that the award winners consider having the Bader award addresses also published in the Aldrichimica Acta.

You must know that our slogan "Chemists Helping Chemists in Research and Industry" has real meaning to me, and I really cannot think of any better way of showing this.

Best personal regards.

Sincerely,

Alfred Bader
AB:mmh
cc: Prof. Paul G. Gassman
Dr. Joseph E. Rogers, Jr.
Dr. Irwin Klundt
Dr. A. W. Runquist

American Chemical Society

1155 SIXTEENTH STREET, N.W.
WASHINGTON, D.C. 20036
Phone (202) 872-4415

Brian A. Bernstein
Treasurer

March 27, 1986

Dr. Alfred R. Bader
President
Aldrich Chemical Company, Inc.
940 West St. Paul Avenue
Milwaukee, WI 53233

Re: Gift to Fund ACS Award

Dear Dr. Bader:

The American Chemical Society (ACS) is pleased to acknowledge your interest in funding a proposed ACS award in Bioinorganic/Bioorganic Chemistry. Your generous offer is deeply appreciated by the Society.

This letter is intended to confirm our mutual understanding as to your offer and the Society's acceptance of this gift. The gift will be in the form of a donation of ~~Aldrich Chemical Company~~ common stock having a market value of approximately $100,000. Your broker will be instructed to transfer these shares of stock to the Society's custody account at Morgan Guaranty Trust Company in New York. At your earliest convenience, please provide us with the name and telephone number of your broker. ACS will invest the proceeds from the sale of the stock in investments of its own choosing, drawing on income and principal from these investments to fund the award.

Sigma-Aldrich Corp.

In April, at its national meeting, the ACS Board of Directors will determine whether to approve the proposed ACS Award in Bioinorganic/Bioorganic Chemistry and your offer to fund this award. It is our understanding that your gift is contingent on these approvals. Upon approval, it is anticipated that this award will first be presented in 1988. It should be understood that ACS retains exclusive control over when and to whom this award will be granted. If in the future it becomes infeasible, or even impractical, to continue granting this award, the remaining proceeds of your gift will be utilized by ACS in furtherance of only tax exempt activities.

If the above conforms to your understanding of the arrangements for your gift, we request that you sign the enclosed copy of this letter and return it to us for our records.

We once again express our deepest appreciation for your warmhearted generosity. All of us at ACS extend our gratitude to you for your kind and generous offer.

Sincerely,

Brian A. Bernstein

Brian A. Bernstein

Accepted by:

Alfred R Bader

Dr. Alfred R. Bader

cc: Dr. John K Crum
Dr. Paul G. Gassman
Mr. Rodney N. Hader
Dr. Joseph E. Rogers, Jr.

American Chemical Society

OFFICE OF THE
BOARD OF DIRECTORS

Ernest L. Eliel, *Chairman*

1155 SIXTEENTH STREET, N.W
WASHINGTON, D.C. 20036
Phone (202) 872-4600

January 13, 1988

Found this - take along?

Dr. Alfred R. Bader
Aldrich Chemical Company
940 West St. Paul Avenue
Milwaukee, Wisconsin 53233

Dear Alfred Bader:

As you may or may not already know, the ACS is mounting a major capital drive, the "Campaign for Chemistry," to involve individual ACS members as well as corporate and foundation donors. The objective of this campaign is to raise money for a new building for Chemical Abstracts Service, to endow several educational projects (including Project SEED, the Chemistry Olympiad and development of "Chemistry in the Community," an ACS sponsored high-school text), to provide matching funds for a two-million-dollar challenge grant to the Arnold and Mabel Beckman Center for the History of Chemistry, and, it is hoped, to establish a chemistry/science exhibit in the Smithsonian's National Museum of American History. The membership solicitation part of this campaign will be launched in the spring of 1988.

At this time, I should like to invite you to participate in a telephone survey which is being undertaken by our campaign office. We believe the results of this survey will be very important to the planning of the details of the membership campaign. You will be called by telephone, in the next few days, by Donald Cantrell, our Resident Fund-Raising Counsel, or by Christine Owens, our Campaign Manager. If you will grant them 15 to 20 minutes of your time, we, at ACS, will be very grateful for your help. All responses to the survey will be completely confidential.

Enclosed are some material on the campaign and some information on directions in which we hope ACS will go as the result of the campaign. I encourage you to read these materials prior to the telephone survey so that we can discuss your attitudes and interests in relation to them.

On behalf of the Campaign Committee, I thank you, in advance, for your cooperation.

Sincerely,

Ernest

Ernest L. Eliel

enclosure

BJPJ:ACS:12/9/87

American Chemical Society

CAMPAIGN FOR CHEMISTRY

1155 SIXTEENTH STREET, N.W.
WASHINGTON, D.C. 20036
Phone (202) 872-4094

AMERICAN CHEMICAL SOCIETY: CAMPAIGN FOR CHEMISTRY

Chemistry feeds the world, clothes and houses humankind, taps new energy sources, protects the environment, conquers disease, and insures national security.

People throughout the world rely upon chemistry. In America, the American Chemical Society (ACS) is the central organization of practitioners of this most central of all sciences. It is the largest scientific and educational organization in the world with over 137,000 members, more than 60 percent from industry.

The growth of ACS as a vital force bringing the fruits of scientific progress to America and its citizens parallels the nation's own scientific and technological growth.

The resulting national prestige that has come to ACS carries with it concomitant responsibilities--responsibilities to assure in the future as in the past that chemistry enjoys its correct place in society. The ACS is the only society of professionals that bears this responsibility--and the only one that has the capacity to fulfill it.

Thus, in 1987, 112 years after its establishment, ACS is prepared to grasp new opportunities and to develop new programs for the good of science, industry, and our nation.

To do so requires that the Society in the next two years acquire at least $35 million, in addition to member dues and revenues from services, through a capital funding campaign. It is anticipated that the $35 million goal will be achieved through contributions of $25 million from the corporate community and $10 million from the ACS membership.

The Campaign for Chemistry has four components:

Programs for Public Understanding	
Education of Young People	$ 8,000,000
Science Place at the Smithsonian	5,000,000
Beckman Center for the History of Chemistry	5,000,000
Programs to Enhance the Distribution of Knowledge	
Chemical Abstracts Service	17,000,000

PROGRAMS FOR PUBLIC UNDERSTANDING

In the nation today, the scientific community is in danger of losing its base of citizen support. How bad is the problem? A 1979 National Science Foundation study reports that only 7 percent of adults in the United States can be considered to be "scientifically literate." Further:

* more than 40 percent of adults believe in astrology, lucky numbers, and flying saucers
* 50 percent of children aged 13 believe scientists should not be allowed to do the kind of research they do
* one of every two young people aged 17 believe science is not useful.

Simply put, the average American does not know enough about science and technology: what they do, how they do it, and why.

Should average citizens some day decide that the goals of science and technology are not consonant with their goals, then science and technology will suffer--for the will of citizens will prevail.

To help counteract this problem, the ACS will initiate three programs.

Education of Young People: Improved scientific education of young people is the surest and perhaps the only long-term means to assure that we as a nation can hold our place in today's technology-driven world.

The American Chemical Society has a rich history in developing scientific education programs for young people and has a proven track-record. Because of recent pioneering efforts with a newly developed curriculum and textbook called Chemistry in the Community (CHEMCOM), ACS is on the threshold of fostering major new advances in science and chemistry education in our schools.

The centerpieces of ACS Programs for the Education of Young People are the CHEMCOM curriculum, an alternative high school chemistry course for students not planning to study chemistry in college, and Project SEED, a summer employment program for economically disadvantaged students.

To enhance these programs, and to expand a variety of other programs for young people, ACS requires $8 million.

Science Place at the Smithsonian: The ACS will establish Science Place, an imaginative exhibit center at the Smithsonian Institution to highlight the role of chemistry in society. A joint project of the Smithsonian Institution and ACS, the exhibit will be placed on the remodeled first floor of the National Museum of American History located on the Mall in Washington, D.C., a site that attracts five million visitors annually. Science Place requires $5 million.

Beckman Center for the History of Chemistry: To help narrow the gap of understanding between scientists and laypersons, ACS has established jointly the Beckman Center for the History of Chemistry in Philadelphia. The Center, designed to be the focus of chemical history, has already begun a number of programs such as oral history archives of eminent chemists. To enhance the dissemination of information about historical resources and

encourage research and scholarship on and the public understanding of the chemical sciences, the Center must have funds. A $2-million gift pledged by Arnold Beckman--to be used to establish physical facilities for the Arnold and Mabel Beckman Center for the History of Chemistry--must be matched. Total financial need is $5 million.

PROGRAMS TO ENHANCE THE DISTRIBUTION OF KNOWLEDGE: CHEMICAL ABSTRACTS SERVICE (CAS)

Scientific knowledge accumulates at a dizzying rate, now showing exponential growth. To cope, ACS more than 80 years ago established Chemical Abstracts, the world's premier database for chemistry. It contains virtually all the world's knowledge about chemistry.

To deal effectively in the future with this burgeoning quantity of information, Chemical Abstracts Service is harnessing the speed and flexibility of computers, pioneering new software and search languages, to provide the scientific community even better accessibility than can be obtained through printed abstract journals.

Service to the user in the future will emphasize two key areas:

* to capture and exchange information on a truly international basis, and
* to put in place information that can make possible wholly new approaches to fundamental research itself.

These and other new information services will help usher in a new era in the way scientists work, no matter where in the world.

To expand these services, the Chemical Abstracts Service plan calls for an increase in staff from 1400 at present to approximately 2200--more than a 60 percent increase. Housing this new staff and new equipment will require construction of a third building at CAS headquarters in Columbus, Ohio. The new building is scheduled for completion in 1992. A total of $17 million from private philanthropy is required for CAS program expansion.

The American Chemical Society is poised now to expand its programs and activities in keeping with the responsibilities it carries as the principal organization serving chemists, chemical engineers, and chemistry-based industries in America.

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American Chemical Society

DEPARTMENT OF
RESEARCH GRANTS & AWARDS

1155 SIXTEENTH STREET, N.W.
WASHINGTON, D.C. 20036
Phone (202) 872-4481

ET

March 23, 1988

Dr. Alfred Bader
President
Aldrich Chemical Company, Inc.
P.O. Box 355
Milwaukee, WI 53201

Dear Dr. Bader:

It is a pleasure to inform you of arrangements for the presentation of the 1988 Alfred Bader Award in Bioorganic or Bioinorganic Chemistry.

The Society cordially invites you and your spouse to be its guests at the reception and dinner in honor of 1988 recipients of ACS Awards on Wednesday evening, June 8, 1988 at the Royal York Hotel in Toronto. We have summarized the arrangements for the dinner and the presentation ceremony on the enclosed sheet for your reference.

We are continuing the practice of seating award recipients, their families and their guests together with the sponsor's representative and guests. The awardees will not be seated at a raised head table during the dinner. If the combined group is too large for a single table, adjacent tables will be utilized.

We will be happy to reserve places at the awards dinner for friends whom you wish to invite, and to assist you in purchasing dinner tickets for such persons through our office. It will help us to coordinate all arrangements if you will send your own and your spouse's complimentary registration forms directly to the ACS Meetings Office, and your banquet guest list to the Awards Office.

Feel free to call upon our office for assistance with any questions or special needs in connection with this event.

Sincerely,

Joseph E. Rogers, Jr.
Head

JER:epw
Enclosure

Royal York Hotel
Toronto, Ontario
June 8, 1988

Information and Schedule for Sponsors' Representatives

I. Meeting Registration and Hotel Reservations. Representatives of sponsors of ACS Awards should register for the meeting by completing the enclosed registration forms and returning them to the Meetings Office. Upon return of the forms, complimentary registration badges will be sent. If you have not already made hotel rservations, please do so promptly. A form is enclosed for your use. The deadline for receipt of hotel reservations is May 1. (The preliminary program for the Toronto Meeting appeared in the February 1 issue of CHEMICAL & ENGINEERING NEWS: the final program will appear in the March 28 issue.)

II. Dress. Dress will be "Black Tie" (tuxedos and dinner gowns). Should you wish to rent a tuxedo in Toronto, please contact Tuxedo Junction, 526 Young Street, Toronto (open Monday-Wednesday, 9:00 AM to 6:00 PM: Thursday-Friday 9:00 AM to 9:00 PM; Saturday, 9:00 AM to 5:00 P.M.:closed Sunday). Telephone: (416)962-1800.

III. Events of June 8, 1988. All rooms are in the Royal York Hotel, Convention Floor.

4:30 Official award presentation photographs will be taken in the Toronto Room. Spouses may accompany sponsors' representatives during the brief photographic session before the reception. Please plan to arrive promptly and ask for Dr. Rogers when you arrive.

6:30 Reception in the Canadian Room. A cash bar will be available at the reception.

7:30 Dinner* in the Concert Hall. Recipients of Awards and their spouses will be seated at reserved tables with sponsor representatives and other guests of the Society. If friends wish to attend the Dinner, we shall be pleased to reserve places, or a table (of 8), for them. Dress for those other than awardees or sponsors' representatives is optional. The price of a ticket to the Dinner is $32 US ($40 CDN). Please use the enclosed form for ordering tickets (listing the name of each guest for whom you wish to purchase a ticket and reserve a seat), and mail it to the Awards Office at ACS Headquarters.

*The entree selected for the Dinner is broiled filet mignon.

8:30 Presentation of 1988 Awards of sponsoring societies of the Third Chemical Congress of North America.

Questions or requests regarding any aspect of the presentation of 1988 ACS Awards should be directed to Dr. Joseph E. Rogers, Jr. (202)872-4481 or Mrs. Edith P. Willis (202)872-4408.

AMERICAN CHEMICAL SOCIETY
1155 Sixteenth St., N.W.
Washington, DC 20036

Awards Dinner
Third Chemical Congress of North America
Toronto, Canada
June 8, 1988

(Please return this form no later than May 6, 1988)

I wish to purchase _____ tickets for the Awards Dinner at $32.00 U.S. ($40 CDN) each.

The names of my guests are as follows:

I enclose a check in the amount of _____ payable to the American Chemical Society.

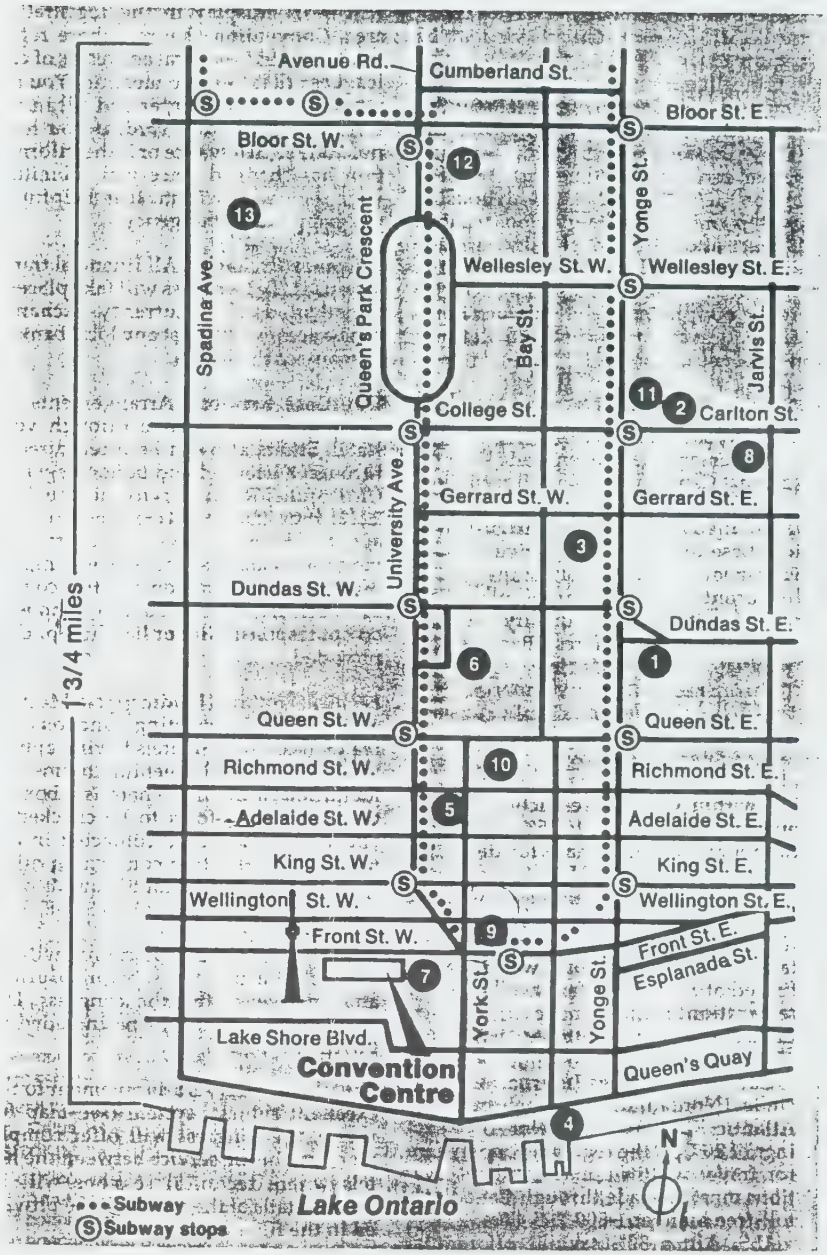
_____ _____
Date Name

Credit Account 56402-1323-E651
Send copy of information to Room 230, x4408

Hotels in Toronto

RATES QUOTED ARE IN CANADIAN DOLLARS	Single	Double	Twin	Double/ double	Suites 1 bedroom	Suites 2 bedroom
1. **Bond Place**[a,b] 65 Dundas St. East Toronto, Ontario M5B 2G8 (416) 362-6061	C$ 69	C$ 79	C$ 79	na	na	na
2. **Carlton Inn**[a,c] 30 Carlton St. M5B 2E9 (416) 977-6655	65	75	75	C$ 85 up	na	na
3. **Delta Chelsea Inn**[a,b,c,d] 33 Gerrard St. West M5G 1Z4 (416) 595-1975	88	103	103 up	na	C$134 up	na
4. **Harbour Castle Westin**[a,b,c,d] One Harbour Sq. M5J 1A6 (416) 869-1600	115	130	na	130 up	330 up	C$500 up
5. **Hilton International Toronto**[a,b,c,d] 145 Richmond St. West M5H 3M6 (416) 869-3456	125	125	na	125 up	299 up	370 up
6. **Holiday Inn Downtown**[a,b,c,d] 89 Chestnut St. M5G 1R1 (416) 977-0707	91	101, 111	na	101 up	(Upon request)	
7. **L'Hotel**[a,b,c,d] 225 Front St. West M5V 2X3 (416) 597-1400	120	140	140	na	260 up	400 up
8. **Ramada Inn**[a,c] 111 Carlton St. M5B 2G3 (416) 977-8000	80	80	na	80 up	170 up	na
9. **Royal York**[a,b] 100 Front St. West M5J 1E3 (416) 368-2511	100	115	115	115 up	220 up	485 up
10. **Sheraton Centre**[a,c,d] 123 Queen St. West M5H 2M9 (416) 361-1000	122	142	na	142 up	256 up	384 up
11. **Westbury**[a,b,c] 475 Yonge St. M4Y 1X7 (416) 924-0611	80	85	na	85 up	228 up	425 up
12. **University of Toronto**[e,f,g,h] Residence Complex Office M5S 1A4 (416) 978-8735	35	na	46	na	na	na
13. **Victoria University**[h] 140 Charles St. West M5S 1K9 (416) 585-4524	34	na	48	na	na	na

Note: Exchange rate was $0.78 Canadian = $1.00 U.S. at press time; contact your local bank for current rate of exchange). All rooms are subject to 5% tax (subject to change). a Parking at cost (check with hotel for accessibility for other than standard autos). b Accessible room. c Swimming pool. d Health club. e Rooms women only, air conditioned. f Men only, air conditioned. g Coed, no air conditioning. h All twin beds. na = not available.



Complete this form only for Congress participating housing/session hotels. Please read the information regarding room reservations before completing this form. DEADLINE FOR RECEIPT AT THE 3RD CHEMICAL CONGRESS HOUSING BUREAU IS MAY 1. REQUESTS RECEIVED AFTER THIS DATE CANNOT BE PROCESSED. Mail to: 3rd Chemical Congress Housing Bureau, Queen's Quay Terminal, 207 Queen's Quay West, Suite 509, P.O. Box 126, Toronto, Ontario M5J 1A7 Canada.

Hotels: Indicate below order of hotel preference (choice 1st, 2nd, 3rd, 4th)

_____Bond Place
_____Carlton Inn
_____Delta Chelsea Inn
_____Harbour Castle Westin (formerly Hilton)
_____Hilton International Toronto (formerly Westin)
_____Holiday Inn Downtown
_____L'Hotel
_____Ramada Hotel
_____Royal York
_____Sheraton Centre
_____University of Toronto[a]
_____Victoria University[a]
_____Westbury

a Only checks, Mastercard, and Visa honored by these properties.

Check one: If my preferred rate is not available, I am more concerned with location_____, rate_____

Room(s) will be occupied by: (PLEASE PRINT CLEARLY)

	Surname	First or Nickname	M.I.
Name(s)			

Mail confirmation to:

Name			
Address			
Affiliation			
City, State			
Zip, Country			
Telephone	Home	Office	
Telex			

Arrival date_____ Number of nights_____

_____Single (1 person) _____Twin (2 persons, 2 beds) _____Suite, 1 bedroom (1 or 2 persons)

_____Double (2 persons, 1 bed) _____Double/double (2 double beds) _____Suite, 2 bedroom (2 or more persons)

Deposit Information:

_____Enclosed is my deposit check of $70 (U.S. or Canadian) per room made payable to the 3rd Chemical Congress Housing Bureau

I wish to guarantee my reservation with the following credit card:

_____American Express, _____Diners, _____Mastercard, _____Visa.

Credit Card No._____ Expiration date_____

Signature_____

IMPORTANT: Changes in arrival and departure time or date should be made directly to the Congress Housing Bureau. After May 5 all housing matters should be directed to the hotel. The name of each guest must be listed for doubles/twins. Reservations cannot be made unless two names are given. Room assignments will be made in the order received. Incomplete information will result in a delay in processing your request.

Chemists Helping Chemists in Research and Industry

aldrich chemical company, inc.

Dr. Alfred Bader
Chairman

April 14, 1988

for 202 872 6200

Dr. Joseph E. Rogers, Jr.
Head, Department of Research Grants & Awards
American Chemical Society
1155 - 16th Street, N.W.
Washington, D.C. 10036 202-872-4481

Dear Dr. Rogers:

Thank you for your letter of March 23rd. I have only just returned from two weeks in England and hence the delay in my responding.

May I share one interesting problem with you, that I hope will reoccur for many years to come.

You have invited me for the presentation of the 1988 Alfred Bader Award in Bioorganic or Bioinorganic Chemistry, but I would also like to represent Aldrich in the presentation of the Aldrich Award in Organic Chemistry to Prof. Ireland, and in presenting the Alfred Bader C.I.C. Award in Organic Chemistry to Prof. Stephen Hanessian of the University of Montreal.

As you know, the Aldrich award has been presented for a number of years, but the Bader awards to Prof. Thomas C. Bruice of the University of California in Santa Barbara and to Prof. Hanessian will be given for the first time this year.

Is there any chance that Profs. Ireland, Bruice and Hanessian, as well as their spouses and Isabel and I could be seated at one large table? If not, what do you think is the best solution?

Isabel's and my registration forms are enclosed.

Many thanks for your help.

Sincerely,

Alfred Bader
AB:mmh
Enclosures

P.O. Box 355, Milwaukee, Wisconsin 53201 USA, Telephone (414) 273-3850, Cable Aldrichem TWX 910-262-3052, Telex 26-843

American Chemical Society

OFFICE OF THE PRESIDENT

Paul G. Gassman
President-Elect, 1989
President, 1990
Immediate Past President, 1991

Department of Chemistry
University of Minnesota
Minneapolis, MN 55455-0431
(612) 625-2345

November 21, 1990

11-26-90
acd 11/re

Dr. Alfred Bader
Chairman, Aldrich Chemical Company, Inc.
Post Office Box 355
Milwaukee, WI 53201

Dear Alfred:

I have received your letter of November 12, 1990, and I have put together a package of information which should answer most of the questions which you might have. It your questions are not answered from this material, please get back to me immediately and we will arrange for whatever additional information would be helpful including a meeting in Washington if you feel that would be desirable.

Included in the information which I have provided is (a) a flyer which goes out to high schools and institutions of higher learning throughout the United States; (b) a sheet describing the administration of Project SEED; (c) a letter to chemistry researchers describing Project SEED including an application form for participation in Project SEED; (d) a copy of the 1990 program summary report; and (e) a copy of the outline of the projected SEED activities (which I had mailed to you in my earlier letter). In examining this material, you may see statements that appear to be contradictory. For instance, in the letter to chemistry researchers, it is indicated that $133,585 in stipends was distributed by Project SEED to 320 participating students. Obviously, 320 students at $1,000 each requires $320,000. The difference is that many institutions in their proposals commit matching funds (often in excess of a 1:1 match) in order to attract the SEED funding to their universities and institutions. Some industrial concerns run Project SEED activities for which they provide almost total funding. A second point relative to the funding that may seem inconsistent is associated with the statement in letter to chemical researchers that Project SEED distributed $133,585 while in the Project SEED 1990 summary report it is indicated in the executive summary that $86,556 was donated. The difference between the $86,556 which is donated and the $133,585 which was distributed represents income from endowments which the ACS has.

Of the $86,556 which was donated for the 1990 program, $41,751 was contributed by ACS members primarily at the time of their dues payments. $28,200 was contributed by the companies and foundations listed on the top of the second to the last page of the 1990 Project Summary report. $15,000 was provided by the Petroleum Research Fund and $1,605 was provided by the local sections and divisions listed.

Part of the endowment funds which provided a major contribution toward the $133,585 distributed came as initial donations to the Campaign for Chemistry. For instance, immediate Past President of the Society Clayton Callis personally contributed $50,000 toward the endowment for Project SEED. His contribution will endow five Clayton F. Callis SEED Scholars each year.

As you will remember from the outline of Project SEED activities which was sent to you with my earlier letter (copy attached) we would hope to expand the Project SEED activities in a manner which would aid exemplary Project SEED alumni from the high school program to enter into the sciences (especially chemistry) at the college level. Obviously, any donation from your foundation could be specified either for the high school or the college program. As I indicated in my earlier letter, the cost per college level participant will be considerably higher than the cost for the high school level participants.

Alfred, I really believe that the opportunity to have significant impact in this area is available through Project SEED. I hope to hear from you on this matter in the not too distant future.

With best personal wishes, I am,

Sincerely yours,

/cml
cc: Dr. Justin Collat

Project SEED

1990 Program Summary Report

November 1990

American Chemical Society
1155 Sixteenth Street, N.W.
Washington, D.C. 20036

Table of Contents

Executive Summary

This program report has been complied to provide specific information relating to the activities of Project SEED during 1990. Project SEED places promising high school students from economically disadvantaged families in a college, government, or industry laboratory for an eight to ten-week period during the summer. Preliminary survey results from the 1990 SEED students indicate that 74% were from ethnic minority groups and 48% were female.

More than 2,700 talented students and more than 250 institutions have participated in the program since its inception in 1968. This year a total of $86,556 was donated by a variety of sources including chemical companies, private foundations, ACS local sections, divisions, and members. These contributors enabled 320 students to study and work in research labs at 85 participating institutions. ACS pays all administrative costs of Project SEED while the $1,000 stipend each student receives comes directly from donations.

This year, a grant from the National Science Foundation in the amount of $54,000 enabled 21 minority students to work as part of the ACS/NSF Young Scholars Partnership program. They worked in research labs at four sites across the country. In addition to the research, they also participated in a variety of activities designed to instruct the students in research methodologies, scientific philosophy and ethics, and career awareness and planning.

The SEED program has been extremely successful in contributing to the career development and personal and educational growth of disadvantaged young people. Before their Project SEED experience, 58% of the students in last summer's program planned to attend graduate or professional school; after the program, 63% expected to complete this level of education. At least 82% of the youth reported that their involvement in Project SEED helped them learn what advanced study is like, gave them a better understanding of the purpose of scientific research and how it is done, and enabled them to discover new skills and abilities. The personal relationship that these young people develop with their research supervisors and the experience of performing meaningful research are key factors in raising the students' goals and expanding their horizons. Since the need for future scientists and mathematicians is a national concern, this model program permits industries, schools, and associations a chance to work together to provide enriching experiences to disadvantaged young people in a realistic and educationally meaningful way.

1990 Project SEED Programs

State	Institution/ Coordinator Preceptor(s)	Student(s)
AL	**University of Montevallo**	
	Beal	
	Bhavava	James R. Dorminey
	Hung	Shannon Fletcher
	O'Donnell	
AR	**Arkansas State University**	
	Draganjac	
	same	Lynel D. Graham
		Tonya Spurlock
CA	**ACS California Local Section**	
	Yamaguchi	
	Fuller	Victoria Choi
		Nichole Mason
		Damian Stumpf
		Photbt Sun
		Dorothy Wong
CA	**California State University-Fresno**	
	Chan	
	Bluestone	Johnny Ow
	Gandler	Khamphoune Senava
	Gump	Thruth Yang
	Mayer	
	Ng	
	Sy	
	Wong	
CA	**California State University-Northridge**	
	Rosenberg	
	same	Javier Castrellon
		John Valadez
CA	**Naval Weapons Center**	
	Vanderah	
	same	Rose Gregory
CA	**San Jose State University**	
	Silber	
	same	Fred Figueroa

State	Institution/ Coordinator Preceptor(s)	Student(s)
CA	**University of California - Davis**	
	Kauzlarich	
	Schiffman	Jose Louis Enriquez
	Hofmeister	Monica A. Pena
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	Bishop	Tamara Elmore
	Cooke	Jahi Johnson
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		Minh Lam
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		Amy Lew
		Damian D. Spieckerman
		Debra L. Wong
		Richard C. Wong
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	same	Margie Alexander
		Lisa Wey-Lan Chu
		Bahia Ii
		Vixiane Sengsouvanh
		Michele Yi
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	May	
	same	Trenton Bennett
DC	**Food and Drug Administration**	
	Trucksess	
	same	Samuel E. Lynch
DC	**Howard University**	
	Williams	
	Thorpe	Mark A. Sheppard
DC	**The American University**	
	Girard	
	Roscher	Tracey Bailey
		Dionte Myles

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	Taher	
	same	Shenesha Bowen Talal Timash
LA	**Louisiana State University**	
	Maverick	
	same	Phaedra L. Perkins

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		Christy Eileen Rollins
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	Hosmane	
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MD	**University of Maryland Eastern Shore**	
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	Latterell	
	same	Diallo R. Murphy
		LaTonya T. Wells
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	Roy	
	same	Tyrone Lewis
		Phillip Stettner
		Monica N. White
MO	**University of Missouri**	
	Emerich	
	same	Ronald W. Hall
MS	**University of Mississippi**	
	Hussey	
	Eftink	Antonia S. Beavers

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	Grimley	Sheila L. Dove
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		Cathy L. Smith
		Nguyen True Van
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	Oakland	
	same	Daniel P. Jablonski
NH	**Keene State College**	
	Jasinski	
	same	Theresa Brown
		Christian Damato
NJ	**AT&T Bell Laboratories**	
	Seibles	
	Cole	Staci Reaves
		Jaime E. Va'Zquez
NJ	**Hackensack Meadowlands Dev. Co.**	
	Hobble	
	same	Dean Taklif
NJ	**Jersey City State College**	
	Pamer	
	Masulaitis	Claudio Betancourt
		Theonyl Cuevas
NJ	**Kean College**	
	Criasia	
	same	Walter Cabrera
NJ	**Montclair State College**	
	Isidor	
	same	Georgena R. McLeod
		Orlene Thomas

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	Sofer	
	same	Arick Brutus
		Alterick S. Davenport
NJ	**New Jersey Instit. of Technology**	
	Bozzelli	
	same	Kimberely Q. Johnson
NJ	**Rutgers University - Cook College**	
	Greenberg	
	same	Dyshelle R. Harris
NJ	**Rutgers University - Newark**	
	Schelgel	
	Lalancette	Thoi Nguyen
		Atul Pasricha
NJ	**Rutgers University - Piscataway**	
	Roth	
	Berman	Catherine Calderon
	Olson	
NJ	**Seton Hall University**	
	Huchital	
	Burke	Kathleen Baker
	Cheng	Donny Cruz
	Petersheim	Jacinda L. Holloway
		Wendy Reid
NJ	**Stevens Institute of Technology**	
	Sirkar	
	Bose	Ingrid E. Callejas
	Manhas	Alina Guerra
		Olayn Riveria
NJ	**UMDNJ-Robert Wood Johnson Med. School**	
	Leyton	
	same	Rosemary Rollis
NJ	**Veteran's Administration Medical School**	
	Dayal	
	same	Amrin Hussain

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NJ	**William Paterson College**	
	Pardi	
	same	Anthony Lance
		Mawiyah Britton
NM	**Los Alamos National Laboratory**	
	Kaye	
	Dogruel	Clarissa N. Bustos
	Brown	David E. Chavez
	Sutcliffe	Maria A. Esquibel
	Bevacqua	Jason D. Garcia
	Rzeszutro	Victor J. Marquez
		Jenny B. Nation
		Carla L. Romero
		Leslie D. Sandoval
NM	**New Mexico State University**	
	Bhada	
	same	Ruben Alba
		Bernie M. Chavez
		Lupita Dominquez
NY	**Cooper Union for the Advancement of Arts**	
	Lucchesi	
	Bove	
	Students	
	Rabbi Ahmed	Chen Chung Ling
	Camille Anderson	Karl Lozanne
	Tanweer Ansari	Robert Machado
	Joseph Calzaretta	Susan Michajlo
	Sacheen Carr-Ellis	Motria Mitringa
	Ting Cheng	Michelle Morales
	Edward Cheung	Ching Mui Fu
	Jimmy Chin	Chen Ngai
	Terencia Ellison	J. Nichols Paul
	John Epaga	Agnes Pemberton
	Sheila Estaico	Paul Presti
	Lila Gargu	Abraham Ronai
	Robert Goldman	Gregory Sczesnik
	Charmaine Gregory	Karla Sevilla
	Dominique Guy	Sapana Shah
	Jin Chun Han	Henry Shih
	Po Hsiao	Suraj Singh
	Nickol Huff	Seth Snyder
	Meher Jan	Elizabeth Tartell
	Shatysh Kelly	Rashid Taylor
	Irim Khan	Ranjit Thomas

State	Institution/ Coordinator Preceptor(s)	Student(s)
NY	**Cooper Union for the Advancement of Arts (continued)**	
	Students	
	Jahyun Kim	Anthony Tonns
	Paulina Kim	JoAnn Tricarico
	Young Kim	Hsin-Yi Tsai
	Damir Kolich	Nisha Tulyani
	Prem Krishnamoorthy	Ion Claudiu Vaduva
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	David LI	Joann Weed
	Subhobrata Lahiri	Chun-Tung Wong
	Joan Lee	Shirley Wong
	Samuel Lee	Michael Ying
	Suszanne Lim	Nicole Zorn
NY	**Cornell University- Sidney High School**	
	Pysnik	
	same	Deanna Barnes
		Monv Beehler
		Tanya Tralka
		Joann E. Weed
		Heather Whitaker
NY	**Cornell University Medical College**	
	Scarlata	
	same	Gavin Stewart
NY	**Hunter College of CUNY**	
	Mootoo	
	Mills	Mark Brown
		Nguyen V. Phong
NY	**Lehmann College**	
	Phillipp	
	same	Neilawattie Timaul
		Karamo Washington
NY	**Monroe Community College**	
	Henzel	
	same	Yolanda Griffin
		Thomas Fixon

State	Institution/ Coordinator Preceptor(s)	Student(s)
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	Hale	
	same	David P. Brunk
		Daniel T. Brunk
		Wayne Palmatier
NY	**State University of New York - Plattsburg**	
	Miller	
	same	Ken Relation
NY	**SUNY-Coll. of Environmental Science & Forestry**	
	Boyer	
	Cabasso	James P. Arnold
		Andrew Brian Evans
		John Kappil
NY	**University of Rochester**	
	Basu	
	same	Katina Chester
		Souphot Mune-Ath
OH	**Cleveland State University**	
	Duraj	
	same	Angela Jackson
OH	**Mead Imaging Co.**	
	Hipps	
	same	Suzy Barrett
		Tankia Battles
		Esha Cooper
		Jay Ellington
		Latasha Glanton
		Angela S. Herring
		Lytoi Holcombe
		Shawn Long
		Jonathan McBride
		Scott Neal
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		Nandisile Sithole
		Shelley Tramel
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	D'Ambrosio	Ionica Butcher
	Webb	Lewis Monroe
OH	**University of Cincinnati**	
	Jones	
	Caruso	Jonathan McBride
	Darcy	
OK	**Oklahoma State University**	
	Adams	
	same	Scott S. Joslin
PA	**Beaver College**	
	Mikulski	
	same	Michael Rushdy
PA	**University of Pittsburgh**	
	Clinton	
	Brady	William Buckner
PR	**Recinto Universitario De Mayaguez**	
	Pirazzi	
	Hernandez	Luis J. Feliu
		Annie M. M. Lugo
		Luis Angel A. Torres
SD	**University of South Dakota**	
	Engstrom	
	same	Aaron Woodard
TN	**East Tennessee State University**	
	Bell	
	Kasmai	Franklin B. Campbell
	Wardeska	Clara Phillips

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	Falter	Thais G. Dacunha
	Reid	Richard Dalton
	Mizgroct	Efrain Delgada-Mojica
	Richardson	Jessica A. Gaspar
	Woodward	Lourdes J. Hernandez
	Gammage	Fred Kleimola
	England	Juan A. Luna
	Kszos	Melisa D. Reynolds
	Byers	Ivan O. Rivera-Torres
	Hall	Edmundo Rivera-Santos
	Whealton	Jason C. Robbins
	Tilson	Steven Robbins
	Hutson	James K. Smith
TX	**Incarnate Word College**	
	Doebbler	
	same	Marie Salazar
TX	**Midwestern State University**	
	Palma	
	same	Gregory Coleman
		Darrin E. Sanderson
TX	**Texas Southern University**	
	Wilson	
	same	Bari S. Nelson
TX	**University of Texas Medical Ctr.**	
	McAdoo	
	Ansari	Lawrence C. Coleman
	Miller	Karen E. Elithorp
		Aquiles F. Lopez
TX	**University of Texas at Dallas**	
	Balkus	
	same	Angela Armstrong
		Pete R. Henderson
VA	**Old Dominion University**	
	Scully	
	same	Kenneth W. Head

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	Mueller	
	same	Robert Wild
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	Wood	
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1990
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ACS Division of Professional Relations
ACS North Jersey Local Section
ACS Puerto Rico Local Section
ACS Petroleum Research Fund
ACS Members
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American Institute of Chemical Engineers
American Institute of Chemical Engineers
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(Given as Matching or Supplemental Funds)

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Louisiana State University
Mead Imaging, OH
Midwestern State University, TX
Monroe Community College, NY
Montclair State College, NJ
New Mexico State University
Northern Illinois University
Oak Ridge National Laboratory, TN
Old Dominion University, VA
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Seton Hall University, NJ
Southern University-Baton Rouge, LA
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State University of New York - Alfred
Tarleton State University, TX
The University of Texas Medical Branch
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University of Cincinnati
University of Miami
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American Chemical Society

Project SEED

10 weeks that can change a lifetime


L.B.C.

Project SEED:

Summer Educational Experience for the Disadvantaged

What is Project SEED?

Project SEED is an innovative career development activity administered by the American Chemical Society for economically disadvantaged high school students. SEED students spend ten weeks during the summer in an academic, industrial, or governmental research laboratory working under the supervision of a researcher or research assistant. Students earn a small summer stipend, receive career and college counseling, and participate meaningfully in research. Yet, it is the personal relationship between the students and the researcher that is the key factor in raising these students' goals and expanding their horizons.

All administrative expenses of the program are born by ACS. Student stipends come from volunteer contributions from individual ACS members, ACS local sections, corporations, and foundations.

How Are Institutions Selected to Sponsor a SEED Student?

Interested institutions apply to the American Chemical Society's Committee on Project SEED for funding at the beginning of each year. Award monies cover student stipends. Supplies, materials, and any overhead expenses are provided by the participating institution. Priority for funding is given to those institutions with matching or supplemental funds from local sources or ACS local sections.

How Are Students Selected?

The funded institutions recruit their own students to participate in the program. The researcher of each institution contacts local high schools in order to identify a large number of potentially eligible students.

Students are selected based upon grade point average, standardized test scores (if available), and teacher recommendations. All students must have completed the 11th grade, live within commuting distance of the institution, and come from an economically disadvantaged family. Researchers interview the most likely candidates, looking for students who, with encouragement and enrichment from this program, can more fully develop their potential

How Successful is Project SEED?

Over 1,500 high school students and 200 institutions have participated in this summer science outreach program since it began in 1968

In 1979, a random sample of SEED students were surveyed. Of the students responding, 97% had continued their education beyond high school, 35% had received degrees by 1979, and 14% were in graduate school

SEED does not try to create scientists. Rather, it attempts to overcome some of the obstacles — social, institutional, attitudinal, and educational — which have traditionally excluded the disadvantaged from preparation for and entrance into professional careers. Clearly, Project SEED has been a great success for those fortunate students who have participated in this model program

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For more information, contact: **Project SEED**
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1155 Sixteenth Street, N.W
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Kalualani Martin and Dr Bob Howell at Central Michigan University. (Photo by Robert Barclay of C M U.) Used with permission of "The Midland Chemist"

L-R: Robert Notter, Department of Pediatrics, University of Rochester Medical School; Lundys Gordon, Project SEED student; Josh Lipsitz, Director of Student Equity and Placement, Rochester City School System (front row, 1 to 3); David G. Bush, Chairman, Rochester Section; Edward Thomas, Project SEED student; Dr Cecilia McLendon, Department of Chemistry, University of Rochester (back row, 1 to 3).

◀ *Linda Tinsley (left) assisting Nancy Fontaine's research at the University of Minnesota, Duluth*

Paul Wansley, Jackson State University, Project SEED student, using Chemical Abstracts

Jerome Danzel at Southern University, Shreveport

Kaluala'i Martin (left), Dr. Bob Howell, and Shelly Thering at Central Michigan University (Photo by Robert Barclay of C.M.U.) Used with permission of "The Midland Chemist."

Carvin Watson at Southern University – Shreveport

◀ *Dr. Ed Fiehler of Miami University – Middletown, OH with his SEED students Joe Wirtley, Jeanie Edwards and Sherry Brown*

Administration of Project SEED

Day-to-Day Operations

Project SEED is a program of the American Chemical Society's Education Division. It is administered by the Office of High School Chemistry. Ms. Martha K. Turckes, Manager of the Office of High School Chemistry, serves as the Staff Liaison to the Committee on Project SEED. Ms. Denise Creech, Senior Staff Associate in the Office of High School Chemistry, is responsible for the day-to-day administration of the program. Ms. Renee Strong, program assistant, assists the Staff Associate with the management of the program.

Committee on Project SEED

The Committee on Project SEED is a Council Other Committee of the American Chemical Society. Dr. Edwin T. Harper of the Indiana University School of Medicine is the current chair of the committee. The committee consists of seven members in addition to the chair. The committee has seven associate members and eight friends. The committee meets three times each year: in March to review proposals and select institutions to host SEED students, and at the annual spring and fall national meetings of the American Chemical Society.

Program Overview

Since its inception in 1968, Project SEED has enabled more than 2700 talented high school students to conduct research in local academic, industrial, and government chemistry laboratories, under the supervision of research scientists. Students in the program (typically more than 60% from minority groups, 50% female) work and earn stipends in chemical research labs for 10 weeks during the summer. SEED is one of the few national programs that supports high school students doing chemical research.

Identification of Preceptors and Students

The Committee on Project SEED solicits proposals from two- and four-year colleges and universities, and government and industrial laboratories each winter. The Committee reviews the proposals in March and selects institutions and preceptors to host SEED students. Institutions are encouraged to locate local matching funds to assist with student stipends. The institution bears sole responsibility for identifying local students to participate in the summer experience. Financial guidelines are issued to the institutions to aide them with this task.

Allocation of Funds

Summer stipends have been set at $1200 for the summer of 1991. All processing of funds occurs through the national office after the Committee on Project SEED has made its allocation. Upon receipt of student information and financial forms, the national office sends the institution or ACS local section $1200 for each student in the program. Preceptors are then responsible for distributing weekly or biweekly paychecks to the students throughout the ten-week experience.

Magnitude of the 1990 Program

A total of 320 students participated at 85 institutions during the summer of 1990, the largest program during Project SEED's 22 year history. Before their Project SEED experience, 58% of the students in last summer's program planned to attend graduate or professional school; after the program, 63% expected to complete this level of education. At least 82% of the youth reported that their involvement in Project SEED helped them learn what advanced study is like, gave them a better understanding of the purpose of scientific research and enabled them to develop new skills and abilities.

Personnel Involved with the 1990 Program

ACS Staff	10%	Turckes
	30%	Creech
	31%	Strong
	21%	Strong (federal grant supported)
Committee on Project SEED	7	Members
	7	Associates
	3	Liaisons
	8	Friends
Preceptors	85	Preceptors
Students	320	Students
Value of Stipend	$1000	

OUTLINE OF PROJECT SEED ACTIVITIES

Overview:

Project SEED, established in 1968, is the Society's major commitment to expanding the career outlook of economically disadvantaged students. The program places high school students in academic, governmental, and industrial research laboratories for 10 weeks during the summer between their junior and senior years. Project SEED has two functions: (1) to encourage economically disadvantaged students to continue study beyond high school, and (2) to encourage these students to major in a science-related discipline. The program is not intended for academically-achieving students who are more likely to have access to other resources. The focus, rather, is on underachieving students who, with help and encouragement, will achieve at a high level.

The Need for Project SEED:

Minorities traditionally have not chosen science or engineering for advanced studies. As the percentage of minority students as part of the total number of high school graduates increases, it becomes more important to encourage them to consider science as a career option. Although SEED is not a minority recruitment program, some 60 percent of the students are from racial minorities (and 50 percent are female). This high participation by minorities is important.

The National Science Foundation has predicted that the nation will produce 400,000 fewer engineers and scientists than it needs by the year 2000. Even now, only 6 percent of undergraduate degrees in the U.S. are in engineering, compared to West Germany's 37 percent. Japan now produces as many engineers as we do, with a labor force half our size.

To encourage economically disadvantaged students who qualify to participate in the Project SEED program, stipends are offered to replace the money they need to earn from summer jobs. Project SEED stipends are currently $100 per week or $1,000 for the ten week program. The students work under the

supervision of research scientists who train them, guide their lab work, and counsel them in preparing for science careers. This work experience gives disadvantaged students an opportunity to see for themselves the career possibilities that science offers.

Project SEED has proven itself an effective intervention program. Over the past 20 years, more than 2,200 economically disadvantaged students have completed the program. About 73 percent have gone on to higher education. The research scientists (called preceptors) attempt to identify students who could be successful in a chemically-related career, given the proper motivation. This program is directed to students who rarely achieve up to their potential due to their socio-economic circumstances. Students participating in the summer program receive training and counseling, as well as the stipend. Most significantly, they develop personal associations with preceptors, research assistants, and other students that continue well beyond the summer. The all-important mentor relationship has proved, time and again, to be the pivotal factor that encourages disadvantaged students to continue their education after high school and to select a scientifically-oriented career. Many college preceptors have established regular contacts with local high schools and, as a result of their positive exposure to SEED students, have gained experience and developed an understanding of working with young men and women from cultural backgrounds that are greatly different from that of the average college student. Many preceptors have long-term involvement in the program resulting in stability and experience that are valuable in providing a good environment for the students.

Project SEED students are the best testament to the success of the program. According to Steve McBride, who worked with Dr. Robin Rogers in The Michael Faraday Laboratories at Northern Illinois University, he realized the possibilities for his future.

> *"I began to feel as though I could become a research scientist. I had never considered this before Project SEED. I was left with desire to explore new frontiers, a knowledge of life on a college campus, what being a teacher is like, what training is like, and what being a chemist is like. I also learned companionship, competitiveness, and respect for other people's priorities."*

Funds Needed:

Project SEED requests funding annually from individuals and corporations to support the stipends for the summer students. Because of the uncertainty of the funding available each year, a basic program could never be guaranteed.

Enrollment in Project SEED has grown steadily over the past two decades. The program's capacity is limited by its yearly budget. For this reason, the ACS does not publicize SEED widely. Instead, we work through college chemistry professors, many of them long associated with the program, who approach local high schools for applicants. Even so, applicants have outnumbered the available slots every year. In 1988, 194 students participated at 76 institutions; more than 2,200 students have participated since it began in 1968.

The ACS Board of Directors are committed for the long-term to increasing science education and career opportunities to all segments of the population. Project SEED has proven over the last 20 years that it is successful and does work. In addition, the ACS is committed to helping those high school Project SEED students who graduate and wish to pursue a science career. To do this, the stipends for college are needed.

In order to ensure the future of the program, a Project SEED Endowment of $2.5 million was included in the Campaign for Chemistry's overall goal. Annual funding will still be sought to expand the program. As of April 30, 1990, commitments totaling $1,637,270 have been made; $1,062,270 by individuals and $575,000 by corporations. Many of these commitments, however, are five-year pledges and only $530 has actually been received at this time and is earning interest which may be used for stipends.

American Chemical Society

Edwin T. Harper, *Chair*

COMMITTEE ON PROJECT SEED
1155 16th Street, N.W., Washington, D.C. 20036
Staff Liaison (202) 872-4380

MEMORANDUM

TO: Chemistry Researchers

FROM: Denise Creech, Senior Staff Associate
ACS Committee on Project SEED

SUBJ: Participation in the 1991 Project SEED
(Summer Educational Experience for the Disadvantaged) program

DATE: December 1990

Your department or research group is invited to apply to participate in Project SEED, the American Chemical Society's summer program for economically disadvantaged high school students. Project SEED, the Society's career education and social action program, was established in 1968 to help expand the career outlook of economically disadvantaged students.

During the past 22 years, Project SEED has enabled more than 2700 talented high school students to spend the summer conducting research in local academic, industrial, and government chemistry laboratories, under the supervision of researchers and research assistants. Project SEED provides opportunities for students who historically have been denied exposure to scientific careers.

Students participating at your institution in the eight to ten week summer program will receive a stipend of $1,200 from the ACS. Participating institutions are asked to provide financial support in the form of materials, supplies, and overhead expenses.

Although the researchers/preceptors receive no financial remuneration from ACS, chemists and chemistry departments are anxious to participate in the Project SEED experience. Previous preceptors identify SEED's positive aspects in terms of developing an understanding of young people from diverse cultural backgrounds, benefiting from the enthusiasm a young student brings to a research group, and serving the community in which the institution is located.

Last year, Project SEED distributed $133,585 in stipends to 320 participating students. These funds were provided entirely by contributions from corporations, foundations, and individual ACS members. Although generous, these contributions are not sufficient to provide stipends for every student deserving of the Project SEED experience. Therefore, preceptors providing matching or supplementary monies from local resources are given priority in the allocation of the national funds.

Enclosed are the Project SEED program guidelines, an application form and a suggested list of supplementary funding sources. Two other papers--"Tips for Running an ACS SEED Program" and "Local Section Action Plan" --explain how to start and run a SEED program. Both can be obtained by writing or telephoning the ACS SEED office.

The American Chemical Society's participation is limited to the coordination of the project and to national level fundraising activities. The participating institution bears sole responsibility for the proper selection of eligible students and there is no stipulation that the institution have the students identified prior to the application process. ACS does not take part in, nor is it responsible for, the selections made by the participating institution.

Please note that item 8 in the application requests that the Department Chair sign the application. This signature is not required and will not be appropriate in various situations. However, many preceptors will find that acknowledgement by the Chair may aid in administrative matters and in approaching the administration for help with expenses and perhaps a contribution toward the student stipend.

If you would like to sponsor a SEED student at your institution during the summer of 1991, please return the enclosed application to ACS by February 22, 1991. The Committee on Project SEED will review all applications **postmarked by February 22**. You will be notified as to the success of your application by April 1, 1991.

Enclosures

1990 SEED Students Speak Out

"Project SEED was a grand experience for me. I've learned many things about nature; the insect world, the plant world and the exciting but yet dull world of an adult. By participating in the program at the Western Regional Research Center in the biological control sector, I've learned that insects that are seen on a daily basis may be useful to the environment economically and help beautify our surroundings."

Nichole Mason
Western Regional Res. Ctr., USDA, CA

"...To tell you the truth, chemistry to me was not a very exciting subject, but after participating in this great program Project SEED, I realized that chemistry can be very exciting when you deeply get into the hang of things and observe the things one has done and worked with. Project SEED has opened my eyes to see that chemistry can be a very exciting career."

Marlene Horton
Northern Illinois University

"The SEED program has helped me understand what college chemistry is all about. It is nothing like high school chemistry, because there is no grade involved, but my ability to get a job done in the allotted time was important. It was important not just to memorize, but to know and understand what I and my co-workers are doing from day to day. The experience I gained will be with me for a long time and has given me an edge that not many people are able to get."

Kenneth Head
Old Dominion University, VA

"I am glad I had the opportunity to participate in Project SEED. It was hard work but at the same time it was challenging and satisfying. The laboratory experience I gained has given me the chance to see how research chemistry experiments are conducted and I got a taste of what college life is like."

Damian Stumpf
U.S. Department of Agriculture, CA

AMERICAN CHEMICAL SOCIETY

APPLICATION FOR SUMMER 1991

1. Institution:_____

   Department:_____

   Address_____

   City_____ County_____ State_____ ZIP_____

2. SEED coordinator:_____

   Address_____

   City_____ County_____ State_____ ZIP_____

   Telephone number: ( ) _____ - _____

   Past involvement with Project SEED? Yes_____ No_____ What years?_____

3. Number of SEED students requested for summer of 1991:_____

   a. Funds available from local sources *for stipends*:_____

   b. Amount of money requested from Project SEED:_____

   Note that (a) plus (b) must equal number of students times $1,200. If not, please explain.

   _____

4. Local funding sources: Please give name of each source, amount, and indicate whether money is for stipends, research materials or other expenses. (We use this information for suggestions to help other preceptors and to give the contributors credit in our reports.)

   Names(s) and Amount(s):_____

   Comments: _____

   _____

5. Name of other student programs being run concurrently or in conjunction with Project SEED:

   _____

   Sponsor:_____

   Comments:_____

   _____

ACS PROJECT SEED

• *Summer Educational Experience for the Disadvantaged* •

6. Please provide the following information for each SEED preceptor. Use additional sheet(s) of paper if necessary.

Name:_____

Institution:_____

Address_____

City_____ County_____ State_____ ZIP_____

Past involvement with Project SEED? Yes_____No_____ What years?_____

If you are a PRF grantholder, give number of grant:_____

Title of student research project:_____

Give a brief description of research project, including specific equipment and techniques employed. If other activities (field trips, seminars, etc.) are planned, give details. Use additional sheet(s) of paper if necessary.

_____

_____

_____

_____

_____

7. ACS local section:_____

Name of local section contact:_____

8. Signature of Department Chair or responsible institutional officer (optional):

Name_____Title_____

Signature_____Date_____

Any other supervising administrator (for purposes of preceptor recognition):

Name_____Title_____

Please return completed form by Friday, February 22, 1991 to:

Denise Creech
ACS Project SEED
American Chemical Society
1155 16th Street, NW
Washington, D.C. 20036
(202) 872-4380

AMERICAN CHEMICAL SOCIETY
PROGRAM GUIDELINES--PROJECT SEED 1991

Financial Guidelines

1. The student ***must*** be recognized as economically disadvantaged. Preference should be given to students whose families have annual incomes that are below the federal poverty income guidelines* and who also may be encouraged by their work in a chemical laboratory to make better use of their capabilities. An economically disadvantaged student applicant who is physically disabled ***must*** be considered on the same basis as any other applicant and may not be discriminated against in any way.

   ***Federal poverty income guidelines from the 1989 Federal Register, Vol. 55, No. 33, February 16, 1990**

Size of Family unit	**1**	**2**	**3**	**4**	**5**
Poverty Guideline	**$6,280**	**$8,420**	**$10,560**	**$12,700**	**$14,840**

   For families of more than 5, add $2,140 for each additional family member.

   The maximum family income is $25,000, except in cases where other factors are present which may deter a student from considering a career in science. The committee will accept applications from students whose family income is up to $32,000 if evidence is provided that factors which contribute to underrepresentation in the sciences are present. Examples of such factors include:

   - member of an underrepresented ethnic group (Black, Hispanic, Native-American)
   - parents/guardians have not attended college
   - student lives in a single parent household or is a member of a large family

2. The student should be a commuting student, except in those cases where the institution (college, university, industry) can provide free room and board and proper supervision.
3. In general, each student should receive a minimum of $1,200 for up to 10 weeks of approximately 40 hours work per week. A check for the total amount of the award will be sent to the institutional sponsor or the ACS local section officer for disbursement to the student(s). In those cases where this procedure would be in conflict with the institution's administrative practices, other appropriate action can be considered.
4. The participating institution--or some other source of local funds--will be expected to bear any overhead expenses.
5. If the student terminates with the program prior to completion of his/her obligation, the disbursement of the stipend will be prorated and the unused funds returned to Project SEED, at the American Chemical Society, by the end of the summer.

Academic Guidelines

1. The student participant should be entering his/her junior or senior year in high school in September 1991. ***ACS funds are restricted to students who have not previously participated in the program.*** Preceptors are encouraged to keep students for a second year using other available funds.
2. The candidate should be a student who, in the judgment of his/her teacher, could be motivated to a greater effort as a result of this exposure to scientific research. The student must be interested in science and must have completed a course in chemistry.
3. Each SEED student should take a meaningful part in research activities under direct guidance. The development of a personal relationship between the student and the preceptor is considered a key factor in raising the student's goals and in expanding his/her horizons. It is essential to the program. The student's role should be considerably more than that of a dishwasher or observer.
4. It is the duty of the preceptor to make certain that the student is covered under the university's comprehensive insurance protection plan and that the student is taught and follows approved safety procedures. It is also the preceptor's duty to ensure that the student works in an environment where all necessary and usual safety precautions have been taken. The student must understand both the precautions taken and the reasons for such precautions.
5. The student should be given college and career counseling by the preceptor. In addition, the ACS Career Publications Program will provide all students with a packet of career education materials.

Administrative Guidelines

1. The student must write a report of the summer's work (3-5 pages is adequate). A copy of this report must be submitted to ACS. Copies should also go to the student's high school and to any other sources from which the student received stipend support. The ACS SEED Student Survey, required for the program's assessment, improvement, and public relations efforts, must also be completed and returned. Upon receipt of these final reports from the student, ACS will send the student a certificate of completion.
2. A brief report from the preceptor must be sent to the ACS SEED Office and may be sent to the other funding sources at the conclusion of the program. Where possible, local contributors should be mentioned in any news articles. High quality photographs, 35mm slides, or videotapes of SEED participants in the laboratory setting are always welcome because they enhance our public relations efforts with potential contributors. Photographs must show the participants wearing appropriate safety equipment, particularly goggles, and taking appropriate safety precautions. Please identify all individuals pictured and include their titles and institutions.
3. ACS coordinates Project SEED and conducts the national-level fundraising activities. Acting under the authority of the participating institution, the local SEED coordinator usually works with the preceptor(s) to select the student and operate the program in accordance with the financial and academic guidelines set out above by the ACS. The participating institution bears sole responsibility for the proper selection of eligible students. The American Chemical Society's participation is limited to the administration of the program. ACS does not take part in, nor is it responsible for, the selections made by the participating institution.
4. ACS reserves the right to deny funding to any student who does not meet the guidelines set out above.

If special circumstances suggest departure from the guidelines, please consult with the Project SEED staff at 202-872-4380.

November 1990

Please join the Council Committe on Project SEED as we honor the many students, preceptors, coordinators, and committee members who have been involved with the program over the past 25 years at the American Chemical Society's 206th National Meeting in Chicago, Illinois.

Luncheon: *Dr. Alfred Bader, Founder of Aldrich Chemical Company*
"The Significance of Project SEED II"

Symposium: *The symposium will honor the late W. Lincoln Hawkins and Milton H. Harris, major contributors to the early development of the program.*

1:45 Introductory Remarks: D. Chamot
1:55 Project SEED: A 25-Year Odyssey: J. P. Shoffner
2:25 A Most Unlikley Success Story: D. W. Osborne
2:45 Project SEED: The Growth of Success: K. L. Nguyen
3:05 Synthesis of 2,3-Methanophenylalanine Model Peptides and Project SEED: J. A. Downing, S. P. Murphy, J. A. Sirois, M. L. Spakoski, F. L. Switzer
3:35 The Beginning of SEED: A. C. Nixon
3:55 From High School to the Pharmaceutical Industry -- A Path Starting with Project SEED: B. A. Olsen
4:15 Where are They Now? Overview of a SEED Program: T. Goodson, R. Bonjouklian, G. Good, E. Harper
4:35 A SEED Story: R. D. Desrochers

Reception: *Recognition of Project SEED participants and preceptors.*

The luncheon is a ticketed event. Please purchase a ticket ($25) when registering in advance for the meeting. If you miss the deadline (August 2), you may reserve a ticket by calling the Project SEED Office until August 13, at (202) 872-4380. Come! Celebrate 25 years of a program that has opened doors and fulfilled dreams for nearly 4,000 students.

The American Chemical Society
Council Committee on Project SEED
cordially invites you to attend
the Project SEED 25th Anniversary Celebration

Opening Doors and Fulfilling Dreams
1968-1993

Monday, August 23, 1993

Luncheon
Sheraton
Chicago Ballroom VIII

Guest Speaker:
Dr. Alfred Bader
12:00 Noon - 1:30 pm

Symposium
Sheraton
Chicago Ballroom V
1:45 - 5:00 pm

Reception
Sheraton
Chicago Ballroom VIII
5:00 - 6:30 pm

Plan For The Future

Contribute to Project SEED

Because of your donations, Project SEED celebrates 25 years of contributing to the career development and educational growth of nearly 4,000 talented students throughout the United States. Project SEED is the Society's social action program that places economically disadvantaged high school students in academic, industrial, and government research laboratories. For eight-to-ten weeks during the summer, they experience what it's like to work as part of a team doing hands-on research. The primary goal of Project SEED is to help underprivileged adolescents discover the challenges of science and aspire to career choices that will make contributions to society.

Please join the thousands of ACS members who plan for the future of chemistry by sending your tax deductible contribution today or add it to your dues bill. All contributions to Project SEED are used to support educational awards for the students.

Yes! I would like to contribute to the future of chemistry.

Enclosed is my contribution of:

- ❑ $50.00
- ❑ $20.00
- ❑ $10.00
- ❑ $ 5.00
- ❑ Other $____

57206/9130/B999

Please return this contribution slip with a check made payable to the American Chemical Society, Project SEED, 1155 Sixteenth Street, N.W., Washington, DC 20036; or for more information on Project SEED, contact the SEED staff at (202) 872-4380.

Thank you for your continued support.

American Chemical Society

OFFICE OF THE PRESIDENT

Paul G. Gassman
President-Elect, 1989
President, 1990
Immediate Past President, 1991

Department of Chemistry
University of Minnesota
Minneapolis, MN 55455-0431
(612) 625-2345

February 4, 1991

Dr. Alfred Bader
Chairman, Aldrich Chemical Company, Inc.
Post Office Box 355
Milwaukee, WI 53201

Dear Al:

As a follow up to our conversation, I have checked on the people who run Project SEED for the American Chemical Society. The person in charge is Ms. Martha Turckes [telephone (202) 872-4382]. Her assistant in managing the program is Ms. Denise Creech. I have discussed the visit of you and your son to ACS headquarters on April 29 for the purpose of discussing the operational aspects of Project SEED. Ms. Turckes has indicated to me that she will be there on April 29 and that there will be no problem in arranging her schedule to provide as much time as you and your son desire. When you know the details of your schedule in Washington, please call Ms. Turckes to set up the visit to ACS headquarters.

If, after your visit, there is any information which you feel you still do not have, please feel free to contact me and I will try to provide any additional information which you might desire.

With best personal wishes, I am,

Sincerely yours,

Paul

/cml
cc: Dr. Justin Collat
Ms. Martha Turckes
Dr. Ernest Eliel

American Chemical Society

AWARDS PROGRAM

1155 SIXTEENTH STREET, N.W.
WASHINGTON, D.C. 20036
Phone (202) 872-4408

10: CH
4-15-9

April 5, 1991

Dr. Alfred Bader
Chairman
Aldrich Chemical Co., Inc.
940 West St. Paul Ave.
Milwaukee, WI 53233

Dear Dr. Bader:

With the presentation of the 1992 ACS Award for Creative Work in Synthetic Organic Chemistry the agreement between ACS and Aldrich Chemical Company, Inc., sponsor of the award, comes to an end. The ACS Board Committee on Grants and Awards, noting this fact, took the following action at its meeting in December 1990:

> VOTED to invite the sponsor of the ACS Award for Creative Work in Synthetic Organic Chemistry to renew sponsorship of the award for five presentations beginning in 1993 subject to ACS policies for the administration of awards.

The current terms of the ACS Award for Creative Work in Synthetic Organic Chemistry are as follows:

Stipend to recipient	$3,000
Administrative fee	4,070
Travel allowance	1,000
Commemorative Certificate	actual costs

While the Board has established $3,000 as the minimum stipend to the recipient, many sponsors have elected to increase the stipend to $5,000.

You may be curious about the nature of the administrative fee. The majority of the expense is for office personnel engaged in processing nominations, supporting canvassing and award committee activities, maintaining records, producing the annual Awards Ceremony and Dinner, and other essential functions. Other expenses include supplies, communications, and production of printed materials. As you know, each award has both a canvassing and an award committee. However, these groups transact business by mail so there are no committee travel expenses. Currently the total of administrative fees received from sponsors is somewhat less than the actual costs of administering the program, with the difference being made up from ACS funds.

The amount charged was arrived at as follows. By vote of the ACS Board of Directors, indexing of the administrative fee (then $3200) became effective for presentations beginning in 1986 under renewed agreements. The Board

adopted the policy of annual indexing in order to avoid sizable increases at the time of renewal of award agreements with sponsors. The small annual increase in the administrative fee is determined using the same Consumer Price Index ratio employed for calculating increases in ACS member dues. This has resulted in an increase of ca. 5% annually during the last five years. For award presentations made in 1992, the indexed fee is $4070, to be invoiced in the summer of 1991.

We sincerely hope that Aldrich Chemical Company will respond affirmatively to the Committee's invitation to renew sponsorship for another five years. We appreciate your support of the ACS Awards Program and hope the ACS Award for Creative Work in Synthetic Organic Chemistry merits your continued support.

A copy of Bulletin 7, "Awards Administred by ACS," is enclosed for your information, and also a copy of the program for the upcoming 1991 Awards Ceremony. Please call or write if you have any questions.

Sincerely,

John M. Malin, Ph.D.
Awards Administrator

JMM:epw

Dr. Alfred Bader
Chairman

April 5, 1991

Ms. Martha Turkes
American Chemical Society
1155 - 16th Street, N.W.
Washington, D.C. 20036

Dear Ms. Turkes:

David Bader and I look forward to being with you to discuss the project SEED on Friday afternoon, April 26th, at 3:00 p.m.

Sincerely,

Alfred Bader
AB:mmh
cc: Prof. Paul Gassman
Mr. David Bader

SIGMA-ALDRICH

P.O. Box 355, Milwaukee, Wisconsin 53201 USA, Telephone (414) 273-3850, Cable Aldrichem TWX 910-262-3052, Telex 26-843, FAX 414-273-4979

American Chemical Society

OFFICE OF THE PRESIDENT

Paul G. Gassman
President-Elect, 1989
President, 1990
Immediate Past President, 1991

Department of Chemistry
University of Minnesota
Minneapolis, MN 55455-0431
(612) 625-2345

November 21, 1990

11-26-90
ack 11/26

Dr. Alfred Bader
Chairman, Aldrich Chemical Company, Inc.
Post Office Box 355
Milwaukee, WI 53201

4/26 3pm

Martha Turckes
202 872 4387

Dear Alfred:

I have received your letter of November 12, 1990, and I have put together a package of information which should answer most of the questions which you might have. It your questions are not answered from this material, please get back to me immediately and we will arrange for whatever additional information would be helpful including a meeting in Washington if you feel that would be desirable.

Included in the information which I have provided is (a) a flyer which goes out to high schools and institutions of higher learning throughout the United States; (b) a sheet describing the administration of Project SEED; (c) a letter to chemistry researchers describing Project SEED including an application form for participation in Project SEED; (d) a copy of the 1990 program summary report; and (e) a copy of the outline of the projected SEED activities (which I had mailed to you in my earlier letter). In examining this material, you may see statements that appear to be contradictory. For instance, in the letter to chemistry researchers, it is indicated that $133,585 in stipends was distributed by Project SEED to 320 participating students. Obviously, 320 students at $1,000 each requires $320,000. The difference is that many institutions in their proposals commit matching funds (often in excess of a 1:1 match) in order to attract the SEED funding to their universities and institutions. Some industrial concerns run Project SEED activities for which they provide almost total funding. A second point relative to the funding that may seem inconsistent is associated with the statement in letter to chemical researchers that Project SEED distributed $133,585 while in the Project SEED 1990 summary report it is indicated in the executive summary that $86,556 was donated. The difference between the $86,556 which is donated and the $133,585 which was distributed represents income from endowments which the ACS has.

Of the $86,556 which was donated for the 1990 program, $41,751 was contributed by ACS members primarily at the time of their dues payments. $28,200 was contributed by the companies and foundations listed on the top of the second to the last page of the 1990 Project Summary report. $15,000 was provided by the Petroleum Research Fund and $1,605 was provided by the local sections and divisions listed.

Part of the endowment funds which provided a major contribution toward the $133,585 distributed came as initial donations to the Campaign for Chemistry. For instance, immediate Past President of the Society Clayton Callis personally contributed $50,000 toward the endowment for Project SEED. His contribution will endow five Clayton F. Callis SEED Scholars each year.

As you will remember from the outline of Project SEED activities which was sent to you with my earlier letter (copy attached) we would hope to expand the Project SEED activities in a manner which would aid exemplary Project SEED alumni from the high school program to enter into the sciences (especially chemistry) at the college level. Obviously, any donation from your foundation could be specified either for the high school or the college program. As I indicated in my earlier letter, the cost per college level participant will be considerably higher than the cost for the high school level participants.

Alfred, I really believe that the opportunity to have significant impact in this area is available through Project SEED. I hope to hear from you on this matter in the not too distant future.

With best personal wishes, I am,

Sincerely yours,

Paul

/cml
cc: Dr. Justin Collat

5/8/7

American Chemical Society

DEPARTMENT OF ACADEMIC PROGRAMS

1155 SIXTEENTH STREET, N.W.
WASHINGTON, D.C. 20036

April 19, 1991

Dr. Alfred Bader
Chairman
Sigma-Aldrich
P.O. Box 355
Milwaukee, WI 53201

Dear Dr. Bader:

Thank you for allowing me the opportunity to discuss the American Chemical Society's Project SEED program with David and yourself. Joining us will be Ms. Janet Boese, Head of the Department of Academic Programs. I look forward to meeting you and your son at 3:00 PM on Friday April 26, 1991 in Janet's office, located in Room 810 of the American Chemical Society, 1155 Sixteenth Street, NW, Washington, DC.

Sincerely,

Martha K. Turckes

Martha K. Turckes, Manager
Office of High School Chemistry

202 872
6338

FAX TO: Prof. Paul Gassman, c/o Dr. Justin Kollat
American Chemical Society

Please give this letter to Prof.Gassman when you see him on Thursday. Thank you.

Alfred Bader
April 23, 1991

Chemists Helping Chemists in Research and Industry

aldrich chemical company, inc.

Dr. Alfred Bader
Chairman

April 23, 1991

Via Fax 202 872 6206

Dr. Joseph E. Rogers, Jr., Head
Department of Research Grants and Awards
American Chemical Society
1155 - 16th Street, N.W.
Washington, D.C. 10036

Dear Dr. Rogers:

My son David Bader and I look forward to meeting Ms. Martha Turckes this coming Friday, April 26, to discuss our possible involvement with Project SEED.

You will recall that in 1986 I gave to the A.C.S. a little more than $100,000 to establish the Bader Award in Bioorganic/Inorganic Chemistry.

I would like to see how the A.C.S. has invested and used the money and what the capital is now. Could you please leave a copy of the accounting with Ms. Turckes for our meeting on Friday afternoon.

Thank you for your help.

Sincerely,

Alfred Bader
AB:mmh
cc: Prof. Paul Gassman ✓

Fax to Dr. Bader's office: 414 273 3215

P.O. Box 355, Milwaukee, Wisconsin 53201 USA, Telephone (414) 273-3850, Cable Aldrichem TWX 910-262-3052, Telex 26-843, FAX 414-273-4979

Chemists Helping Chemists in Research and Industry

aldrich chemical company, inc.

Dr. Alfred Bader
Chairman

April 23, 1991

Via Fax 202 872 6206

Dr. Joseph E. Rogers, Jr., Head
Department of Research Grants and Awards
American Chemical Society
1155 - 16th Street, N.W.
Washington, D.C. 10036

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Alfred Bader
AB:mmh
cc: Prof. Paul Gassman

Fax to Dr. Bader's office: 414 273 3215

P.O. Box 355, Milwaukee, Wisconsin 53201 USA, Telephone (414) 273-3850, Cable Aldrichem TWX 910-262-3052, Telex 26-843, FAX 414-273-4979

AIDE MEMOIRE
Meeting at A.C.S. Offices, Washington, D.C.
Friday, April 26, 1991
Prof. Paul Gassman, Ms. Janet Boese, Ms. Martha Turckes,
Mr. David Bader, Dr. Alfred Bader

The suggestion has been made that the Helen Bader Charitable Foundation consider at its next meeting in May giving $50,000 a year for a period of 3 years to Project SEED, and that Isabel and Alfred Bader will match whatever the Helen Bader Charitable Foundation gives, the total gift to be known as The Bader Family Gift.

Project SEED helps high school students from disadvantaged and preferably minority backgrounds by having these students work with a professional chemist for a period of 8--10 weeks, being paid $1,200 per period.

Up to now these Project SEED students have been supported only for one summer.

The suggestion has been made that where possible, the A.C.S. find students who have done well, both by their own appreciation and that of their mentor, and that these students be invited to come back for a second year on the same basis, with the same mentor and the same remuneration.

It is not certain that the A.C.S. can find the approximately 80 students who would be needed for the $100,000 a year to be given.

The suggestion is that the A.C.S. find as many really good students as possible, up to about 80, and that the $100,000 per year for the next three years be spent on the students that can be found. Any money left over would then be put into the Endowment Fund of the A.C.S. with the interest from that balance to be used to help Project Seed students, if practical, for second year students. In three years, both the trustees of the foundation and Isabel and Alfred Bader will review this and decide whether any contributions should be continuted.

American Chemical Society

DEPARTMENT OF ACADEMIC PROGRAMS

1155 SIXTEENTH STREET, N.W.
WASHINGTON, D.C. 20036

April 29, 1991

Dr. Alfred Bader
Chairman
Sigma-Aldrich
P.O. Box 355
Milwaukee, WI 53201

Dear Dr. Bader:

It was a pleasure meeting you and your son David, last Friday. Thank you for allowing Janet Boese and me the opportunity to discuss the American Chemical Society's Project SEED program with you. We truly believe that Project SEED is making a difference in the lives of many economically disadvantaged youth in this country. A gift from the Bader family will allow us the opportunity to expand the program so that many of these high school students will have an opportunity to experience the joys of chemical research for a second summer.

I look forward to working with you and your sons. Please do not hesitate to contact me if you have additional questions regarding the SEED program.

Sincerely,

Martha K. Turckes

Martha K. Turckes, Manager
Office of High School Chemistry

cc: Janet Boese
Paul Gassman

American Chemical Society

OFFICE OF THE PRESIDENT

Ernest L. Eliel
President-Elect, 1991
President, 1992
Immediate Past President, 1993

Department of Chemistry CB #3290
University of North Carolina
Chapel Hill, NC 27599-3290
Phone (919) 962-6198

6-3-91

May 24, 1991

Dr. Alfred Bader
Chairman
Aldrich Chemical Company, Inc.
P.O. Box 355
Milwaukee, WI 53201

Dear Alfred:

Thank you for your letter of April 29. Naturally, I am a little awed that you read my book instead of the Torah portion, but I am pleased that you enjoyed it!

I was aware that Jim Brewster was retiring; he is a very old friend and I would surely have attended his retirement party, had I not been in Europe at that time. He is a wonderful person as well as an excellent scientist, and it is a great pity that his New England Yankee exterior seems to have kept him from getting students to carry his ideas into practice. (I think that was part of his problem, later he "took refuge" into theory, though he may never have been an enthusiastic experimentalist, such as myself.)

Thanks, also, for your enclosures. Your comment on ACS overhead strikes home; I believe we are not as efficient as we should be and we are doing something about it now!

I hope that the contemplated contribution from your foundation and yourself and your wife is coming about. I was a little surprised about the question of finding eighty good students; I did not think we had excessive difficulties with that in the past.* (Of course, there is always the question: "how good is good?").

Warmest regards.

Sincerely yours,

Ernest

Ernest L. Eliel

ELE/sp

* The greater difficulty seems to be to place project SEED students - See C&E News, 5/20/91, p. 3

Dr. Alfred Bader
Chairman Emeritus

June 27, 1991

Prof. Ernest L. Eliel
Department of Chemistry CB #3290
University of North Carolina
Chapel Hill, North Carolina 27599 3290

Dear Ernest:

Thank you for your thoughtful letter of May 24th, which was forwarded to me in Europe and to which I am replying via a tape recording.

I have heard from my sons that the Helen Bader Foundation has approved the gift to Project SEED, which Isabel and I will match. The details will surely be worked out quite quickly, certainly by August.

You misunderstood my question about finding eighty good students. I do believe that you can find many more than eighty students, but the key question is whether you can find eighty students who really enjoyed what they were doing the first year and satisfied their mentors so that they would be willing to participate for a second year. I remember vividly how very much I enjoyed my first summer job in chemistry in Montreal and how absolutely delighted I was when my employer asked me to come back the next year, and to come back again for a permanent position after graduation. I am certain that I did far better work during my second year, and I believe that many of the Project SEED students will do likewise.

Fond regards,

Alfred Bader
AB:mmh
cc: Mr. David Bader
Mr. Daniel Bader

(Dictated by Dr. Bader and
signed in his absence)

SIGMA-ALDRICH

P.O. Box 355 Milwaukee Wisconsin 53201 USA Telephone (414) 273-3850 Cable Aldrichem TWX 910-262-3052 Telex 26-843

American Chemical Society

OFFICE OF THE PRESIDENT

Ernest L. Eliel
President-Elect, 1991
President, 1992
Immediate Past President, 1993

Department of Chemistry CB #3290
University of North Carolina
Chapel Hill, NC 27599-3290
Phone (919) 962-6198

6-3-91

May 24, 1991

Dr. Alfred Bader
Chairman
Aldrich Chemical Company, Inc.
P.O. Box 355
Milwaukee, WI 53201

Dear Alfred:

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Warmest regards.

Sincerely yours,

Ernest

Ernest L. Eliel

ELE/sp

* The greater difficulty seems to be to place project SEED students - see C&E News supra p 3

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Baird / A NORTHWESTERN MUTUAL COMPANY

ROBERT W. BAIRD & CO. INCORPORATED 777 EAST WISCONSIN AVENUE MILWAUKEE, WI 53202 414-765-3616

G. FREDERICK KASTEN, JR.
PRESIDENT and CEO

May 31, 1991

RSVP - NO
6-3-91

Mr. Alfred R. Bader, M.D
Aldrich Chemical
1001 W. St. Paul Avenue
Milwaukee, WI 53233

Dear Dr. Bader:

I hope you will be able to join me and several of my associates at Robert W. Baird & Co. for our traditional summer afternoon of athletics and camaraderie. This year the date is Monday, July 29th and, as usual, the event will be held at the Milwaukee Country Club.

If you should have to decline our invitation to friendly athletic competition, we sincerely hope that your schedule will permit you to join us at 6:30 p.m. for cocktails and dinner and a short awards ceremony.

Great Lakes fishing will be available again and, of course, tennis and golf are scheduled as always.

Please mark the enclosed card in accordance with your interest and note your handicap if you are a golfer.

We all look forward to seeing you and, weather permitting, expect to have a great time.

Sincerely,

Fred

G. Frederick Kasten, Jr.

Enclosure

American Chemical Society

OFFICE OF THE PRESIDENT

Ernest L. Eliel
President-Elect, 1991
President, 1992
Immediate Past President, 1993

Department of Chemistry CB #3290
University of North Carolina
Chapel Hill, NC 27599-3290
Phone (919) 962-6198
Fax (919) 962-2388

1991

Dr. Alfred Bader
Chairman Emeritus
SIGMA-ALDRICH
P.O. Box 355
Milwaukee, WI 53201

Dear Alfred:

Belated thanks for your letter from Europe dated June 27. In the meantime we have received the official notification of the grant to Project SEED and we are most grateful to the Helen Bader Foundation and to you and your wife (as well as your sons) for this extremely generous gift.

Yes -- I had indeed misunderstood the ground rules of the grant, but was enlightened by our staff even before your letter arrived. The idea of second-year grants strikes me as very felicitous -- it should serve to spur both the recipients of first-year Project SEED support and their sponsors: the former to put out their best efforts so as to earn a second internship and the latter to give the SEED students projects exciting enough to make them want to come back the following summer. Martha Turckes tells me that, to this end, all 1991 Project SEED recipients and their sponsors are being informed about the availability, in 1992, of the second-year grants.

I hope to see you (and listen to you) in New York, though my unhappily heavy committee schedule puts that somewhat in doubt.

Best regards.

Sincerely yours,

Ernest L. Eliel

ELE/sp

cc: Martha Turckes

Dr. Alfred Bader
Chairman Emeritus

July 25, 1991

Ms. Martha Turckes
Project SEED
American Chemical Society
1155 - 16th Street, N.W.
Washington, D.C. 20036

VIA FAX: 202 872 6336

Dear Ms. Turckes:

As you will have learned from Daniel Bader, the Helen Bader trusts have decided to fund Project SEED for the next three years, as described in Daniel Bader's letter to you. Isabel and I would like to match that donation.

I am quite convinced that students will benefit much more from a second year's experience with the same mentor, and hence we very much hope that you will be able to find about 80 good students whose mentors were really satisfied with them this year, and who would like to come back for a second summer. Isabel and I travel a good deal throughout the United States, and we would appreciate a list of the students who will be involved in the second year work so that we may visit them and their mentors to discuss their experience. Of course we will take a very low key approach, but we would like to learn of the problems involved.

Also, whenever you refer to these two gifts, please refer to them as gifts from the Bader Family.

Please let me know when you would like to have our first check for $50,000.

All good wishes in this important effort.

Sincerely,

Alfred Bader
AB:mmh
c: Prof. Paul Gassman
Mr. David Bader
Mr. Daniel Bader

HELEN DANIELS BADER CHARITABLE TRUSTS

Suite 3800 • 777 East Wisconsin Avenue
Milwaukee, Wisconsin 53202
(414) 289-3642

July 26, 1991

Ms. Martha Turckes, Manager
Office of High School Chemistry
American Chemical Society
1155 16th Street, N.W.
Washington, DC 20036

Dear Ms Turckes:

I apologize for the delay in this correspondence. My father has just returned from a long trip overseas, and I thought it best to wait until he came back before sending you this letter. As you are already aware, the Board of Trustees of the Helen Bader Charitable Trusts has formally approved a grant to Project SEED for the summer of 1992. The grant is a collaboration between the Helen Bader Charitable Trusts and Isabel and Alfred Bader. Each of the two parties (Helen Bader Charitable Trusts and the Baders) have committed to a grant level of $50,000 for a total of $100,000.

The grant is to be used exclusively for students who are entering the second year of Project SEED. These should be students who have done well in the first year of Project seed, and show promise of pursuing an education in chemistry. It is the understanding that the grant of $100,000 annually would provide an opportunity for about 80 students to continue in the second year of Project SEED. If it is not possible to find 80 good students, the money left over should be put in the Endowment Fund of the A.C.S. with the interest used to help second year Project SEED students.

Our current policy is to continue grants for a period of three years with the understanding that we may change or terminate the grant at any time during the three-year period. Accordingly you can expect an additional allocation in 1993 and 1994, subject to the rights of the Helen Bader Charitable Trusts to change or cancel the grant. The current grant expires at the end of 1994. During 1993, you can expect a formal evaluation of the effectiveness of Project SEED. You should be prepared for that evaluation with historical information on the effectiveness of the program.

No press release is necessary, but when you do mention this grant we would appreciate it if you would refer to it as gifts from the Bader family. If you do make a press release, please obtain our prior approval.

Please provide us with a list of students and mentors enrolled in the second year of Project SEED. Dr. Bader travels extensively and would like the opportunity to stop in and greet the professors and students on an occasional basis.

Since the grant monies are designated for the summer of 1992, payment will be made in March or April of 1992. I will contact you when we are ready to transfer funds to the A.C.S. I look forward to establishing a strong working relationship with you and your organization. If you have any questions, please feel free to call.

Sincerely,

Daniel J. Bader
Director

CAMPAIGN
FOR
CHEMISTRY

August 12, 1991

Mr. Daniel J. Bader
Director
Helen Daniels Bader Charitable Trusts
777 East Wisconsin Avenue
Suite 3800
Milwaukee, Wisconsin 53202

Dear Mr. Bader:

This is to acknowledge receipt of your family's pledge of $300,000 received in our office on August 1, 1991, to the Campaign for Chemistry. The Bader Family gift is designated for Project SEED and is to be used for students who are chosen to participate for the second year summer work experience.

Please accept this as confirmation of the Bader Family pledge which states that for the next three years the Helen Daniels Bader Charitable Trusts and Isabel and Alfred Bader have both committed to grants of $50,000 (for a total of $100,000). We acknowledge that you reserve the right to change or terminate the grant at any time during the three-year period. Reminders for payments will be sent to the Helen Daniels Bader Charitable Trusts in February each year unless you specify a different reminder schedule.

On behalf of the Campaign Office, I would like to thank you, the trustees of the Helen Daniels Bader Charitable Trusts, and the Bader Family very much for your generous support and participation in the American Chemical Society's Project SEED program.

Sincerely,

Jennifer H. D'Elia

Jennifer H. D'Elia
Director of Development

cc: Dr. and Mrs. Alfred Bader
Ms. Martha Turckes
bcc: Dr. Paul Gassman

American Chemical Society

DEPARTMENT OF ACADEMIC PROGRAMS

1155 SIXTEENTH STREET, N.W.
WASHINGTON, D.C. 20036

August 20, 1991

Dr. Alfred Bader
Chairman Emeritus
Sigma-Aldrich
P.O. Box 355
Milwaukee, Wisconsin 53201

Dear Dr. Bader:

It was nice to see you last week in Oshkosh at the ChemEd '91 conference! I hope you enjoyed the presentation on Project SEED. All of us at the American Chemical Society are delighted that the Bader family has chosen to fund a second year Project SEED program for the next three years. On behalf of the American Chemical Society and the students who will benefit, thank you again.

The Committee on Project SEED has already alerted this summer's participants of this new program to be implemented in 1992. As you may imagine, this has been received with much excitement. Many of our mentors over the years have urged the Society to start such a program, and the generosity of the Bader family is now making this possible. I will make sure that you receive a list of students who are chosen to participate for a second summer in Project SEED.

The Committee on Project SEED is very happy that you wish to visit the students and mentors. Site visits are always beneficial to a program such as this. Unfortunately, we have never had the resources to make site visits. We are very pleased that you and your wife, Isabel, wish to visit the students and mentors, and we hope that you will be willing to share your findings with us. This will benefit all of us. You will see first hand the program at work, the mentors and students will be most honored to be able to meet a successful and eminent chemist, and we will gain a new perspective through your comments on your visits.

According to the letter from your son, Daniel, the Helen Bader Charitable Trusts will make the first payment to the Society in March or April of 1992. You may wish to make your payment at the same time. However, we would be most appreciative of receiving your grant of $50,000 sooner if possible with the understanding that the interest earned would be used in one of the following two ways:

1) to support additional qualified second year Project SEED students
2) to be deposited in the newly established Project SEED Summer II Endowment to begin a designated corpus to be tracked; the interest of which would be used to support second year students.

Please accept my personal appreciation for your family's generosity to the Society and the Project SEED program. I look forward to working with your family over the coming years.

Sincerely,

Martha K. Turckes, Manager
Office of High School Chemistry

cc: Mr. Daniel Bader
Prof. Paul Gassman
Dr. Edwin Harper
Dr. Donald Jones

American Chemical Society

DEPARTMENT OF ACADEMIC PROGRAMS

1155 SIXTEENTH STREET, N.W.
WASHINGTON, D.C. 20036

August 16, 1991

Mr. Daniel J. Bader
Director
Helen Bader Charitable Trust
777 East Wisconsin Avenue
Suite 3800
Milwaukee, Wisconsin 53202

Dear Mr. Bader:

Please accept my sincere thanks on behalf of the American Chemical Society and the Committee on Project SEED for your family's generous donation designated to support second year students participating in the Project SEED program. The commitment of the Helen Bader Charitable Trust of $50,000 per year for up to three years along with the equivalent pledge from Alfred and Isabel Bader will be used for students who are chosen to participate in Project SEED for a second summer.

We are so pleased and excited with the level at which your family wishes to be involved in the program. Dr. Bader's intended site visits will be very beneficial and we will certainly provide both of you with a list of second year Project SEED students after they are chosen. We will also be happy to assist you in any way we can with the Trusts' formal evaluation when the time comes.

Thank you again for the Bader Family's grant. We are certainly fortunate to have your enthusiastic support and participation.

Sincerely,

Martha K. Turckes

Martha K. Turckes, Manager
Office of High School Chemistry

cc: Dr. Alfred Bader
Prof. Paul Gassman
Dr. Edwin Harper
Dr. Donald Jones

American Chemical Society

DEPARTMENT OF ACADEMIC PROGRAMS

1155 SIXTEENTH STREET, N.W.
WASHINGTON, D.C. 20036

August 21, 1991

Dr. Alfred Bader, Chairman
Sigma-Aldrich
P.O. Box 355
Milwaukee, WI 53201

Dear Dr. Bader,

Please find enclosed a recent article that appeared in Chemical and Engineering News, August 19, 1991 which highlighted grant-supported programs of the ACS Education Division. The programs aimed at student levels ranging from elementary school to college address areas of curriculum, teacher preparation, and increasing student awareness and interest in chemistry and chemically-related sciences. The grant monies serve as one of three major sources of funding for ACS education programs with approximately $1.7 million of the over $7 million Education budget coming from these grants.

The programs, which encourage young people in the areas of science and particularly chemistry, are discussed on page 76 of the article. A statement regarding your family's generous gift to support a Summer II initiative for Project SEED students for three years is included. It is gratifying to realize that all 142,000 ACS members are now aware of your family's commitment to Project SEED students and to future generations of scientists. However, I must apologize for the mistake in the text that referred to this donation as a gift from the Alfred Bader family rather than as gifts from the Bader Family. I assure you that all future communications will name the Bader Family as the source of funding for the Summer II initiative.

Thank you again for support of this important and worthwhile program. Please feel free to contact me at 202-872-4382 if you have any questions.

Sincerely,

Martha K. Turckes

Martha Turckes, Manager
Office of High School Chemistry

Enclosure

Outside Grants Give Major Boost To ACS Education Programs

Campaign for Chemistry, NSF among funding sources for academic programs that range from elementary school to college level

Ernest L. Carpenter, C&EN Washington

Several American Chemical Society education programs have received boosts recently, and in some cases have been initiated, because of grants from the National Science Foundation; ACS's recent fund-raising effort, the Campaign for Chemistry; and others. These education programs aim at student levels ranging from elementary school to college.

Grants are one of three major sources of funding for ACS education programs; the other two sources are the ACS dues pool and revenues from self-sustaining programs such as short courses and audio courses. Funding from all three sources in 1991 will total a little more than $7 million, of which $1.7 million will come from various grants. In comparison, about $1.5 million will come from the ACS dues pool.

According to ACS education division director Sylvia A. Ware, the society's education programs over the past decade have received about $6.3 million in grants (excluding funds from the Campaign for Chemistry), of which $3.8 million came from NSF. Despite this large influx of support, she notes, most of the staff effort is supported from the dues pool.

All grants proposed by ACS staff members for funding ACS programs are first reviewed and approved by the Society Committee on Education, chaired by Glenn A. Crosby, professor of chemistry at Washington State University, Pullman, before they are submitted to the funding agency.

Much of the grant-induced activity in ACS education programs involves the society's innovative high school chemistry course, Chemistry in the Community (ChemCom), and related programs. ChemCom takes a nontraditional approach to teaching chemistry, being issue- instead of content-oriented, and uses group discussions, team work, and labs in place of traditional lectures. ACS developed ChemCom through funding by NSF totaling nearly $1 million.

This month and last, ACS has held eight five-day ChemCom teacher training summer workshops to prepare 180 or so teachers who plan to teach ChemCom during the 1991–92 academic year. From 1988 to 1990, similar workshops were funded by an NSF grant of $551,000. This year for the first time the workshops have been funded solely by the Campaign for Chemistry, at $255,000.

The workshops enable teachers to become familiar with the philosophy, goals, rationale, teaching and learning strategies, course content, classroom management models, and specific instructional activities that comprise the ChemCom curriculum. They also allow teachers to share information and ideas with other ChemCom teachers.

"Teacher training is a must in this sort of science curriculum," Ware says, "for reassuring teachers that this is an intellectually respectable way of teaching chemistry."

ChemCom is being used in all 50 states, and currently has about 18% of the high school chemistry text market, says ACS staff associate K. Michael Shea, who coordinates ChemCom activities. He projects the text will be in 40% of the market within five years. "By now," Ware adds, "ACS estimates that approximately a quarter of a million students have taken chemistry the ChemCom way."

Another aid in teaching the ChemCom course is a newly introduced standardized ChemCom exam. The exam has been under development for the past three years by a committee of high school and college teachers who have been active in ChemCom teacher training activities. The committee was chaired by Lucy Pryde, professor of chemistry at Southwestern College in Chula Vista, Calif. Also instrumental in developing the exam was I. Dwaine Eubanks, professor of chemistry at Oklahoma State University, Stillwater, and director of the ACS Division of Chemical Education Examinations Institute, which publishes the ChemCom exam as well as a number of other standard chemistry tests for the high school and college levels.

The ChemCom test, according to Pryde and Eubanks, is as unusual as the curriculum from which it was developed. It incorporates novel test item formats, such as multiple-response options, linked event-decision style questions, and grid questions, which permit measurement of student achievement that is difficult to assess with single-answer, multiple-choice items. The test is designed to be administered over two class periods at the end of the course.

Meantime, the second edition of ChemCom is being prepared for introduction next spring. Funded by the publisher, Kendall/Hunt Publishing Co., and royalty payments from sales of the first edition, the new version will contain updated text and color photographs. The second edition also will include more career information, especially on nontraditional careers that apply chemistry.

In related activities, ACS is overseeing preparation of a college text and course similar to ChemCom in philosophy, called "Chemistry in Context: Applying Chemistry to Society," with funding of almost $500,000 from the Campaign for Chemistry. According to Terri L. Nally, manager of ACS's office of college chemistry, the course differs from the high school course in that it is aimed at a more sophisticated audience, both in terms of scientific content and societal context. Directed essentially to nonscience majors in their freshman or sophomore years, the course is scheduled for field-testing this fall at 14 universities.

Also under development by ACS and funded with a three-year $950,000 grant from NSF is a sort of "junior ChemCom" course for grades seven and eight. Called FACETS (Foundation and Challenges to Encourage Technology-based Science), the course will attempt to integrate the science curriculum for those grades to include chemistry, biology, physics, and Earth sciences, but in more of a societal context than is currently taught.

A content and design committee has already agreed on topics to be discussed in various modules and the way in which the curricula will deal with those topics. Ann E. Benbow, staff coordinator for the pre-high school science office and one of the principal developers of FACETS, says emphasis will be placed on problem-solving strategies. If the current schedule is maintained, FACETS will be field-tested in 1992 and ready for full-scale availability in 1994. Society Committee on Education chairman Crosby is also chairman of the FACETS National Advisory Board.

Another ACS pre-high school education project gaining momentum is Operation Chemistry. This program aims to provide training in chemistry content and teaching methods for upper elementary and middle school teachers by using regional teams of teacher educators. The program has been funded by a $322,000 grant from NSF. A similar project, called Operation Physics, funded by NSF at the American Institute of Physics (AIP), was the inspiration for Operation Chemistry: The ACS project is modeled closely after that of AIP.

Under way since 1989, Operation Chemistry involves developing and field-testing 12 workshop books for eventual use by regional teams. The writing of the workbooks has been coordinated by Paul B. Kelter of the science outreach office at the University of Wisconsin, Oshkosh. An evaluation of Operation Physics' effects on students in the classroom is being conducted through the ACS office of pre-high school science.

Other ACS education programs benefiting from grant money include the chemistry olympiad, Project SEED (Summer Educational Experience for the Disadvantaged), and some minority-related pro-

grams. The International Chemistry Olympiad is a set of exams and lab exercises aimed at identifying the best high school chemistry students from around the world. Each year participating countries send four contestants and two coaches to the host country for seven to 10 days of chemistry competition, sports, tours, and lectures.

This year's 23rd International Chemistry Olympiad was held last month in Lodz, Poland (C&EN, July 22, page 6). The U.S. team placed fifth among 31 delegations, best among western nations competing. The olympiad program received support in its selection of a U.S. team in the form of initial testing and screening administered by ACS local sections and donation of facilities and equipment by the Air Force Academy in Colorado Springs for the two-week olympiad training camp. Overall funding of about $90,000 for both the U.S. olympiad and the team's involvement in the international olympiad came about equally from two sources—the ACS dues pool and the Campaign for Chemistry.

The ACS education division staff is now gearing up to host next year's international olympiad, which will be held in two U.S. cities—Pittsburgh and Washington, D.C. The lab exercises and exams will be held in Pittsburgh, and the award presentations and official celebrations will be in Washington. This event will be funded, at about $800,000, completely from the Campaign for Chemistry.

Project SEED, often described as the society's career education and social action program, helps expand the career outlook for high school students from families defined as economically disadvantaged by federal poverty guidelines. Students in the program work in research labs for eight to 10 weeks during the summer under the supervision of research scientists (preceptors). This summer some 300 students have participated in Project SEED; each has received a $1200 stipend.

One of the few national programs that supports chemical research by high school students, Project SEED is funded by donations from ACS members, divisions, and local sections, as well as through grants from industry, foundations, the Petroleum Research Fund, NSF, and the Department of Energy. For 1991 those donations have totaled $228,000, with Campaign for Chemistry and local matching funds making up the necessary balance. As part of funds received from the Campaign for Chemistry, ACS has sought to establish a Project SEED endowment of $2.5 million or more. Although still short of the endowment goal, at about $1.6 million, ACS is attempting to expand the Project SEED program and is seeking preceptors to volunteer their time and facilities to coordinate the research for SEED students.

Further boosting Project SEED, ACS has recently received a gift from the Alfred Bader family of $100,000 in each of the next three years for a SEED program that would allow students to participate a second year. Plans call for about 80 students each year, who have successfully completed Project SEED research, to return to the same preceptor lab for a second summer of the program.

ACS has received grants for other, mostly minority-oriented programs. For instance, since 1985 the education division's office of college chemistry has worked with grants from the Department of Education totaling $165,000 for Minority Science Improvement Programs (MSIP). These grants have helped fund the society's College Chemistry Consultants Service, a joint program of the ACS Society Committee on Education and the ACS Division of Chemical Education Inc. The program provides high-quality, low-cost consulting visits to chemistry departments at MSIP institutions—historically or predominantly minority colleges and universities. These grants funded nearly 80 consultant visits to MSIP schools.

Among the objectives of the consultant program are to enable MSIP institutions to prepare long-range plans for encouraging more precollege minority students to embark on career training in science and technology; to enhance the institutions' undergraduate chemistry programs; and to improve the institutions' research capabilities in an effort to improve their ability to attract more research grants.

ACS's numerous projects in this area have been so successful that last year the Department of Education recognized the society's MSIP grant activity as one of its exemplary MSIP projects. Earlier this year, ACS received an additional $112,000 grant from the department for the consultants service for 1991–93, including funding for consultant visits to 35 MSIP schools.

Among the earlier MSIP projects, funded by an add-on grant of $15,000 from the Department of Education in 1988, was development of a videotape to promote careers in science and technology, primarily among blacks enrolled in junior and senior high schools. Released in April 1990, the videotape was a unique collaboration of ACS, the federal government, and SmithKline Beecham. Six hundred copies of the tape, titled "Working It Out: An ACS Career Video," were sent free to all MSIP schools, each of which was encouraged to duplicate the tape for secondary schools in their areas.

The video runs for 10 minutes and features discussions with high school students, college students, and professionals new to the workplace. Its overriding message is that science careers offer numerous opportunities for minorities.

According to Nally, the videotape has been quite successful, with hundreds of requests for the tape, even from non-MSIP schools—and without benefit of any publicity. She says the office has just published a printed teacher's guide to complement the videotape. Copies of the tape and guide may be purchased for $10 each by writing the ACS Office of College Chemistry, 1155—16th St.; N.W., Washington, D.C. 20036.

In a separate but related project, ACS has prepared another videotape for black students in middle and high schools. Funded in part by the Campaign for Chemistry as part of the education division's outreach and museum programs, the videotape, titled "Tracing the Path," is designed to show the contributions of blacks to chemistry in the life sciences. A followup videotape on chemistry in inventions is also in the early stages of preparation. □

Dr. Alfred Bader
Chairman Emeritus

September 3, 1991

Miss Martha K. Turckes, Manager
Office of High School Chemistry
American Chemical Society
1155 - 16th Street, N.W.
Washington, D.C. 20036

By fax
202 872 6336

Dear Miss Turckes:

Thank you for your letters of August 20 and 21.

I enjoyed listening to your excellent talk in Oshkosh, although of course, I was disappointed that only three high school teachers came to listen.

Thank you also for sending me copy of Ernest Carpenter's article in C&E News. Please do remember Daniel Bader's request that the gift should be referred to as coming from the Bader Family, rather than the Alfred Bader Family.

I plan to send you my first check for $50,000 early next year.

All good wishes.

Sincerely,

Alfred Bader
AB:mmh

P.S. Thanks also for your fax of Aug. 30 which I just discussed with Daniel and Isabel. We all agreed that the new terms — $1500 each for 60 students are fine. Please contact both Daniel & me in the future. Best wishes

SIGMA-ALDRICH
P.O. Box 355 Milwaukee Wisconsin 53201 USA Telephone (414) 273-3850 Cable Aldrichem TWX 910-262-3052 Telex 26-843

cc Daniel Bader

American Chemical Society

DEPARTMENT OF ACADEMIC PROGRAMS

[illegible]

August 30, 1991

Dr. Alfred Bader
[illegible] Emeritus
Sigma-Aldrich
P.O. Box [illegible]
[illegible]

Dear Dr. [illegible]:

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]
Council Committee on Project [illegible]

Enclosure

cc: Daniel Bader
Janet [illegible]
Edwin Harper
Don Jones

PROJECT SEED INITIATES NEW PROGRAM

The Committee on Project SEED is pleased to announce the initiation of a Project SEED Summer II program. Project SEED, often described as the Society's career education and social action program, helps expand the career outlook for high school students from families defined as economically disadvantaged by federal poverty guidelines. Students in the program work in research labs for eight-to-ten weeks during the summer under the supervision of preceptor scientists (preceptors). This summer some 300 students representing over 30 states and Puerto Rico have participated at about 100 institutions. Each student received a $1300 educational award.

The Summer II program is designed to provide former Project SEED students with a second summer of scientific research. The students must be enrolled in high school or be a recent high school graduate [illegible] matriculated in college [illegible] eligible. The educational award for this eight-to-ten week research experience is $1500. Additionally, students will be eligible to receive up to [illegible] to travel to an ACS or other scientific meeting to present their research findings.

Funding for this program has been provided by a generous donation from the [illegible]. [illegible] summer of Project SEED. The program will provide approximately [illegible] students the opportunity to pursue their interest in research for an additional summer. The Committee on Project SEED would like to thank [illegible] for their generous grant [illegible] Summer II program. This experience will help students focus their career goals and provide them with greater exposure to the scientific community.

For more information, [illegible] Project SEED [illegible] and preceptors should contact [illegible] at the Project SEED office at [illegible].

FAX COVER SHEET

American Chemical Society
Legislative Division
1155 16th St., NW
Washington, DC 20036

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LETTERS

Universal symbol for chemicals

In conjunction with efforts in planning a chemical-related workshop, the workshop committee couldn't find an acceptable symbol for chemicals that could be used in a workshop logo. It became uncomfortably clear to us that there was not a universally recognized symbol for chemicals. This is quite startling in as much as the nine-member committee, consisting of professional chemists, was unable to identify such a symbol.

In view of the number of practicing chemists and the importance and common place of chemicals in our everyday life, I've concluded there is a need for a universally recognized chemical symbol. I wonder if other ACS members have been confronted with this issue, and if it isn't an issue of sufficient importance and breadth that ACS should look into the matter further and possibly try to develop a chemical symbol that would become recognized and/or associated with chemicals by one and all.

John L. Cox
Staff Scientist, Chemical Process Development Section
Battelle Pacific Northwest Labs
Richland, Wash.

Project SEED

The letters responding to my Comment (C&EN, March 28, page 65) are greatly appreciated. Keith Symcox (C&EN, May 20, page 3) wondered if his difficulties in recruiting busy university faculty members to provide research opportunities for his high-ability students from low-income families are unique to metropolitan Oklahoma City. I can assure him that he is not alone.

Managing a high school student in a laboratory research project is not trivial. Even though Project SEED students are required to have completed a high school chemistry course so that they have at least minimal competence in the handling of chemicals, a successful project must be extremely focused and the preceptor must be prepared to help the student leapfrog to a conceptual grasp of its goal. Not everyone has the organizational and teaching ability required, and not all who do also have a strong desire to help young people from less fortunate circumstances. We hope that ACS members with the interest and ability to motivate these deserving high school students will respond in increasing numbers as the number of children living in poverty continues to grow.

Don Kennedy (C&EN, May 20, page 41) is among those for whom I did not make a couple of points sufficiently clear. First, when Erich Bloch compared Project SEED to a drop in the bucket, he was not referring to its financial support. Project SEED draws funds from many sources: donations from members, corporations, universities, ACS local sections and divisions, as well as federal funds from the National Science Foundation, the Department of Energy, and the Department of Labor. Kennedy raises the important point that programs that request funds must be accountable, and Project SEED enjoys a solid reputation as being exceptionally cost-effective [*Science*, **231**, 1053, (1986)].

Second, Project SEED is not a minority-focused program, although approximately half of all SEED students come from minority groups that are underrepresented in the scientific work force. However, since the science training pipeline contains relatively few children from families living in poverty, Project SEED's entire target population can be correctly seen as an underrepresented group in science.

Kennedy and other ACS members are the owners of Project SEED. It is important that members' pride of ownership of this worthwhile program continues to be expressed in terms of their support and participation as preceptors or contributors.

Edwin T. Harper
Indiana University School of Medicine
Indianapolis

Dangerous use of nylon resin

A rack for transporting lumber along the side of an automobile is pictured in your article on plastics (C&EN, June 10, page 39). This rack, which appears to project

Correction

• July 22, page 3: In the letter on boric acid, the Encyclopaedia Britannica reference should be 14th edition, not 4th edition.

grams. The International Chemistry Olympiad is a set of exams and lab exercises aimed at identifying the best high school chemistry students from around the world. Each year participating countries send four contestants and two coaches to the host country for seven to 10 days of chemistry competition, sports, tours, and lectures.

This year's 23rd International Chemistry Olympiad was held last month in Lodz, Poland (C&EN, July 22, page 6). The U.S. team placed fifth among 31 delegations, best among western nations competing. The olympiad program received support in its selection of a U.S. team in the form of initial testing and screening administered by ACS local sections and donation of facilities and equipment by the Air Force Academy in Colorado Springs for the two-week olympiad training camp. Overall funding of about $90,000 for both the U.S. olympiad and the team's involvement in the international olympiad came about equally from two sources—the ACS dues pool and the Campaign for Chemistry.

The ACS education division staff is now gearing up to host next year's international olympiad, which will be held in two U.S. cities—Pittsburgh and Washington, D.C. The lab exercises and exams will be held in Pittsburgh, and the award presentations and official celebrations will be in Washington. This event will be funded, at about $800,000, completely from the Campaign for Chemistry.

Project SEED, often described as the society's career education and social action program, helps expand the career outlook for high school students from families defined as economically disadvantaged by federal poverty guidelines. Students in the program work in research labs for eight to 10 weeks during the summer under the supervision of research scientists (preceptors). This summer some 300 students have participated in Project SEED; each has received a $1200 stipend.

One of the few national programs that supports chemical research by high school students, Project SEED is funded by donations from ACS members, divisions, and local sections, as well as through grants from industry, foundations, the Petroleum Research Fund, NSF, and the Department of Energy. For 1991 those donations have totaled $228,000, with Campaign for Chemistry and local matching funds making up the necessary balance. As part of funds received from the Campaign for Chemistry, ACS has sought to establish a Project SEED endowment of $2.5 million or more. Although still short of the endowment goal, at about $1.6 million, ACS is attempting to expand the Project SEED program and is seeking preceptors to volunteer their time and facilities to coordinate the research for SEED students.

Further boosting Project SEED, ACS has recently received a gift from the Alfred Bader family of $100,000 in each of the next three years for a SEED program that would allow students to participate a second year. Plans call for about 80 students each year, who have successfully completed Project SEED research, to return to the same preceptor lab for a second summer of the program.

ACS has received grants for other, mostly minority-oriented programs. For instance, since 1985 the education division's office of college chemistry has worked with grants from the Department of Education totaling $165,000 for Minority Science Improvement Programs (MSIP). These grants have helped fund the society's College Chemistry Consultants Service, a joint program of the ACS Society Committee on Education and the ACS Division of Chemical Education Inc. The program provides high-quality, low-cost consulting visits to chemistry departments at MSIP institutions—historically or predominantly minority colleges and universities. These grants funded nearly 80 consultant visits to MSIP schools.

Among the objectives of the consultant program are to enable MSIP institutions to prepare long-range plans for encouraging more precollege minority students to embark on career training in science and technology; to enhance the institutions' undergraduate chemistry programs; and to improve the institutions' research capabilities in an effort to improve their ability to attract more research grants.

American Chemical Society

Edwin T. Harper, *Chair*

COMMITTEE ON PROJECT SEED
1155 16th Street, N.W., Washington, D.C. 20036
Staff Liaison (202) 872-4380

Department of Biochemistry and Molecular Biology
Indiana University School of Medicine
635 Barnhill Drive
Indianapolis, IN 46202-5122

September 12, 1991

Dr. Alfred Bader
Chairman Emeritus
Sigma-Aldrich
P. O. Box 355
Milwaukee, WI 53201

Dear Dr. Bader:

It was a pleasure to see you again at the New York meeting. There wasn't time, in the crush of the Campaign reception, for much discussion, so I am writing to tell you how important I believe your family's contributions are for the future effectiveness of Project SEED.

The strength of the SEED program is its use of the research experience to excite young people about science, and the research model has now been adopted by many other programs working with high school students. But this works best when students can get the thrill of ownership that comes with the publication of research, and this is an understandably rare outcome among high school students.

By providing these students a second summer experience, and by setting the goal of publication as an expected outcome for a successful summer, I think we will greatly increase the probability that they will be able to accomplish enough to make a significant contribution to a project. In addition, we should be able to document this effect, because we will have a built-in comparison between the first- and second-summer students.

I appreciated your remarks about the need to help the teachers get plugged into this process. We have started an experiment with 35 teachers in the Southeast who have worked with Glenn Crosby's Operation Progress program for the last two years. I would be happy to discuss this aspect of the program further with you.

Again, on behalf of the Project SEED Committee, thank you for your generous support.

Sincerely,

Edwin T. Harper

Edwin T. Harper

cc: Paul Gassman
Martha Turckes

Dr. Alfred Bader
Chairman Emeritus

To Prof Solomon
215 895 1265

October 16, 1991

Ms. Martha Turckes, Manager
Office of High School Chemistry
American Chemical Society
1155 - 16th Street, N.W.
Washington, D.C. 20036

Dear Ms. Turckes:

As you will be able to imagine, I talked to quite a few people about Project SEED, and of course, plan to let you know of constructive suggestions.

Last week Friday, Isabel and I talked to a very able and enthusiastic professor at Drexel University, Dr. Sally Solomon. She is very involved in how best to teach chemistry to high school students, and I found one of her articles in the Journal of Chemical Education, April of this year (copy enclosed), very instructive.

Of course, I asked her whether she had ever had any Project SEED students, and she told me that she had tried but that her requests were denied.

You will note that one of the authors of the enclosed paper, Alan Lee, is a high school student, and it seems to me that a good many students like him might really develop not just liking, but enthusiasm for chemistry, if they had a chance to work with Dr. Solomon.

Best personal regards.

Sincerely,

Alfred Bader
AB:mmh
Enclosure

Fax to Dr. Bader's Office:
1-414-273-3215

10/15/91

Drexel University
100
1891 - 1991

College of Arts & Sciences
Department of Chemistry

Dr. Alfred Bader
Sigma-Aldrich
P.O. Box 355
Milwaukee, WI 53201

12/9/91

Dear Dr. Bader;

Thank you for your efforts in making SEED grants available to people like myself whose primary scholarly activity is in the area of chemical education. I am looking forward to making an application to Project SEED for next summer.

I have a second reason for writing to you. I am organizing the annual spring weekend meeting of the Pennsylvania Association of College Chemistry Teachers (PACCT) to be held here at Drexel . On behalf of PACCT I would like to invite you to be our keynote speaker on Friday evening, March 27th. Please let me know if this is possible.

It would be a privilege for our membership to meet you and a wonderful opportunity to see you and Isabel again.

Sincerely,

Sally Solomon

Sally Solomon

32nd & Chestnut Streets ★ Philadelphia, Pennsylvania 19104 ★ (215) 895-2638, 2639

Dr. Alfred Bader
2961 North Shepard Avenue
Milwaukee, Wisconsin 53211

October 28, 1992

Ms. Martha Turckes, Manager
Office of High School Chemistry
American Chemical Society
1155 - 16th Street, N.W.
Washington, D.C. 20036

Dear Ms. Turckes:

I note from page 55 of the October 19th issue of the C & E News that about 50 students participated in the Summer II Program.

Do you believe that this was a success and that more students will participate next summer?

Also, will the funds left over from our first year's $100,000 donation be carried over to the Summer II Program in the years to come?

I much look forward to hearing from you.

Best regards,

Enclosure
c: Mr. Daniel Bader
(w/enclosure)

1992 Project SEED — Summer I Institutions, Coordinators, and Preceptors

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Arizona State University , Antonio A. Garcia
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Cooper Union for the Advancement of Science, Arsete Lucchesi
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Wright State University , Daniel Ketcha
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1992 Project SEED — Summer II Institutions, Coordinators, and Preceptors

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Cooper Union for the Advancement of Science, Arsete Lucchesi, John Bove, Rebecca LaRue, Zikre Ahmad
DayChem Laboratories, Pamela King
Dayton Water Supply and Treatment, Martha Schwendeman
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East Carolina University, Nina E. Blount, William Church
Environmental & Occupational Health Science Institute, Victoria Leyton
Florida International University, Zaida Morales-Martinez, Kenneth G. Furton, J. M. E. Quirke
Hackensack Meadowlands Development Comm. Christine Cheng Hobble
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Indiana Section, ACS, Rosie Bonjouklian, Manoocher Soleimani, Marion Hodes, Asok Antony
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University of California, Irvine, Mare Taagepera, Fillmore Freeman, Eloy Rodriguez
University of Dayton, Sanford S. Singer
University of Maine, Mitchell R. M. Bruce, Michael D. Bentley, Alice Bruce
University of Nevada, Reno, W. Berry Lyons
University of San Diego, Patricia M. Shaffer

influence them to pursue scientific career choices.

Students in both Summer I and II programs (typically more than 60% from minority groups, 50% female) work and earn educational awards in research labs for eight to ten weeks. One of the few national programs that support high school students conducting chemical research, Project SEED is financially supported through donations from ACS members, ACS local sections, and grants from industry, corporations, foundations, the ACS Petroleum Research Fund.

The Committee on Project SEED would like to thank the more than 100 Summer I and Summer II preceptors (see pages 7 and 8) who volunteered their time, effort, and laboratories to these deserving high school students. It is the dedication and commitment of these research scientists that makes the Project SEED program a reality. The continued dedication of the SEED preceptors has also made Project SEED a model program in the sciences.

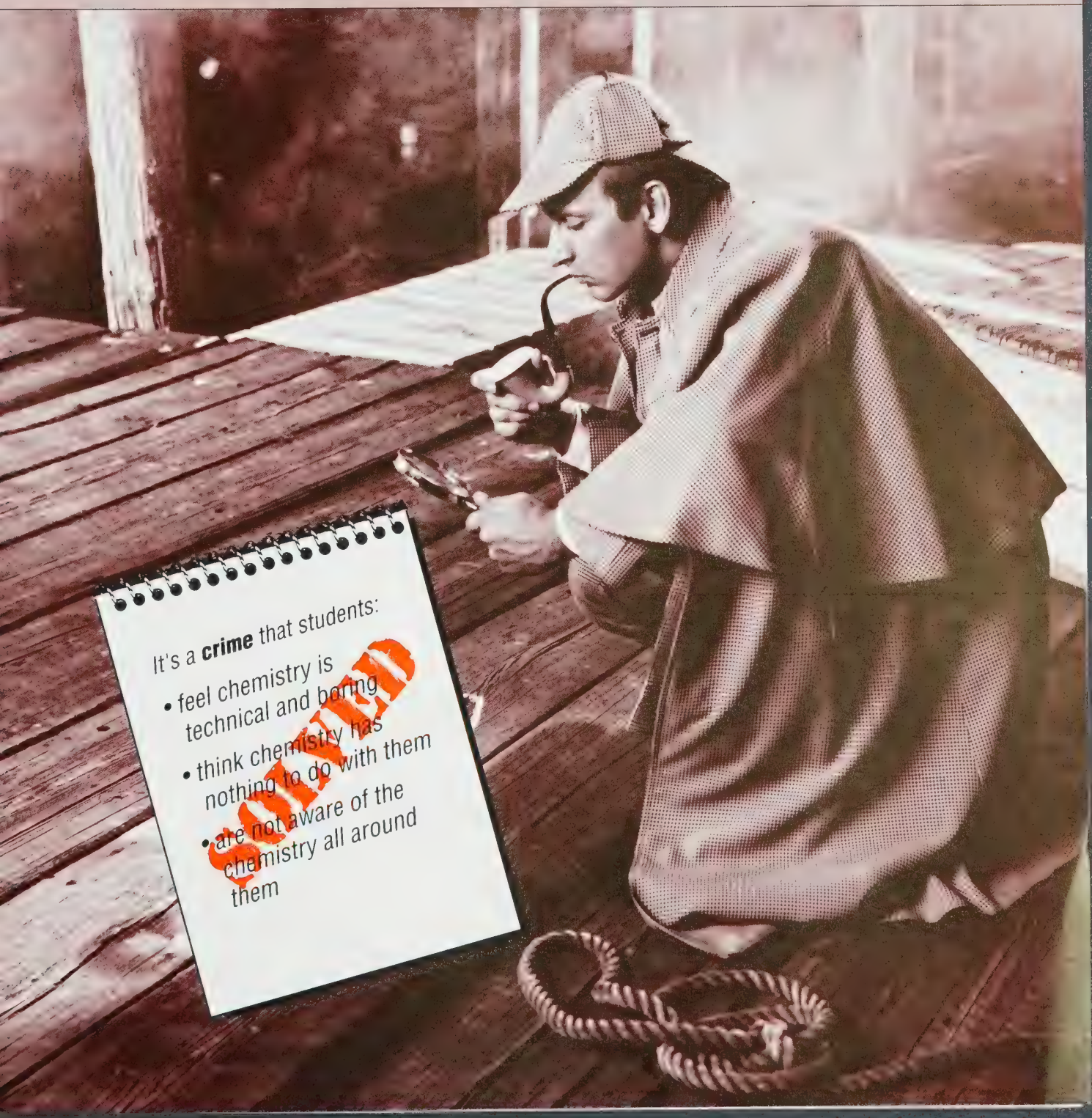
1993 Project SEED Applications Sought!

Project SEED (see story, page 8) is seeking preceptors to volunteer their time and facilities to coordinate the research of some very deserving high school students. Preceptors monitor a high school student's research during the eight- to ten-week summer experience in their laboratories. Previous preceptors identify SEED's positive aspects in terms of developing an understanding of young people from diverse cultural backgrounds and perhaps inspiring a young student to pursue a scientific career.

Information and application forms for the Project SEED Summer I and II programs may be obtained by writing to ACS, Project SEED program, 1155 Sixteenth Street, NW, Washington, DC 20036 or by calling 202-872-4380. Applications, which are easy to fill out, are due no later than February 12, 1993.

SEARCHING FOR SOLUTIONS?

Is Making Chemistry Relevant A Mystery?
Clue Your Students Into Chemistry With ***ChemMatters*** *Magazine!*



PRESENTING THE EVIDENCE...

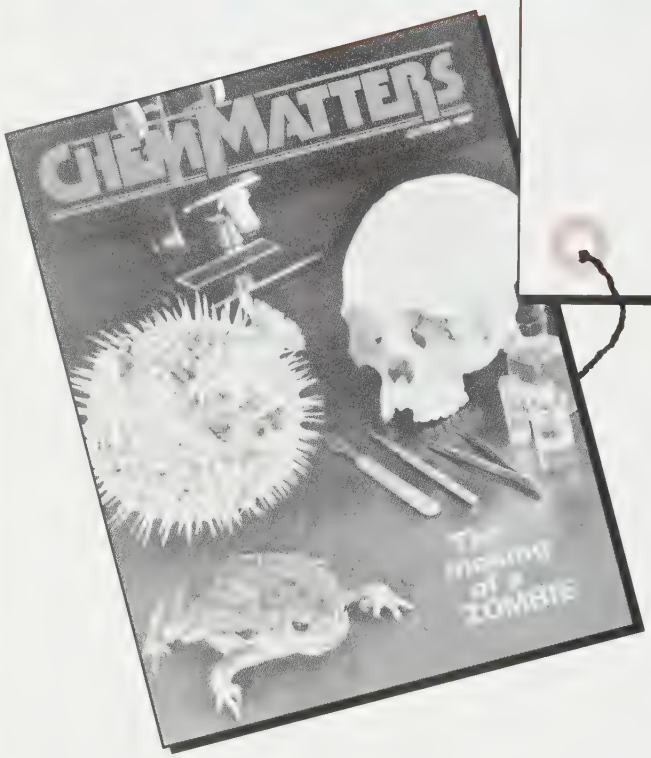
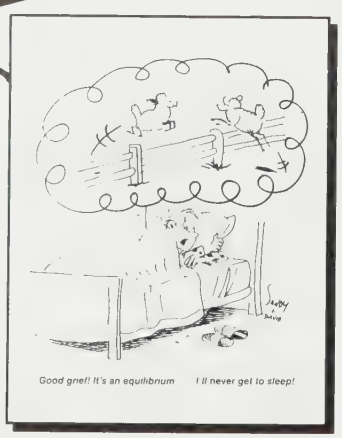


Exhibit A:
Stimulating and Relevant Feature Articles
- *Making of a Zombie*
- *Distance Running*
- *Lipstick Chemistry*
- *Dyeing for Blue Jeans*

Exhibit B:
Challenging Puzzles and Games
- Crossword Puzzles
- Riddles
- Rebuses
- Pictograms
- Word Searches

Exhibit C:
Clever and Topical Cartoons



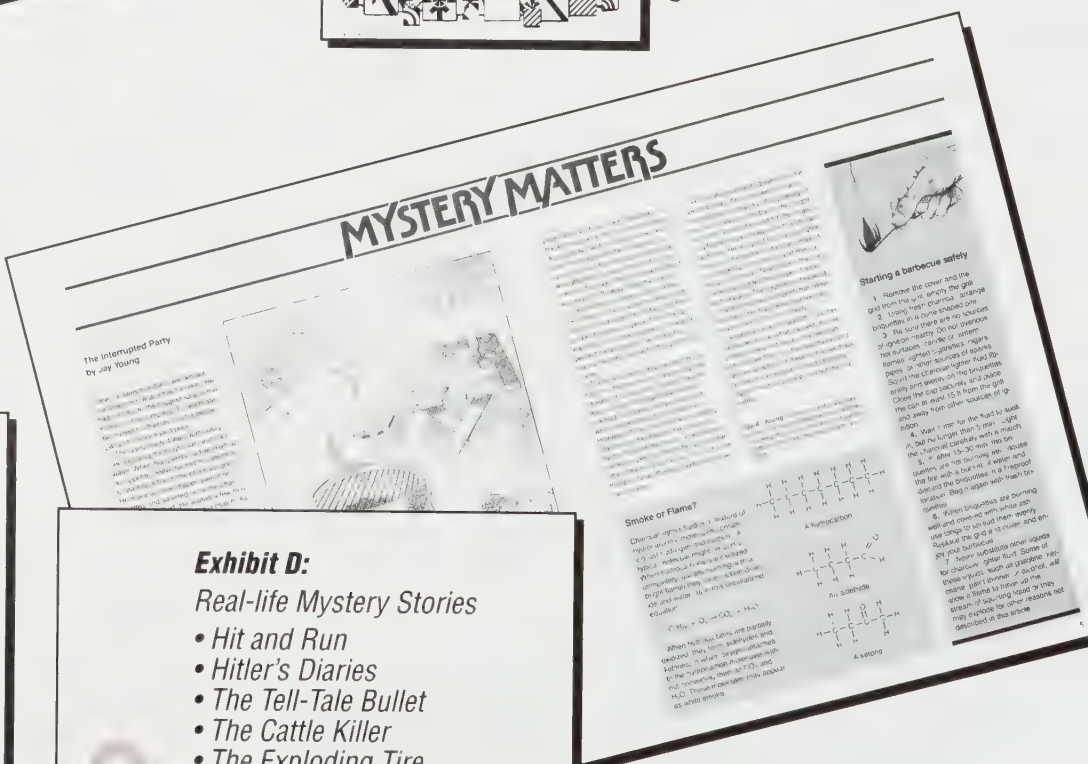


Exhibit D:
Real-life Mystery Stories
- *Hit and Run*
- *Hitler's Diaries*
- *The Tell-Tale Bullet*
- *The Cattle Killer*
- *The Exploding Tire*

It's elementary, Watson:
ChemMatters *magazine is the solution!*

Four issues yearly of this award-winning high school students' magazine—complete with teachers' Classroom Guide—will turn students on to the exciting world of chemistry.

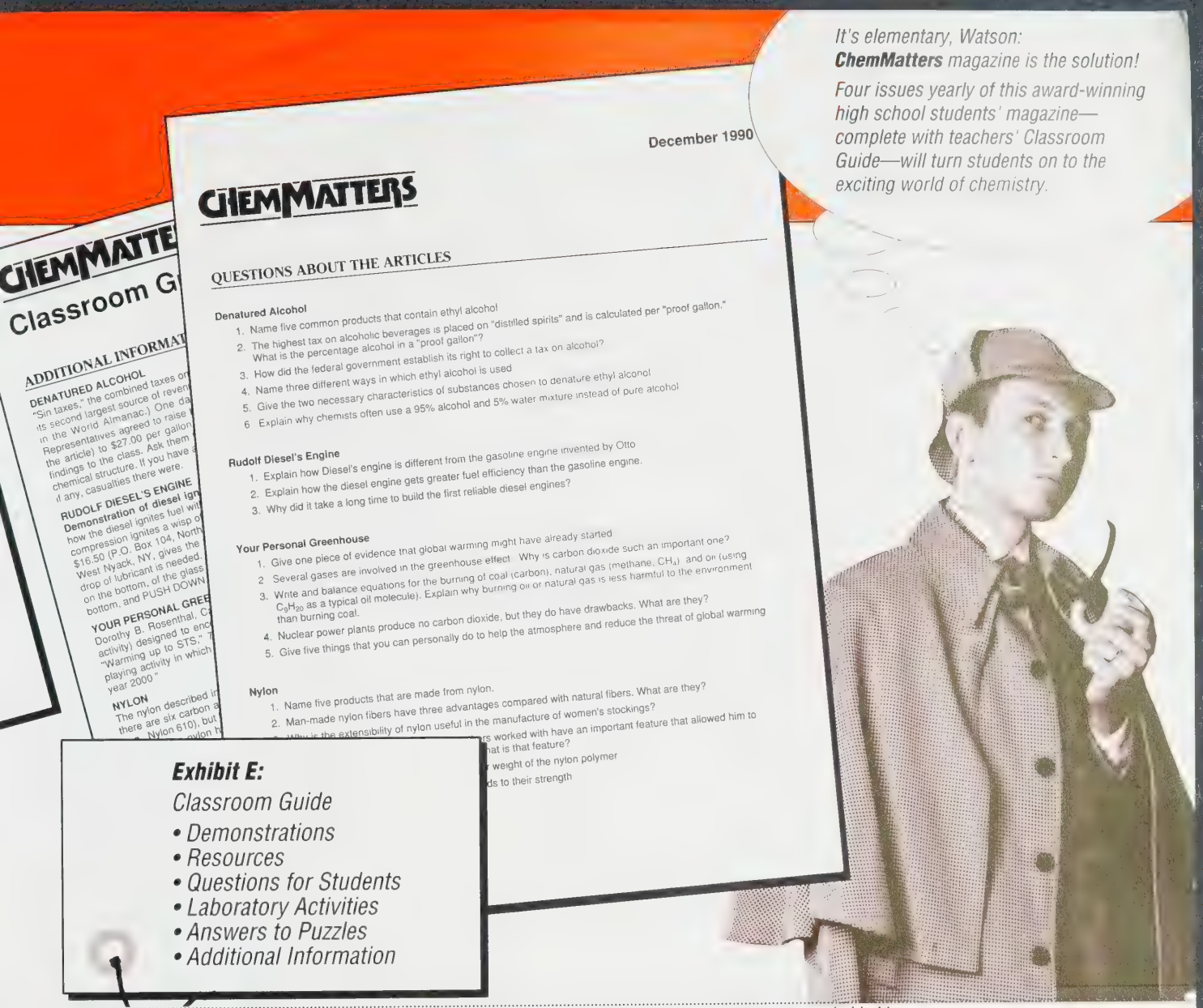


Exhibit E:

Classroom Guide

- *Demonstrations*
- *Resources*
- *Questions for Students*
- *Laboratory Activities*
- *Answers to Puzzles*
- *Additional Information*

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TESTIMONY...

From Expert Witnesses — Chemistry Teachers and Students

"**ChemMatters** is aptly named, for the articles you offer are written in an understandable manner for high school chemists and often give facts and ideas which make this science more meaningful."

Gordon Morlan, Grosse Pointe, MI

"I really enjoy using **ChemMatters** with CHEMCOM. I used the "Fox River Fish Kill (Oct. '90)" with the CHEMCOM Water Unit. The Classroom Guide saves me time, and I like the suggested ideas."

Donald Anderson, Fremont, NE

"I enjoy using **ChemMatters** in my classroom because it offers information on current topics that interest students."

Linda Tateoslan Red Lion, PA

"The best thing about **ChemMatters** is that it relates chemistry to everyday life. It shows a side of chemistry which is fun and exciting, even for nonscience-oriented students like myself."

Diana Florence, Dix Hills, NY

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American Chemical Society
1155 Sixteenth Street, NW
Washington, DC 20036

Production of **ChemMatters** is subsidized by the American Chemical Society — you pay *only* for printing, postage, and handling.
Four issues yearly — October, December, February, and April.

Quantity	Destination	Subscription rate (4 issues)	Cost
	US,Canada, Mexico	$2.50 each	
	All other countries	$4.50 each	
	Classroom Guide (1 copy free with orders of 5 or more subscriptions)	$3.00 each	
	Postage & handling		$3.50
For a review copy call (202) 872-4590		**TOTAL**	**$**
		51004/2147/E722	PNI 6504H

IMPORTANT! Please check only one:
Academic Year issues (begins with October issue of current school year)
One-year subscription. Next four issues after order is received.

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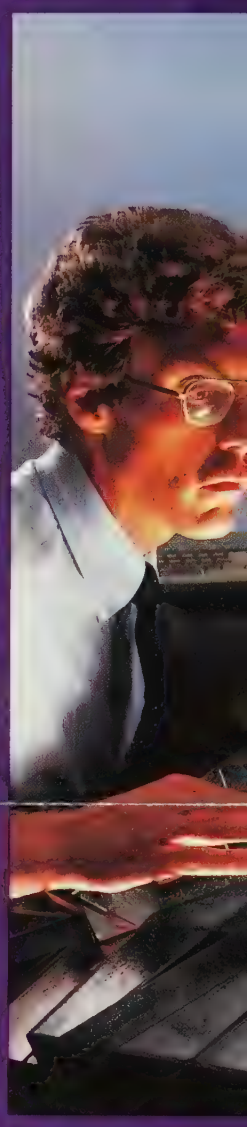
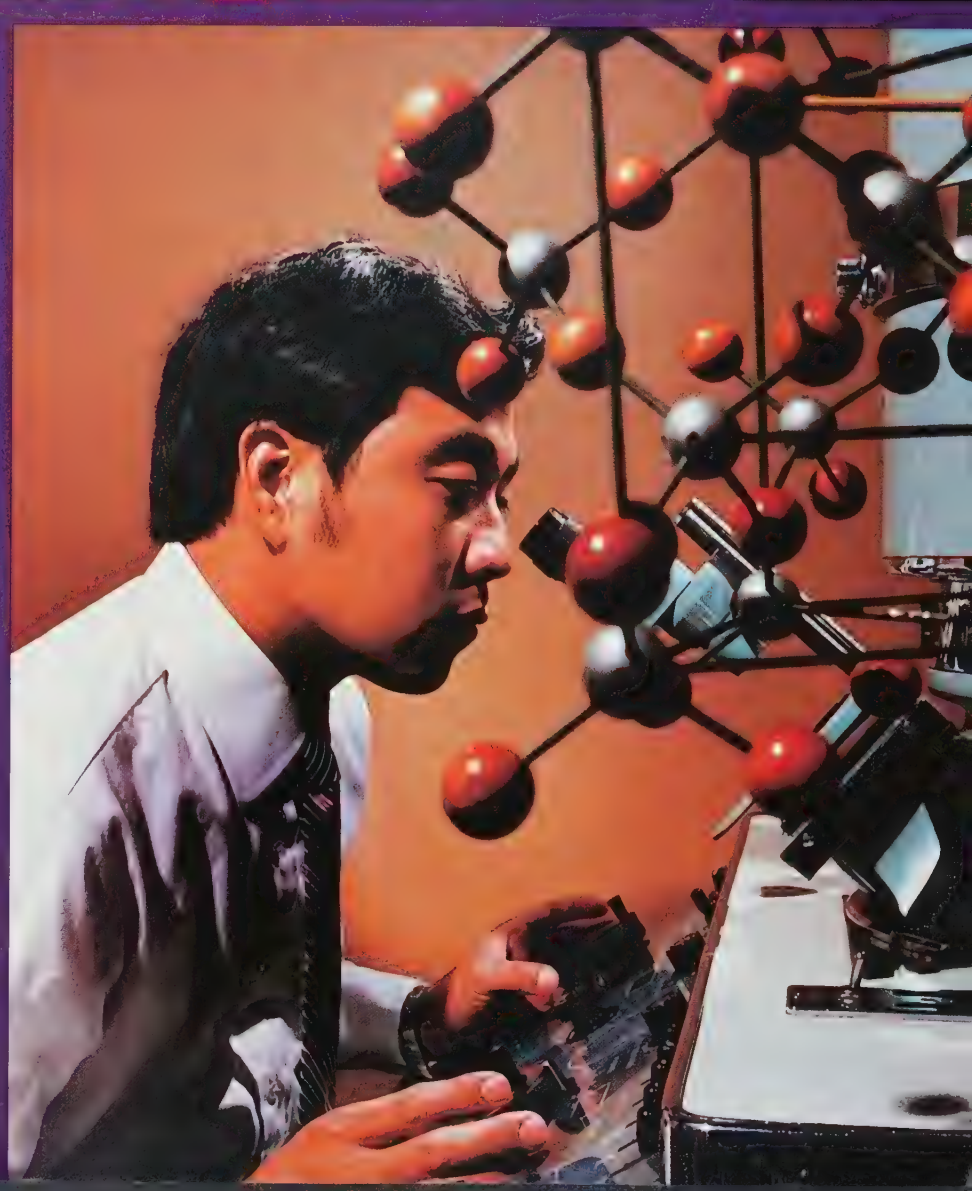
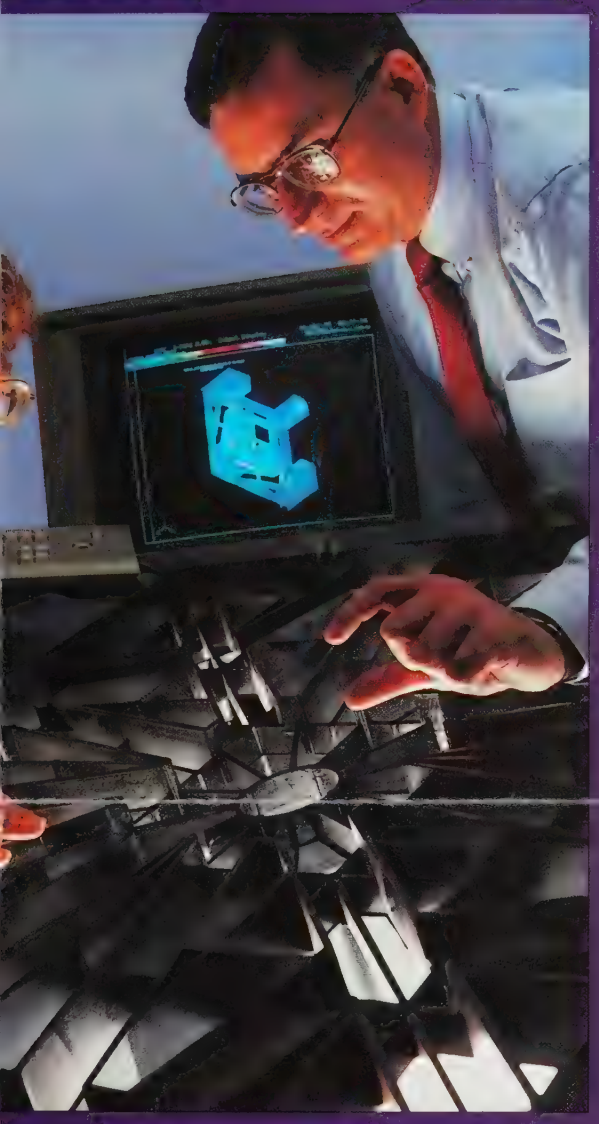
Chemistry in careers

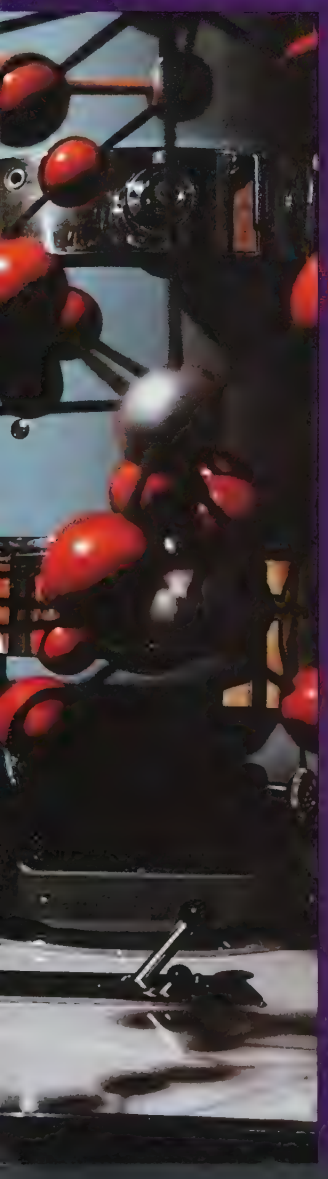
Photos by Colette Mosley; Zoologist, by Rebecca Brune.

Careers in chemistry









Clockwise from upper left: Photos courtesy of ACS; GE Corporate Research & Development, Schenectady, NY; PPG Industries, Inc., Pittsburgh, PA; Colette Mosley

What is a chemist?

A scientist—Most chemists work in modern laboratories equipped with sophisticated instruments. Chemists can synthesize new materials and learn to use known materials for new purposes. Chemists can make everyday products such as plastics; help cure or arrest diseases; and prepare, preserve, and improve our food. They can also attack questions such as "How old is the earth?" and "What is happening to the ozone layer?" Other chemists, such as managers and information specialists, do not perform experiments in laboratories.

A problem solver—Chemists are problem solvers. They often work in teams with other scientists. Finding the solution to a problem often requires the expertise of many disciplines.

An important part of the work force and the economy—There are some 185,000 chemists in the work force. They produce a great variety of consumer products, from plastics to gasoline, and make special materials such as rocket fuel. Chemical and related industries produce a substantial amount of our exports.

What do chemists do?

Most chemists are involved in either research and development (R&D) or production. *Research* is a process of discovery, of preparing new or modified materials; *development* is the next step. At this stage chemists determine if the compound can be produced successfully in commercial quantities in a usable form at acceptable cost. In *production*, chemists prepare compounds in the proper form and amount for commercial use.

Almost 50% of chemists work in research; even many of those do not spend a good deal of time in the laboratory. About 10% are in production. Only about 20% of chemists do not work in a laboratory or production plant.

Some chemists work in marketing, sales, or computer programming. A smaller group of chemists work in nontraditional fields. Some are patent lawyers, science writers, editors, information specialists, investment bankers, business owners, technical librarians, consultants, personnel recruiters, and art conservators.

What does a chemical engineer do?

Chemical engineers study ways to convert raw materials into finished products. They generally work on large-scale preparation of substances in production plants. Their challenges are to find a safe, environmentally sound process; to make the product in a commercial quantity; to determine the least costly production method; and to formulate the material for easy use and safe, economic transportation.

What does a chemical technician do?

The chemical technician is in a support position on a team supervised by a chemist or chemical engineer. Chemical technicians are experts in equipment and lab procedures. After the experiment is designed by the chemist or chemical engineer, the chemical technician sets up the equipment, assembles the materials and runs the reaction, monitors the results, collects the data, and reports on the experiment.

Many chemical technicians have two-year degrees in chemical technology; some have on-the-job training.

Why consider a career in chemistry?

Chemistry provides new challenges! Chemistry is central to research in new areas of great potential for society—

Superconductivity. Chemists are providing novel materials that carry electricity with minimum energy loss.

Biotechnology. Chemists are solving complex problems using biological processes in innovative ways.

Materials Science. Chemists are developing new ceramics, polymer alloys, and other materials to satisfy unique performance requirements.

Chemistry in traditional areas also presents challenges and excitement for future scientists. You could be the first to prepare a new compound with a new property, such as high heat stability, or to unravel the structure of a complex molecule, such as a part of a cancer cell, or to synthesize a more effective medication for high blood pressure that has no side effects.

Chemistry provides a wide variety of opportunities!

A career in chemistry covers many specialized fields from biotechnology to polymer chemistry, and offers a variety of work activities from collecting field samples to writing for a journal. There are employment opportunities throughout the world—government, industry, schools, and private organizations—at various levels of responsibility—manager, lab supervisor, researcher, technician.

Why do I need chemistry for other careers?

From cosmetology to psychology, from production to sales, in a forest or a hospital, chemistry is everywhere! The charts show how important a knowledge of chemistry is in many different fields. A high school chemistry course could be your ticket to an exciting career!

Chemistry helps the researcher, physician or health care worker understand how drugs or medical procedures work against specific diseases or disorders. These charts show some other scientific fields, as well as nonscience careers, where chemical knowledge is needed.

What if I have further questions?

Your high school guidance counselor, the staff at chemistry departments, and career-related literature can help you focus on your own situation and interests.

Scientific careers		High school	College chemistry	Bachelor's degree	Master's degree	Doctorate
Physical science	Astronomer					?
	Chemist					?
	Geologist					?
	Seismologist					?
Life science	Agronomist					?
	Animal scientist					?
	Biologist					?
	Horticulturist					?
Lab technician*	Biologist aide			?		
	Chemical technician			?		
	Criminologist			?		
	Food tester			?		

* An associate degree is recommended.

Legend

- Chemistry classes required
- Chemistry degree acceptable
  A science degree is required. If the bachelor's degree is in chemistry, classes in other areas will also be needed.
- Other science degree required
- Chemistry degree required
- ? Work at this level may be useful.

Mechanical/industrial careers		High school	College chemistry	Bachelor's degree	Master's degree	Doctorate
Engineering	Agricultural				?	?
	Chemical				?	?
	Materials				?	?
	Mining				?	?
	Nuclear				?	?
Management	Mine superintendent					
	Sanitation superintendent					
	Hazard management			?		
Production	Chemical mixer		?	?		
	Refinery operator		?	?		
	Quality control operator		?	?		

Business careers		High school	College chemistry	Bachelor's degree	Master's degree	Doctorate
Technical	Computer programmer				?	
	Information scientist				?	
	Technical writer					
Sales	Pharmaceutical			?		
	Chemical			?		
	Electronics		?	?		
	Engineering			?		

Medical careers		High school	College chemistry	Bachelor's degree	Master's degree	Doctorate
Medicine	Dentist					
	General practitioner					
	Specialist					
	Surgeon					
Nursing	Licensed					
	Registered					
	Aide					
	Hygienist					
	Physical therapist					
Health technician*	Pharmacy aide					
	Radiologist assistant					
	Medical technician			?		

Social service careers		High school	College chemistry	Bachelor's degree	Master's degree	Doctorate
Social service	Clinical psychologist					?
	Counselor				?	?
Beauty service	Cosmetologist					
	Hair stylist		?			
	Barber		?			
Nature management	Forester					
	Farmer			?		
	Dairy farmer			?		
	Wildlife control					
Other service	Food & drug inspector				?	
	Safety inspector			?	?	?
	Museum curator				?	?
Education	Anthropologist				?	?
	Science teacher				?	?
	College professor					?
Public service	Detective			?		
	Special agent			?		
	Fire ranger					
	Fire captain			?		

PROJECT SEED 25TH ANNIVERSARY

You are invited to attend a celebration of the 25th Anniversary of Project SEED (Summer Educational Experience for the Disadvantaged), the Society's social action program which encourages economically disadvantaged youth to pursue a career in science. Since its inception in 1968, Project SEED has placed over 3500 high school students in academic, industrial, and national laboratories and given them the opportunity to do hands-on research during an eight-to-ten week session during the summer.

The Committee on Project SEED, along with the Division of Chemical Education, is sponsoring a program "Opening Doors and Fulfilling Dreams," Monday, August 23 at the ACS Chicago national meeting in the Sheraton hotel. The celebration begins with a luncheon featuring Dr. Alfred Bader, founder of Aldrich Chemical Company and a primary supporter of the Project SEED Summer II program, as speaker. The luncheon will be followed by a symposium honoring the late Lincoln Hawkins and Milton Harris, both major players in the early development of the program. The symposium will present an historical overview of the program, and former participants will discuss the impact of the program on their lives and careers. Following the symposium, a reception will be held to recognize the many participants and preceptors of Project SEED programs. The winners of The Project SEED Miles Inc. college scholarships and the Heckert and Popoff scholarships will also be recognized. In addition to these events, several 1993 SEED students will present their research at Sci-Mix Monday evening.

You, the membership, have generously supported this program. Join us in celebration of 25 years of success. Check your final program for the specific rooms in the Sheraton for the Luncheon, the Symposium, and the reception. For more information on the Project SEED program or involvement in the ACS Office of High School Chemistry, call Christine Brennan, Staff Liaison to the committee on Project SEED at 202-872-4380, or look for Project SEED table at the Presidential Plenary Sunday night at the Chicago Museum of Science and Industry.

CHEMICAL WORKFORCE SYMPOSIUM SLATED

The 1993 ACS Corporation Associates Annual Symposium will address "Diversity in the Chemical Workforce of the 21st Century: Building a Competitive Advantage". The function is scheduled for Tuesday and Wednesday, August 24 and 25, at the McCormick Center (East).

This symposium, which will be co-chaired by Thomas Smith (Xerox Corp.) and John Host (Unocal Corp.) is being co-sponsored by Corporation Associates, the ACS Division of Industrial & Engineering Chemistry, the National Organization of Black Chemists and Chemical Engineers, the ACS Women's Chemists Committee, and the ACS Committee on Professional Relations.

Objectives of this two-day symposium are to explore workforce trends and competitive opportunities for the chemical process industries; share current understanding and initiatives in managing a diverse workforce within those industries, with emphasis on race and gender; and highlight U.S. strengths in leveraging diversity for advantage. (See ad for more information)

TEACHERS HONORED

Twenty-four exceptional teachers of science, chemistry and chemical engineering have been selected to receive the Chemical Manufacturers Association's 1993 Catalyst Award. The Catalyst Awards Program honors individual who have the ability to insure students toward careers in chemistry and science-related fields through their excellent teaching ability in and out of the classroom. The program also seeks to draw public attention to the importance of quality chemistry and science teaching at the undergraduate level.

The National winners for the Illinois area include: Joseph B. Lambert, Northwestern University; Lee Marek, Naperville North High School; and Betty Robinson, Lawndale Community Academy.

Since the award was established in 1957, 436 teachers of science, chemistry and chemical engineering have been honored. Winners are selected from a wide range of nominations submitted by colleagues, friends and administrators. All pre-high school, high school, two- and four-year college or university teachers form the United States and Canada are eligible. Each award winner will be presented with a medal and citation. National award winners receive $5,000 and regional award winners receive $2,500.

GUIDE TO CHICAGO ATTRACTIONS

POINTS OF INTEREST

John Hancock Center, 875 N. Michigan Avenue (312) 751-3678. This is a 100 story complex standing 1,125 feet high and contains offices, apartments, shops and parking facilities. It features a 94th floor observatory. Open Daily 9:00-midnight. Admission $3.65; over 65 & ages 5-17 $2.35.

Sears Tower, 233 S. Wacker Drive. Open 9:00-11:00 p.m. The world's tallest building is sure to charm all ages. The route to the Skydeck is a museum of art and history. Bring lots of quarters to operate the viewing binoculars at the Skydeck. The sunset on the skyline is spectacular. Bring your camera. Admission $4.25; Seniors $3.25; ages 5-15 $2.50. Family rate $10.50.

Chicago Tribune Freedom Center, 777 West Chicago Avenue. Open Mon.-Fri. with tours at 9:30, 10:30, 11:30 a.m. and 1:30, 2:30 and 3:30 p.m. The 45 minute tours are free and include a video recounting the history of Chicago Tribune and how a story is covered, followed by walks thru the plant. Call for reservations (312) 222-2116. Children under 10 cannot be admitted due to safety regulations.

Chicago Historical Society, 1601 N. Clark, at the end of Lincoln Park at Clark and North Avenue. Open Mon.-Sat. 9:30-4:30; Sun. Noon-5:00. Houses the oldest museum in Chicago. Period rooms show American history from the landing of Columbus to the present. Docents perform colonial chores and crafts demonstrations such as spinning and candle dipping. Their reference library has more than 175,000 volumes and manuscripts. Admission $3; over 65 and students $2. Free on Monday with I.D. Call (312) 642-4844.

MUSEUMS OF THE SCIENCES

The Adler Planetarium, 1300 S. Lake Shore Drive. Open Daily 9:30-4:30, Friday 9:00 p.m. A museum inside of the planetarium has a collection of time pieces, early scientific instruments, space hardware, history of space travel and, of course, the multi-media Sky Show (phone for schedule) (312) 322-0300. There is a children's show and museum Sat. and Sun. at 10:00. Admission $3.00; ages 3-17 $1.50; over 65 free.

Field Museum of Natural History, In Grant Park on Roosevelt Road at Lake Shore Drive. Open daily 9:00-5:00. One of the world's foremost museums of natural sciences. Exhibits explore the primitive arts, cultures of our American Indians, the civilization of China, Tibet, a wonderful "gem" collection (southwest corner off of the second floor balcony), the pachyderms and the dinosaurs. Stay all day! Admission $4.00; over 65, Students with I.D.'s and 3-17 $2.50. Family rate $13.00. Free on Thurs. (312) 922-9410.

The Museum of Science and Industry, 5700 Lake Shore Drive, in Jackson Park at 57th Street and Lake Shore Drive. Open Mon.-Fri. 9:00-5:30, Sat., Sun., and Holiday 9:30-5:30. The Museum is a reconstruction of the Palace of Fine Arts from the 1893 Columbian Exposition. It contains exhibits of applied sciences, engineering and industry. There is a working replica of a coal mine, a real German submarine captured in World War II, and the Fairy Castle. It also is the site of the Omni Theatre. Admission to the Museum $5.00; Seniors $4.00; ages 5-12 $2.00. Free on Thursday. (312) 684-1414.

Henry Crown Space Center & Omnimax Theatre. In the Museum of Science & Industry (see above). Open daily 9:30-5:30, Holidays 9:30-4:00. The Museum portion has exhibits on astronauts and space travel including a simulated space station. Space craft are also on exhibit. The theatre shows films about every hour. Film will be announced. Admission $5.00; Seniors $4.00; ages 5-12 $3.00. Admission to the film and the Space Center are separate from the Museum as a whole. Enter the Omni Theatre on the Lake side. There is parking East of the building. (312) 684-1414.

ART MUSEUMS

Art Institute of Chicago, Michigan Avenue at Adams Street. Open Mon.-Fri. 10:30-4:00 (Tues. to 7:30 p.m.), Sat. 10:00-5:00, Sun. 12:00-5:00. Collection includes famous paintings, 13th century to present. Modern selections include furniture, a children's museum area and the wonderful Thorne Miniature Rooms. The Harding Collection of arms and armor is also at the Art Institute, as is the original Board of Trade Room. Suggested admission fee $6.00. Free on Tuesday, Cocktail hour Tuesday from 4:30-7:30 with a jazz band for dancing, a cash bar and free hors d'oeuvres.

Martin D'Arcy Gallery of Art, 6526 N. Sheridan Road. Closed during semester breaks (On Loyola University Lake Campus). Open Mon.-Fri., Noon to 4:00 (Also Tues. & Thurs. 6:00-9:00). Sun. 1:00-4:00. This gallery exhibits Medieval, Renaissance and Baroque art. Some very exceptional pieces of religious art are found in the collection. (Enter thru the Library). Free.

Terra Museum of American Art, North Michigan Ave. at Erie St. Open Tues. 12:00-8:00, Wed.-Sat. 10:00-5:00, Sun. 12:00-5:00. There is a delightful permanent collection of 18th and 19th century paintings and a special exhibit opening

(continued on page 17)

AMERICAN CHEMICAL SOCIETY
PROJECT SEED

"Opening Doors and Fulfilling Dreams"

Project SEED has been extremely successful in contributing to the career development and educational growth of more than 3,300 talented students throughout the United States since its inception in 1968.

A Program of the American Chemical Society

Project SEED

Summer Educational Experience for the Disadvantaged

What is Project SEED?

Project SEED is the American Chemical Society's (ACS) social action program that places economically disadvantaged high school students in academic, industrial, and government research laboratories for eight-to-ten weeks during the summer to learn what it's like to work as part of a team doing hands-on research. Each student does a chemical research project under the direct supervision of a scientist/mentor (called a preceptor) and receives an educational award. During the summer of 1993, Summer I students (first year students) will receive $1,500 and Summer II students (students returning for a second year) will receive $1,700 with an additional travel grant of up to $100 to attend a scientific meeting. The student educational awards are provided entirely by contributions from corporations, foundations, ACS local sections, and individual ACS members.

How are Institutions Selected to Sponsor a SEED Student?

Application packets are sent in December to all two- and four-year colleges, ACS local section chairmen, and institutions who participated the previous year. Interested institutions apply to the ACS Committee on Project SEED for funding at the beginning of each calendar year. Award monies cover student educational awards. Supplies, materials, and any overhead expenses are provided by the participating institutions. Priority for funding is given to those institutions with matching or supplemental funds for student awards from local sources or ACS local sections.

How are Students Selected?

The funded institutions recruit their own students to participate in the program. The preceptor at the institution contacts local high schools and develops a method for Summer I student selection. Summer II students are selected based upon the recommendation of their former SEED preceptor. Summer I students should be entering their junior or senior year in high school in September. Summer II students may be entering their senior year in high school in September or be a recent high school graduate; no student who has matriculated in college is eligible. The student must be interested in science and must have completed a course in chemistry.

How Successful is Project SEED?

Since its inception in 1968, the Project SEED Summer I program has made it possible for more than 3,300 talented high school students to conduct research in local chemistry laboratories.

Because of the enthusiasm and excitement of Project SEED participants, ACS expanded the program in 1992 to include a second summer of research (Summer II). This program allows former SEED students to come back for an additional summer of research. SEED Summer II is made possible through a generous grant from the Bader family. Miles Inc. has also recognized the success of the Project SEED program and has provided funding to the American Chemical Society for college scholarships to former SEED participants. Scholarships for SEED students are also available at Indiana University and Miami University of Ohio.

More than 350 institutions throughout the United States and Puerto Rico have participated in Project SEED since 1968.

SEED Students Speak

"Project SEED really helped me to appreciate all the hard work that goes into solving scientific research questions. It also dispelled my image of a 'mad scientist'! The scientists were just great!"

Jennifer Hansen, Summer I
University of California
San Francisco, CA

"This has been a great opportunity for me. Working in research is not only a great experience but it's also a fun way to learn and develop self-confidence. Thanks to SEED, I have a goal — to get my Ph.D. in chemistry."

Patricia Sanchez, Summer II
Stevens Institute of Technology, NJ

"The Project SEED program was great and greatly influenced my college decision to major in chemical engineering. I really wish to continue next year in the Summer II program with a new research project."

Carlos Rey Romero, Summer I
Los Alamos National Laboratory, NM

"This program helped me put my future in perspective by showing me a new field of study that has really won me over. I end this with a great deal of thanks!"

Cliff Sanders, Summer II
Florida International University, FL

Project SEED and You

Things you should know

Students — should have completed a course in high school chemistry
should be entering their junior or senior year in high school
should meet financial guidelines
should be interested in learning about scientific research

Teachers — should call the ACS Project SEED office for program guidelines
should ask the SEED office for a list of participating SEED programs in their area
should call local SEED programs to inquire about program guidelines for the selection of students

Institutions — should be an academic, government, or industrial laboratory
should call the ACS Project SEED office for an application packet
should identify local sources of matching funds for student educational awards
should attempt to identify students from local high schools

January	February	March	April	May	June
SEED proposals sent to corporations for overall program funding	SEED applications due at ACS office	SEED committee reviews applications	Award letters sent to preceptors Student application forms sent from preceptors	Student applications due Preceptors select students	Students begin research projects Initial survey forms filled out by students and returned to ACS
July	**August**	**September**	**October**	**November**	**December**
Follow-up surveys sent to students	Follow-up surveys and final student reports due at ACS	Project SEED program ends	Project SEED college scholarship information available	Project SEED Summary Report sent to all preceptors	Applications sent to all two- and four-year colleges and past participants

For additional information, contact:

Project SEED
American Chemical Society
Education Division
1155 Sixteenth Street, NW
Washington, DC 20036
202-872-4380

AMERICAN CHEMICAL SOCIETY

Project SEED

25th Anniversary Celebration

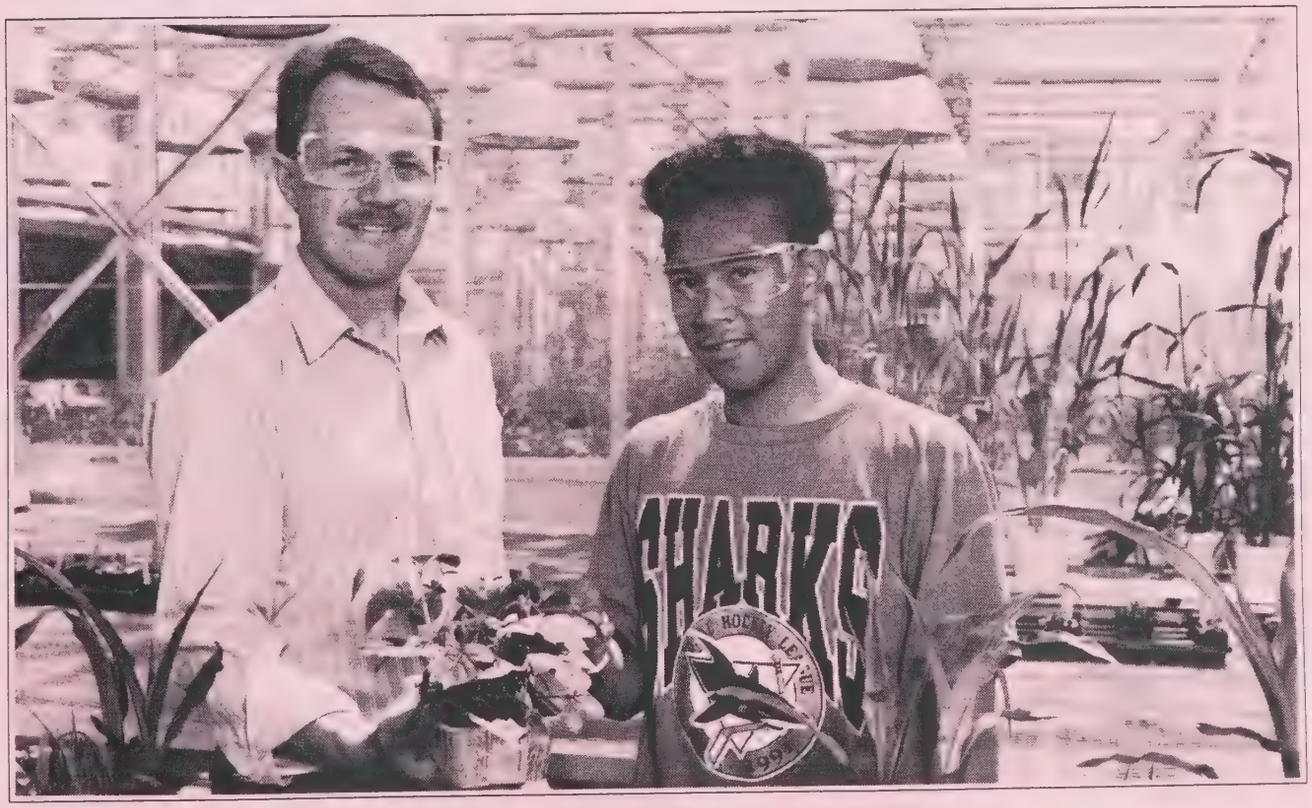
"Opening Doors and Fulfilling Dreams"

ACS FALL NATIONAL MEETING CHICAGO, IL
MONDAY, AUGUST 23,1993

Luncheon
SHERATON
CHICAGO BALLROOM VIII
DR. ALFRED BADER, SPEAKER
12:00 NOON-1:30 PM

Symposium
SHERATON
CHICAGO BALLROOM V
1:45-5:00 PM

Reception
SHERATON
CHICAGO BALLROOM VIII
5:00-6:30 PM



Project SEED

Summer Educational Experience for the Disadvantaged

A Historical Look, 1968 - 1993

In the midst of the turbulence in the 1960s related to racial unrest and its underlying societal conditions, the American Chemical Society (ACS) was the first scientific society to formally take action to address the associated problems.

On April 2, 1968, the ACS Council adopted a resolution, presented by the Western Regional Councilors Caucus at the 155th ACS National Meeting in San Francisco, California, which called upon the Society to take "all appropriate steps" to help the nation's "disadvantaged persons" overcome the handicaps of inadequate education and underemployment. One of the specific recommendations of the Council was that the Society's local sections be encouraged to "embark upon programs to alert chemical industry in their respective areas to assist in training disadvantaged persons with the goal that they will become employable." Cooperation with appropriate public agencies and aid to educational institutions, in the form of tutorial assistance and supplies of chemicals and chemical equipment, also was urged.

Project SEED, the program undertaken in May 1968 by the ACS Committee on Chemistry and Public Affairs (CCPA) to implement this action by the Council, represents an unprecedented effort by the ACS to strike at the root causes of this societal crisis — lack of education and unemployment. The formation of the CCPA Subcommittee on the Education and Employment of the Disadvantaged (SEED) was a unique attempt by a scientific society to mount an organized offensive against one of the country's great social ills.

From the beginning, Project SEED received enthusiastic support from the Society's leadership, the late Milton Harris, then the Chairman of the ACS Board of Directors, and the late Robert W. Cairns, the 1968 ACS President. Franklin A. Long of Cornell University was Chairman of the ACS Committee on Chemistry and Public Affairs, and Stephen T. Quigley, ACS Staff Director of Chemistry and Public Affairs, provided the management support for the project.

For more information on Project SEED, write to:

American Chemical Society
Education Division, Room 806
1155 Sixteenth Street, NW
Washington, DC 20036

The late Joseph Stewart of Esso Research and Engineering Company was the first chairman of the CCPA Subcommittee on Project SEED. On assuming the chairmanship, Stewart said,

> If the American Chemical Society is to lay a meaningful role in alleviating the plight of the disadvantaged persons of our nation, we must not only provide leadership in attacking the problems, but also show concretely how an organization such as ours can contribute.
>
> Although alone we cannot solve the basic problem, we can set an example that can be adopted by our sister societies. We have accepted the responsibility of accomplishing whatever we can by utilizing the considerable resources of the Society to their fullest extent. A coordinated effort by the Society, the chemical industry, and the academic community would do much to overcome the difficulty faced by many citizens.
>
> The Council's resolution is not merely a statement of principle. It is a directive to develop and above all implement specific effective programs to fulfill the intent of the resolution. We must develop imaginative yet realistic programs to attack the basic problems.

A biracial panel of the SEED Subcommittee, ACS staff, and concerned members met in the summer of 1968 and developed a number of recommendations and proposals, which were organized under ten task forces. Each task force initiated specific plans of action which were judged to be essential to the solution to the problems of the disadvantaged. The tutorial assistance program, Project Catalyst, was selected to be the Project SEED pilot program. The concept was to have a rising senior high school student from an economically disadvantaged family spend ten weeks during the summer as a "research assistant" in an academic or governmental research laboratory working on a one-to-one basis with a research scientist. The student would earn a small stipend and participate meaningfully in research.

continued on back page

SEED Success Stories

Letter received January, 1993, from Rabindra N. Roy, Department of Chemistry, Drury College, Springfield, MO.

I have had the privilege of sharing most of the past 25 years as a mentor for students in the Project SEED program. Our department has had the opportunity to offer summer research experience to high school students who have shown a genuine interest in the sciences. Many of these students never would have had such an opportunity to tell their success stories, if it were not for the ACS Project SEED program.

I have felt a sense of accomplishment, knowing through joint efforts we have implanted an insatiable desire for science into the minds of many Project SEED students. Through the funds provided by SEED, students have discovered that there are unlimited horizons—scientific adventures "out there" for them—and much more beyond what they already have achieved.

Dreams of minority students, such as Leatha Toliver a former Project SEED student, who graduated from the University of Missouri–Rolla with a B.S. degree in chemistry and now employed as a chemical engineer at Eastman Chemical Company, Kingsport, Tennessee, are fulfilled through the concerted efforts of the students themselves, the professors, and Project SEED.

As a result of the SEED program, students like Dr. David Osborne can go forth as a leader of science technology (see story below). Dr. Osborne served as the 1992 Chairman of the ACS Division of Colloid and Surface Chemistry and currently serves as Group Leader, Skin Care, Calgon Vestal Laboratories, a subsidiary of Merck & Co., Inc.

Congratulations Project SEED, on 25 successful years.

Letter received January, 1992, from David Osborne, Calgon Vestal Laboratories, P.O. Box 147, St. Louis, MO.

I would like to specifically describe the influence that Dr. Rabindra Roy had on my career during the ten weeks in 1978 that I was one of his ACS Project SEED students. Without a doubt, Dr. Roy is the catalyst that caused me to choose chemistry as a career. Were it not for Dr. Roy, I would not be a chemist today! When I first met with Dr. Roy, I explained to him that I wanted a science related career, most probably as a forest ranger. Within three weeks of working with Dr. Roy, I was not only convinced that I would complete my undergraduate degree as a chemistry major, but also that I would continue to earn a Ph.D. in physical chemistry. Both events occurred. In addition, I look back on that summer as the source of my best laboratory techniques, and my current attitudes toward not being satisfied with less than the highest quality research possible.

University of Vermont newspaper article dated June 28, 1976

"CVU Junior Chosen for Special Summer Chemistry Study with UVM's Dr. Ludley"

In an attempt to reach out to disadvantaged high school students, the American Chemical Society offers summer internships on the college level to promising high school students.

The University of Vermont, in conjunction with the ACS's Project Catalyst has chosen Frank Switzer, a junior at Champlain Valley High School in Hinesburg, to study with Dr. Dave Ludley of the Chemistry Department this summer.

Nationally only 60 students were chosen for the honor of studying on a one–to–one basis with a college chemistry professor. Switzer was chosen as the Vermont representative on the basis of Mrs. Barbara Lewis, his chemistry teacher's recommendation.

For his summer program, he will be studying the chemical reactivity of dihalocyclopropanes. Dr. Claus Wulff, Chairman of the Western Vermont section of the ACS, and head of Project Catalyst at UVM explained that "the lab work that Switzer will be exposed to will offer him experience that surpasses the usual college introductory chemistry course."

Switzer, who lives with his parents in Williston, is leaning towards a college major in either chemistry or biology.

As encouragement to students like him, who may not be able to afford the full cost of a college education, the ACS contributes a $500 stipend.

Dr. Wulff, who has been supervising the program at UVM since its inception seven years ago, noted the success it has had as two of the first students to participate not only entered college but are now enrolled in Ph.D. programs.

Letter received September, 1991, from Barbara B. Lewis, Dept. of Chemistry, Univ. of Vermont, Burlington, VT.

Frank Switzer went on to college at Nazarene University then obtained his Ph.D. in inorganic chemistry at Dartmouth. He now teaches organic chemistry at St. Anselm's College in Manchester, NH (his second year there). I am very proud of him.

Letter received September, 1991, from Kim Nguyen, BASF Corporation, 602 Cooper Road, Freeport, TX.

I was a 15 year–old high school student in May of 1984, and was on the quest for a summer job. I was never too thrilled about working the "common" jobs that most students worked, such as fast food restaurants and grocery stores. My interests mainly dwelled in math and science, and therefore, I wanted to find a summer job that would increase my knowledge in these areas. This is where Project SEED had an impact on my life.

I was one of two Project SEED participants in the chemistry department at New Mexico State University (NMSU). Dr. Joseph Sneddon, Associate Professor in analytical chemistry, was my advisor and eventually became my mentor. That summer, Dr. Sneddon taught me the basic theory of analytical chemistry and atomic absorption spectroscopy. I had the opportunity to not only learn a different area of chemistry, but to also assist graduate level students with their discoveries, and develop my own experiments and interests in the laboratory. By the end of my work phase, I felt much more mature and determined that science was definitely for me. I could hardly wait to begin my ventures in the higher level of education.

The following summer, after my graduation from high school, I again worked for Dr. Sneddon in the NMSU chemistry department. I also ambitiously began my college career and was certain that analytical chemistry would be my major. After going through just one semester of the basic chemistry program, I had discovered that I would need to acquire a higher degree than a B.S. in chemistry in order to obtain a challenging career. I discussed my thoughts with Dr. Sneddon and the graduate students that I had befriended during my Project SEED work, and was advised that I should look into engineering as my major. Specifically, chemical engineering was suggested to be within the realms of my interests since I wanted to keep the chemistry aspect. I then decided that I would give chemical engineering a try without any further thought.

The next five years were perhaps the most hectic in my entire life! I experienced more difficulty than pleasure in trying to adapt and have a true feel for chemical engineering. The situations were no longer on a bench scale level, but rather immense and critical in terms of the entire process. I have to admit that there were several semesters when I felt that perhaps engineering was not for me, but I kept on pushing and struggling. The result of my hard work was that I finally graduated with a B.S. in chemical engineering in 1990, thanks to perseverance and my mentors.

Despite the struggles, I had also gained many good fortunes during my college career. I had several more pleasant work experiences with IBM in Burlington, Vermont; EG&G in Idaho; and a continuous part–time job with a waste water company called Bio–Recovery Systems, Inc., that had been developed at NMSU. My senior year was the best in the fact that I was successful with my professional job search, and was given several choices for my career path before I graduated. I chose to work for the BASF Corporation in Freeport, Texas, in June of 1990.

For the past year, I have had professional training in engineering, production, and research and development at BASF. I went through both familiar and unfamiliar subjects of chemistry, engineering, economics, and most important of all, interpersonal relationships with colleagues. I am now currently working as a Project/Process Engineer in the Specialist Group for the Polyethyleneimine Plant. Work definitely has been more than challenging!

When I look back and reminisce about the starting point in my career, I can still clearly see the curious high school kid who was trying to plant her SEED in society, hoping that one day it would grow into something significant. Now I am standing tall and will always be proud of my roots. Thank you both, Dr. Sneddon and Project SEED! Thank you in every way for the opportunity and support.

Letter received from Wan-Sze Ho, 4450 Mohr Avenue, #26, Pleasanton, CA.

My chemistry teacher, Ms. Carol deBoer of Amador Valley H.S. asked me if I was interested in participating in Project SEED during the summer of 1992. I thought it sounded pretty good and it gave me something to do over the summer. Everything was set up and ready to go by the time summer came. I kept in touch with Elaine Yamaguchi (the coordinator) and I worked with my mentor Jeff Harris and assistant mentor Noel Moore. Throughout the time I spent there at Chlorox Technical Center I learned numerous types of skills.

After working with Chlorox over the summer I want to become a chemist and get my Ph.D. in chemistry and minor in business. I am currently back at Chlorox interning for them and hope I get a summer job with them. I'll put away the money I earned for college. After two years of community college, I'll transfer into a university where I'll get my B.S. Then go to an out of state college or university for graduate school and get my Ph.D.

I think Project SEED helped me a lot in choosing my major and what I want to do in the future. It has really expanded my horizons in mathematics and **SCIENCE!**

Letter received January, 1992, from Sue Ann Scheppers, preceptor, Varian Associates, 2700 Mitchell Drive, Walnut Creek, CA.

This past summer I had the pleasure of being a mentor for Enoch Sun, a 17 year old junior from Albany High School in California. Since this was my first experience as a mentor for the project and the first time for my employer, Varian Associates, to take on a student, this was indeed a new and very beneficial experience for all. Enoch's primary activity during the ten week project was to evaluate one of our new products. Under the guidance of our research and development manager and myself, Enoch set up experiments, ran them, and reported his findings in a laboratory notebook. This caused him to understand each experiment and deduce valid conclusions. Fundamental skills of conducting scientific experiments and keeping a laboratory notebook will be invaluable to him if he pursues any science in the future. Other skills he learned during the summer were fundamentals of Microsoft Excel and Word for Windows, basic statistics for reporting his data, and giving a thirty minute presentation of his project to our upper management.

He is to be commended on his commitment to the project for the entire ten weeks, especially since he had an unusually long commute. Each day he would ride his bike from home to the BART station, ride the train to Walnut Creek, then take a bus to the office. His total commute each way was usually one and one-half hours!!

Two weeks into the program when I inquired about his impressions of the project compared to his expectations, he remarked it was a lot like school. No doubt, each day was full with new things to learn. Since then, he has written, "You have given me the most memorable summer experience I have ever had. I just want to thank you again." The ACS Project SEED Committee is to be congratulated on providing an excellent program to encourage a budding young scientist and an invaluable experience for both students and mentors.

Letter received January, 1993, from Lenny Allen, 1469 N. Rogers, Springfield, MO.

It seems I could say a million good things about Project SEED. One of the greatest lessons I learned during my summer experience in 1992 was the positive contributions people could make to society as we studied cellular development and kidney preservation.

Seeing the techniques of kidney preservation made me realize that through research the preservation of other organs or tissues could be accomplished for various surgeries, brain surgery for example.

I think another discovery was when I came into the program, I had the feeling of a good degree of intelligence, but the program made me realize there was much more out there to expand my intelligence, and yet the program let me know, in fact, I too had accomplished something.

(Lenny Allen has completed a degree in electrical engineering. He is employed at Paul Mueller in Springfield, MO, as an inspector.)

SEED History continued .....

The first Chairman of Project Catalyst was the late Leo Schubert of American University. The initial trial program for ten students in 1968 was financed by a $5,000 donation from Milton Harris. The next year, 73 students participated in the program at 70 institutions. Funding was provided by a $50,000 loan from the ACS Board of Directors, contributions from both the ACS North Jersey Section ($2,000) and the ACS Northeastern Sections ($5,000) and from a few corporations and individuals.

An evaluation of Project SEED in 1973, after the first five years, resulted in the policy decision to concentrate the Society's limited resources in support of the original pilot program, Project Catalyst. A moratorium was set on the work of the other nine task forces, and henceforth the names Project Catalyst and Project SEED became synonymous.

Support for Project SEED over the years has been uneven and participation by local sections in support of the program has been selective. After a decline in financial support in the late 1970s, the program grew again during the 1980s. In total, almost 4,000 high school students and more than 350 institutions have participated in Project SEED since its inception in 1968.

Over the past twenty-five years the SEED program has been extremely successful in contributing to the career development and educational growth of disadvantaged youngsters. Many youth have reported that their involvement in Project SEED helped them learn what advanced study is like, gave them a better understanding of the purpose of scientific research and how it is done, and enabled them to discover new skills and abilities. The personal relationship that these youth develop with their research supervisors and the experience of performing meaningful research are key factors in raising student's goals and expanding their horizons.

- Stephen T. Quigley

Letter received from Sue Fahrenholtz, New Jersey SEED coordinator.

Marisol Estela worked the summer after she graduated from high school (1989) at Hoffmann La Roche, as a SEED intern. She could not go on to college because she is the sole supporter of her mother. After the summer she was offered two temporary pretty well-paid, full-time jobs at Roche. She accepted one, in the department where she still works.

After a year she was made permanent, as a Lab Tech One. She than started going to school at night at Fairleigh Dickinson University paid for by Roche. She has just been promoted to Lab Tech Two.

She may not have achieved as much yet, compared to other SEED students, but she started essentially homeless and destitute. She now has a good job with benefits and is still doing chemistry.

SEED, call ACS at 202-872-4380. If you would like further information about SACNAS and its conferences, contact Judith Scollon, SACNAS, at 408-459-4272.

Project SEED Celebrates 25 Years

"Opening Doors and Fulfilling Dreams" is the theme for the 25th anniversary of Project SEED (Summer Educational Experience for the Disadvantaged), which will be celebrated during 1993. Since its inception in 1968, SEED has changed the lives of many minority and economically disadvantaged high school students. In its 25 years, SEED has given more than 3,300 high school students the opportunity to experience scientific research first hand in an academic or institutional laboratory. This experience helps students focus their career goals and provide them with greater access to the scientific community.

"This has been a great opportunity for me. Working in research is not only a great experience, but it's a fun way to learn and develop self-confidence. Thanks to SEED, I have a goal: to get my Ph.D. in chemistry."

Patricia Sanchez
Stevens Institute of Technology, NJ

When we "open doors and fulfill dreams," we help students develop self-confidence and discover skills and abilities that can be seen as an investment for the future. In the summer of 1992, more doors were opened with the beginning of a new Summer II Program (funded by a generous donation from the Bader family), which allowed 54 students to return for a second summer of research. The program was an overwhelming success. During 1993, Project SEED will launch a college scholarship program funded through an endowment by the Miles Inc. Foundation, which will award approximately three college scholarships annually. Project SEED is a program of which every ACS member can be proud.

The Committee on Project SEED and our future scientists are grateful for the continued support and dedication of ACS members. Please join us in celebrating SEED's 25th anniversary at the Chicago ACS national meeting, where the celebration will begin with a symposium on the history and development of the program. This event will include a memorial to honor two of SEED's most dedicated and active supporters, the late Milton Harris and the late W. Lincoln Hawkins.

For more information about Project SEED and its 25-year celebration, contact the Project SEED office at 202-872-4380.

Environmental Enlightenment

ChemCom CAREERS

The American Chemical Society is developing nontraditional career materials for use with the *Chemistry in the Community (ChemCom)* curriculum. This issue of *Chemunity News* presents the ninth of these *ChemCom* careers.

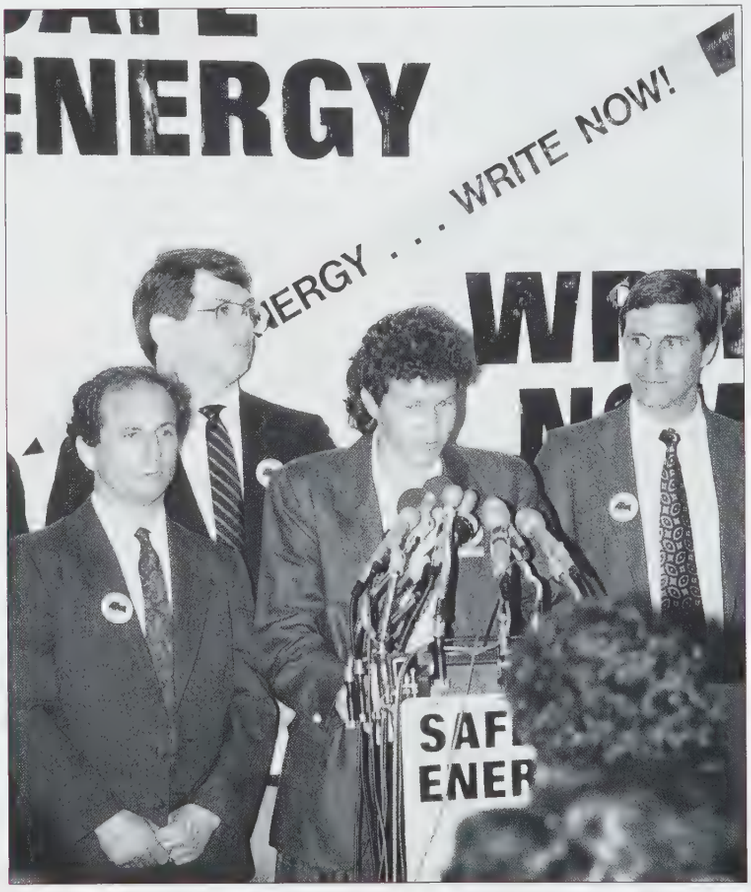
Alexandra Allen is an attorney and engineer employed by the Greenpeace national office in Washington, DC. In her role as Atmosphere and Energy Policy Coordinator, Allen formulates policies and political strategies for Greenpeace on global warming and energy issues. Her efforts in the United States are undertaken in cooperation with Greenpeace counterparts in 23 other countries.

Allen depends on numerous information sources. These sources include federal and state governments, the United Nations, university research centers, industrial associations, and private research organizations. She also uses popular magazines and newspapers from around the world. These enable Allen to maintain knowledge of the scientific, economic, and political dimensions of environmental issues.

Allen uses this knowledge to evaluate proposals by governments and industries to address issues such as oil dependence and global warming. Public attention is focused on the potential consequences of global warming and the need to reduce reliance on fossil fuels. Improving the efficiency with which energy is used and developing environmentally safe, renewable energy resources are central for her work.

At Greenpeace, Allen works to make these issues widely understood—and acted on—by citizens, governments, and industries. She has written critiques of federal energy legislation and issued briefings for grassroots activists who are seeking to encourage their political representatives to become leaders in energy issues. Allen gives many public presentations, frequently to school and religious groups concerned with environmental issues. She also gives interviews on energy and environmental issues to reporters from radio and television shows, newspapers, and magazines.

A knowledge of chemistry and other physical sciences gives Allen the background to understand the scientific components of many environmental issues. This knowledge also helps her to recognize when scientific knowledge is incomplete and to appreciate the importance of precautions when evaluating potential consequences of new technologies. Allen prepared for her career by earning the B.S. degree in chemical engineering and public policy, as well as a law degree.



Alexandra Allen answers questions at a press conference on safe energy use.

1992 Highlights

Design Limited software package ISIS/Draw.
- Under an agreement with the Russian Academy of Science, an STN International training and demonstration center was established at the Institute of Organic Chemistry in Novosibirsk.
- STN offered an 80% cut in search charges for selected databases in the formerly Communist-controlled countries of Central and Eastern Europe and the republics of the former USSR.

EIGHT ISSUES OF *WONDERSCIENCE* MAGAZINE WERE PRODUCED IN 1992

EDUCATION

The ACS Education Division carries out the Society's activities in support of elementary, middle school, high school, college, and continuing education. Objectives accomplished in 1992 included:

Prehigh School Science

- Working with the American Institute of Physics, eight issues of *WonderScience* magazine were produced, highlighting the following topics: The Physics of Music (Jan.), Fabrics and Fibers (Feb.), Earthquakes (Mar.), Food Additives (Apr.), Forces (May), Optical Illusions (Oct.), Soaps and Detergents (Nov.), Toys in Space (Dec.).
- Twenty-seven PACTS (Parents and Children for Terrific Science) minigrants were funded, for projects involving adults and children in out-of-school science activities in the states of Michigan, Missouri, New Jersey, Alabama, Georgia, New York, Texas, Ohio, Florida, Pennsylvania, Colorado, Minnesota, Louisiana, Mississippi, California, Wisconsin, and Illinois.
- The grade-seven modules for the NSF-funded 7th- and 8th-grade integrated science curriculum, FACETS (Foundations and Challenges to Encourage Technology-based Science), were field tested in more than 60 schools. The grade-eight modules have been written, and are now being field tested.
- Phase I of Operation Chemistry, an NSF-funded teacher training project, was completed at the end of September. The project resulted in an evaluation of its companion project, Operation Physics, and the production of 12 field-tested workshop books for training upper elementary school teachers: The Language of Chemistry, Matter and Its Changes, Chemical Reactions, Energy, Acids and Bases, Density, Food Chemistry, Environmental Chemistry, The Chemistry of Life, Industrial Chemistry, The Space Shuttle, and Polymers.
- The ACS, American Institute of Physics (AIP), and the Resident Associate Program of the Smithsonian Institution collaborated in a training program for local scientists who wish to work with elementary children and their teachers. This hands-on program, Science with a Scientist, resulted in training 50 local Washington scientists at the Smithsonian.

High School Chemistry

- The 24th International Chemistry Olympiad was held July 11–22, 1992, in Pittsburgh, PA, and Washington, DC. This 10-day event gathered teams of four students and two adult mentors from 33 countries. The students participated in a five-hour laboratory practical exam and a five-hour theoretical exam, revolving around the theme "Chemistry of the Earth." The ACS Office of High School Chemistry coordinated the participation of four student finalists who represented the United States. These students earned a total of four medals–one gold, two silver, and one bronze–in the international competition, placing fourth out of 33 countries.
- Education staff also coordinated the participation of 136 local sections in the U.S. National Chemistry Olympiad program and 20 student semifinalists at the study camp at the U.S. Air Force Academy.
- In 1992, 303 Project SEED Summer I students participated in research programs at 109 institutions; 25 of these programs were funded by the 1992 ACS/NSF Young Scholars Partnership program, and 26 by the third year of a five-year grant from the ACS/U.S. Department of Energy, Office of Transportation Materials partnership.
- A generous grant from the Bader family initiated the Project SEED Summer II program. This new SEED offshoot enabled 55 returning Project SEED students to be placed at 37 institutions.
- The Office of High School Chemistry, with funding from the Council for Chemical Research and Rohm & Haas Corp., released "People Who Took Chemistry, That's Who!", a 15-minute videotape accompanied by a 52-page User's Guide highlighting careers in chemistry, targeted at high school chemistry students. A grant from ACS Corporation Associates enabled the Office of High School Chemistry to produce the User's Guide, to advertise the product to high school chemistry teachers, and to send one copy of the package to each local section free of charge.

PROJECT SEED CONTINUED TO PROVIDE LEARNING OPPORTUNITIES FOR DISADVANTAGED STUDENTS

- A grant from ACS Corporation Associates enabled the Office of High School Chemistry to produce the User's Guide, to advertise the product to high school chemistry teachers, and to send one copy of the package to each local section free of charge.
- Four issues of *Chem Matters*, the magazine for high

1992 Highlights

THE VIDEO, PEOPLE WHO THINK CHEMISTRY, THAT'S WHO, HIGHLIGHTS CAREERS IN CHEMISTRY.

school chemistry, were published, highlighting topics such as asbestos, perfume, camping stoves, wastewater, nicotine patches, hot shirts, buckyballs, and salt.

- Minigrants were awarded to eight high school teacher members for the development of lessons in the application of science and technology to society.
- The second edition of *Chemistry in the Community* (ChemCom), the ACS high school chemistry course, was published. Since its initial publication, 145,806 copies of the first edition of ChemCom and 27,175 copies of the second edition have been sold. To date, the Education Division has trained 516 teachers in the use of ChemCom.

College Chemistry

- The ACS Board Task Force on Minorities in the Chemical Sciences prepared a study that was approved in principle by the Board. To implement a program in this area, task force members worked with the Board and ACS senior management to develop vehicles within governance and management that would enhance the Society's goal to attract and retain minorities in science and in ACS membership.
- Under a grant from the U.S. Department of Education's Minority Science Improvement Program (MSIP), the ACS is developing partnerships across the nation with predominantly minority colleges and universities, ACS local sections, and private and public workplaces. Through the partnership in Charlotte, NC, with Johnson C. Smith University, 70 precollege students, faculty, and parents visited the ACS to participate in hands-on science activities.
- Under the ACS-MSIP grant, faculty from predominantly minority colleges and universities received travel grants to attend the 12th Biennial Conference on Chemical Education.
- The Washington-based Minorities in Science and Technology Network, of which ACS is a founding partner, conducted a two-day career fair for more than 1000 junior high and high-school students in the metropolitan area.
- The Spring National Meeting marked the first time that an enhanced program was developed to meet the needs of undergraduates. The 2½ days of activities were organized by the SOCED Task Force on Undergraduate Programming at National Meetings and the ACS Student Affiliates program. More than 225 students preregistered for this successful program. One of the highlights was a Short Course on analytical chemistry in industry, sponsored by Procter & Gamble. IBM sponsored a symposium on polymers.
- The largest Student Affiliates research poster session was held in San Francisco at the Spring National Meeting in April; 113 undergraduates presented their research.
- The National Meeting in Washington launched the first attempt at undergraduate programming at a fall meeting. BASF and Monsanto helped sponsor two events of the 2½ days of activities. Almost 200 undergraduates participated in a graduate school fair featuring recruiters from 52 universities. Also for the first time, the Student Affiliates program worked in partnership with the National Organization for the Professional Advancement of Black Chemists and Chemical Engineers (NOBCChE) to host a hospitality center for undergraduates. The Howard University NOBCChE Student Chapter co-hosted the center, which served as home base for all undergraduates at the meeting.
- The 1992 Student Affiliates Faculty Advisor Invitational Workshop was dedicated to improving interactions between Student Affiliates and their local sections. The workshop report, "Growth Through Interaction," formed the basis for presentations to incoming local section chairs at the 1992–1993 officers conferences.
- Workshops for Student Affiliates faculty advisors were held at regional meetings around the country.
- The Canadian Society for Chemistry invited the Student Affiliates staff to its annual meeting to present a paper on the ACS undergraduate programs.
- The field test for the ACS chemistry textbook for nonscience majors, *Chemistry in Context*, was completed. The results were favorable, indicating a positive shift in students' attitudes toward chemistry issues in society. The faculty involved in the field test sites across the nation also rated the curriculum favorably in terms of holding student interest, conveying scientific information, and developing critical thinking skills. ACS and William C. Brown Publishers (WCB) entered into an agreement whereby WCB will publish *Chemistry in Context*. The textbook will be available to the commercial market by December 1993.

STUDENT AFFILIATES MET IN WASHINGTON TO DISCUSS HOW TO INCREASE STUDENT ATTENDANCE AT ACS NATIONAL MEETINGS.

- Two workshops organized by the Education Division were held at ACS regional meetings to provide career education information to high school and undergraduate faculty mentors.
- ACS helped place three chemistry faculty members at the National Science Foundation, where they served for the first time as

UNIVERSITY OF MINNESOTA

Twin Cities Campus

Department of Chemistry
Institute of Technology

Kolthoff and Smith Halls
207 Pleasant Street S.E.
Minneapolis, MN 55455-0431
USA
Fax: 612-626-7541

February 10, 1993

Dr. Alfred Bader
2961 North Shepard Avenue
Milwaukee, WI 53211

Dear Alfred:

I have received your letter of February 1, 1993, to Martha Turkes concerning your continued support of Project SEED. I am delighted that your generosity has initiated this new aspect of Project SEED. There is every indication that this second year program is an excellent success.

With best personal wishes, I am,

Sincerely yours,

Paul G. Gassman
Regents' Professor of Chemistry

/cml
cc: Professor Ernest Eliel
Ms. Martha K. Turkes

CAMPAIGN
FOR
CHEMISTRY

February 22, 1993

Dr. Alfred Bader
2961 N. Shepard Avenue
Milwaukee, WI 53211

Dear Dr. Bader:

This will acknowledge your payment of $50,000.00 received in our office on February 22, 1993 toward your pledge of $300,000.00 to the Campaign for Chemistry, designated to the Project SEED second year program.

On behalf of the Campaign, I would like to thank you very much for your support and participation.

Sincerely,

Jennifer H. D'Elia

Jennifer H. D'Elia
Director of Development

JHD/djp

Dr. Alfred Bader
2961 North Shepard Avenue
Milwaukee, Wisconsin 53211

March 15, 1993

Professor Ernest L. Eliel
Department of Chemistry CB #3290
University of North Carolina
Chapel Hill, North Carolina 27599 3290

Dear Ernest:

Thank you for your gracious letter of March 9th.

Next week, weather allowing, I plan to give a series of talks on Loschmidt at A.C.S. meetings from Atlanta to Columbia, South Carolina.

Although we cannot go to Denver, I look forward to seeing you at the Chicago A.C.S. meeting where I have been invited to speak on Project SEED and will also talk about Loschmidt.

There will be real festivities remembering Loschmidt's death in the summer of 1995 in Vienna, and I do hope that you will be able to attend, and perhaps even talk about the connection between your and his work.

Fond regards.

As always,

American Chemical Society

OFFICE OF THE PRESIDENT

Ernest L. Eliel
President-Elect, 1991
President, 1992
Immediate Past President, 1993

Department of Chemistry CB #3290
University of North Carolina
Chapel Hill, NC 27599-3290
Phone (919) 962-6198
Fax (919) 962-2388

March 9, 1993

Dr. Alfred Bader
2961 North Shepard Avenue
Milwaukee, WI 53211

Dear Alfred:

I have read your article about Kekulé and Loschmidt in Chemistry in Britain with much interest; I had no inkling of this story, though, ever since a conversation I had with Vlado Prelog in 1967, I have not had a very positive impression of Kekulé as a human being.

I am all poised to present the Alfred Bader Award in Denver on March 30 but would much rather see you do it. Won't you change your mind?

Warmest regards.

Sincerely yours,

Ernest L. Eliel

ELE/sp