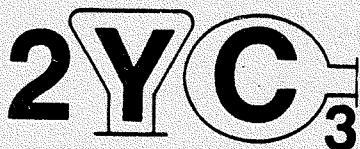


94

CHEMISTRY-THE CENTRAL SCIENCE



TWO YEAR COLLEGE CHEMISTRY CONFERENCE
DIVISION OF CHEMICAL EDUCATION
AMERICAN CHEMICAL SOCIETY

NOVEMBER 14 AND 15, 1986
SINCLAIR COMMUNITY COLLEGE
DAYTON, OHIO

AGENDA

Committee on Chemistry in the Two-Year Colleges

Friday, November 14, 1986

General Meeting, Atrium Building 4, Sinclair Community College

- I. Introductions
- II. Approval of the minutes from the Greenville meeting
Executive meeting minutes, page 5
Open meeting minutes, page 11
- III. Reports
 - A. Chair--Dick Gaglione
 - B. Greenville meeting
 - C. Dayton meeting
 - D. Denver meeting
 - E. Membership--Mike Knoll
 - F. Treasurer--John Clevenger (page 19)
 - G. College Sponsors--John Clevenger (page 20)
 - H. Industrial Sponsors--Elliott Greenberg (page 25)
 - I. Meeting sites--Edith Bartley (page 31)
 - J. Programs and workshops--Dick Gaglione
 - K. ACS Two-Year Colleges Program--Jim Bradford (pages 41 through 49)
- IV. Old business
- V. Good and welfare
- VI. Information items (pages 35 through 49)

94TH 2YC3

SINCLAIR COMMUNITY COLLEGE
DAYTON, OHIO 45402

NOVEMBER 14-15 1986

PROGRAM THEME - CHEMISTRY-THE CENTRAL SCIENCE

The trend in society and education is to put chemistry on the back burner. New developments (many generated by chemists) have led to new fields which now compete for society's limelight. In education, chemistry is being displaced from program requirements in engineering and health fields and replaced with courses within their own discipline.

While other 2YC3 conferences have had chemists look at how chemistry is applied to other fields, **CHEMISTRY - THE CENTRAL SCIENCE** will have professionals in other fields look at how they use chemistry in their discipline. Perhaps we can gain insight into how we can make our chemistry curriculum more attractive. Not only is chemistry central, but chemistry is also essential.

PROGRAM CHAIR - Richard Jones, Sinclair Community College, Dayton, OH 45402, (513) 226-7907

LOCAL ARRANGEMENTS - Roger Penn (Dayton), Sinclair Community College, Dayton, OH 45402, (513) 226-2556 -- Noel Farrier (SCC), Sinclair Community College, Dayton, OH 45402, (513) 226-3058

LOCAL INDUSTRIAL SPONSOR COORDINATOR - James Johnson, Sinclair Community College, Dayton, OH 45402, (513) 226-2557

PUBLIC RELATIONS - Sam Ikharebha, Sinclair Community College, Dayton, OH 45402, (513) 226-7952

FRIDAY, NOVEMBER 14, 1986

- 9:00 - 12:00 REGISTRATION, EXHIBITS, COFFEE & ROLLS
Atrium Building 4 - Sinclair Community College
- 9:30 - 10:30 COMMITTEE ON CHEMISTRY IN THE TWO-YEAR COLLEGE
This meeting is open to all interested persons.
- 10:45 - 11:00 OPENING: Onofrio Gaglione, New York City Technical College and 1986 Chairperson 2YC3
WELCOME: Dr. Ned Sifferlen, Vice President for Instruction, Sinclair Community College
INTRODUCTION TO PROGRAM: Dr. Richard Jones, Sinclair Community College

- 11:00 - 12:00 KEYNOTE ADDRESS: "Microencapsulation," Dr. Joe Bakan
Laboratory Director, Eurand America, Dayton, OH
- 12:00 - 1:30 LUNCH -- EXHIBITS (on your own-see list of restaurants)
- SYMPOSIUM ON CHEMISTRY IN THE HEALTH FIELD
(Dr. Noel Farrier, Sinclair Community College
presiding)
- 1:40 - 2:25 "CHELATION THERAPY," David G. Goldberg, D.O.,
Practicing physician, Dayton, OH
- 2:30 - 3:15 "PULMONARY HYPERSENSITIVITY," Dr. Peter Thorne,
Graduate School of Public Health, University of
Pittsburgh
- 3:15 - 3:45 COFFEE BREAK -- EXHIBITS, Atrium Building 4
- 3:45 - 4:30 "CHEMISTS, CROOKS, AND KILLERS: THE ROLE OF THE
SCIENTIST IN THE CRIMINAL JUSTICE SYSTEM,"
Bill Dean, Criminalist, Hamilton County Coroner,
Cincinnati, OH
- 5:30 - 7:30 SOCIAL EVENTS AT RAMADA INN (Dr. Roger Penn, Sinclair
Community College presiding)
- 5:30 - 6:30 SOCIAL HOUR, Ramada Inn, Downtown Dayton, Banquet Room
- 6:30 - 7:30 BANQUET, Ramada Inn, Downtown Dayton, Banquet Room
- 7:30 - 8:30 BANQUET ADDRESS, Ramada Inn, Downtown Dayton, Banquet
Room, FISHER ART COLLECTION, John Tavlik,
Fisher Scientific, Pittsburgh, PA

SATURDAY, NOVEMBER 15, 1986

- SYMPOSIUM ON CHEMISTRY IN THE ENGINEERING FIELDS
(Jim Johnson, Sinclair Community College
presiding)
- 8:30 - 12:00 REGISTRATION, EXHIBITS, COFFEE & ROLLS
- 9:00 - 9:10 ANNOUNCEMENTS, OPENING REMARKS
- 9:10 - 9:55 "COMPOSITES, PAST, PRESENT, AND FUTURE," Ray Cull,
Chemical Engineer, Dow Corning, Midland, MI
- 10:00 - 10:45 "THE PLACE OF ORGANIC CHEMISTRY IN THE LIBERAL ARTS AND
PROFESSIONAL CURRICULUM," Dr. Sehan N. Ege,
Department of Chemistry, University of Michigan
- 10:45 - 11:15 COFFEE BREAK -- EXHIBITS, Atrium Building 4

- 11:15 - 12:00 "ENVIRONMENTAL CHEMISTRY," Dr. Maurice A, Shapiro,
Department of Environmental Science, University
of Pittsburgh
- 12:00 - 1:30 LUNCH (on your own-see list of downtown restaurants)
- SYMPOSIUM ON INTERESTING CHEMISTRY TEACHING TECHNIQUES
(Sam Ikharebha, Sinclair Community College
presiding)
- 1:30 - 1:40 ANNOUNCEMENTS, OPENING REMARKS
- 1:40 - 2:25 "FIVE THINGS EVERYONE SHOULD KNOW ABOUT CHEMISTRY,"
John Hill, Chemistry Department, University of
Wisconsin, River Falls
- 2:30 - 3:15 "THE VALIDITY OF HUMOR IN EDUCATION," Paul Grotz,
Chemistry Department, University of Wisconsin,
Waukesha
- 3:20 - 4:30 "PHILOSOPHY OF CHEMICAL DEMONSTRATIONS,"
George Gilbert, Chemistry Department, Dennison
University

MINUTES OF THE GREENVILLE MEETINGS

2YC3 Executive Committee Meeting
Greenville Technical College
Greenville, SC
Thursday, October 16, 1986

Present: Edith Bartley Elliott Greenberg
 Jim Bradford Cecil Hammonds
 Ralph A. Burns Ethelreda Laughlin
 John Clevenger Paul Santiago
 Alan Day Kathy Weissmann
 Curt Dhonau
 Dick Gaglione

Dick Gaglione, chair, opened the meeting at 7:30 P.M. He asked if there were any additions or corrections of the minutes of the executive committee meeting in Palatine, Illinois.

Edith Bartley said that the 99th and 100th meetings were omitted in the list of future meeting sites. The 99th conference will be held at American River College in the spring of 1988 and the 100th will be in conjunction with the national ACS in Toronto.

Palatine meeting:

Dick said that he had sent commendations to the chairperson of the Palatine meeting and also to the president of the college. 228 attended the conference which had a balance in hand of more than \$1,000.

Bozeman meeting:

More than 100 two-year college people attended the conference. The 2YC3 program was integrated in the schedule. This, said Dick, was an improvement over Storrs. The audience was made up of high school and four-year college faculty as well as the 2YC3 members. Ed Heath was complimented for his work as well as the president of his college. Ed did an excellent job in selecting speakers. Leo Kling, in charge of exhibits, also did a great job.

ACS National meeting at Anaheim:

Dick gave an interim report to the Division of Chemical Education. Dick also attended the DivChed banquet. He reported that the 2YC3 symposium was excellent but the attendance was poor. Kathy Weissmann suggested that the papers be reported at another meeting. Elliott seconded the motion.

Announcements:

Jim Bradford said that "Critical Issues in Two-Year Colleges" has been published. Jim distributed copies at the meeting.

A notice from John Moore (DivChed) gave guidelines for travel in

the Division. Copies will be distributed and there will be a discussion at the next executive meeting.

A mailing from Truman Schwartz pointed out that some members of the executive committee are not DivChed members. The yearly dues to DivChed are \$6.00 per year. It was also noted that not all executive committee members have paid their 2YC3 dues.

Edith Bartley said that Ed Heath asked if the Bozeman meeting would count as a 2YC3 committee meeting. He wants to count the Bozeman session as one of the two meetings that committee members are supposed to attend.

Curt Dhonau asked if membership in DivChed is required in our Policies and Procedures. Dick said that he was not certain.

Cecil pointed out that, since the 2YC3 is a committee of the Division, membership in DivChed is already a requirement for committee members.

Dick noted that his interim report is printed on page 13 of the conference bulletin distributed by Jim Bradford.

Future Meeting Sites:

Edith Bartley reviewed what is planned for future meetings. North Lake Community College is a probable site for the 104th session.

Ralph Burns noted that the minutes of the Palatine meeting stated that the 103rd meeting will be in Dallas. Dick noted the correction.

John Clevenger received a letter from Martin van Dyke and feels that Martin needs help in structuring the meeting in Colorado. Also, suggestions for possible speakers are requested.

Membership:

Curt Dhonau reported for Mike Knoll. The information that Mike conveyed is reported on page 25 of the agenda book. Total membership is now 630.

Industrial sponsors:

Of the industrial sponsors listed on pages 33-35 in the agenda book, 22 are fully paid, 4 have not renewed and 6 were sent a second billing. Some of the publishing companies are sending one corporate membership instead of several local memberships in the past.

College sponsors: John Clevenger reported that membership is

down by fifteen. The list of college sponsors will be distributed at the conference. John suggested showing the list when speaking to attendees and saying, "Is your college a sponsor?" Membership forms were also distributed.

Policies and Procedures: The deadline for nominees for Chair-elect is October 24th. Dick asked that ballots be sent to him rather than to the secretary since her term of office will be over at the end of the year.

Dick suggested running an ad asking for inquiries about the industrial sponsor chair since the position will be open in at the end of next year.

Reappointment of members:

Letters have been sent to Ethel and to former chairs no longer on the executive committee requesting them to be committee members.

A call was made for names of possible committee appointments to the southern region. Jody transferred from the southern to the western region.

Task Force:

Jim Bradford announced that The Distillate mailings have increased from 3600 to 4200.

The Guidelines of the Task Force are to be tested in at least six colleges and possibly as many as ten colleges. Copies of the Guidelines may be available for the Dayton meeting. One section is still to be written.

The categories of schools to be tested are
Chem. tech. using traditional programs
Chem. tech. using modern programs
Rural or isolated colleges
Urban colleges
Suburban colleges
Two-year programs in four-year schools
Private minority colleges
Public minority colleges

Budget:

Dick asked if there were any questions. John said that funds will be kept in CD's. John, Dick and Edith will work on the budget and submit it at the Dayton meeting.

Kathy suggested that a request be sent to the Division for \$2000 for next year with a thank you for the funding for 1986.

There was a discussion about the \$500 allocation for biennials. Since there will be none next year should the money be used for Toronto?

Should Edith be sent to the New Orleans meeting?

Curt suggested using the travel fund for the secretary/editor position for travel of the chair to national meetings.

Kathy pointed out the recommendation of the task force to collaborate with other disciplines. Bill Mooney has funds to meet with other disciplines in Washington from SOCED.

The meeting adjourned at 9:30 PM.

Ethelreda Laughlin
Secretary

OPEN COMMITTEE MEETING
Greenville Technical College
Greenville, SC
Friday, October 17, 1986
9:50 AM

Attendees:

Paula Ballard	Jefferson State Jr. Col., Charleston, SC
Anne Barber	Manatee CC, Bradenton, FL 33505
Edith Bartley	Tarrant Co. Comm. College, Ft. Worth
Alex Bell	Trident Tech. Coll., Charleston, SC
Cheryl Blallowell	Brevard Coll., Brevard, NC
Jim Bradford	ACS, 1155 16th St., NW, Wasington, DC
Ralph Burns	St. Louis CC -Meramec, St. Louis, MO
Wade Cain	Morehead State U., Morehead, KY
Jody Chave	Truckee Meadows CC, Reno, NV
John V. Clevenger	Truckee Meadows CC, Reno, NV
Robert Collins	Va. Highlands CC, Abingdon, VA 24210
Curt Dhonau	Vincennes Univ., Vincennes, IN
Charles Earl	Anderson Coll., Anderson, SC
Dick Gaglione	NYC Tech. College, Brooklyn, NY
James Graham	Calhoun Comm. Coll., Decatur, AL 35602
Elliott Greenberg	Prairie State Coll., Chicago Hts., IL
Cecil Hammonds	Penn Valley Coll., Kansas City, MO
Samuel Ikharebha	Sinclair Comm. Coll., Dayton, OH
James Johnson	" " " " "
Richard Jones	" " " " "
Leo Kling III	Tri County Tech. Coll, Pendleton, SC
Ethelreda Laughlin	Parma, OH
Mary C. Lu	Walters State C.C., Morristown, TN
Garry McGlaun	Gainesville Jr. Coll., Gainesville, GA
Paul J. Santiago	Harford CC, Bel Air, MD
Elizabeth Singleton	Houston Comm. Coll.
Dotty Stumpf	Middlesex Comm Coll., Bedford, MA

Dick Gaglione, 2YC3 Chair, opened the meeting. H explained the place of the 2YC3 in The Division of Chemical Education. He referred to pages 53-59 of the Agenda Book for the make-up of the executive committee and the regional committee members.

Dick asked each of the attendees to introduce himself. He asked the conferees to turn to page 5 of the Agenda Book, minutes of the Palatine Open Meeting and asked if there were any corrections or additions. Elliott Greenberg moved to accept the minutes as presented.

Dick reported about past meetings: The gala celebration in Palatine to celebrate the 25th anniversary of the 2YC3; co-

P
sponsorship of the biennial conference in Bozeman with 100-200 two-year college faculty in attendance and the two-year meeting integrated with other groups. He said that Ed Heath did a great job and that Ed Kling got the 2YOC3 message across.

Dick reported the 25th anniversary symposium at Anaheim where the attendance was not great. The timing of the fall ACS meeting is bad for two-year colleges. John Clevenger gave a report of the future of the 2YOC3 at that meeting.

The 2YOC3 was also active in the Task Force. The list of members of the Task Force appears in the Agenda Book.

We are striving, Dick said, to increase membership as a celebration of the 25th anniversary and because so many good things are happening in two-year colleges. The Distillate will publish the experimental copy of the guidelines - ideal timing for the membership drive.

There is a call for nominations in the newsletter. There will be a new chair-elect by the Denver meeting. Ballots will be opened in Denver in April.

Also notice that the Industrial Chair term will be ending next year. Send a note to Jay Bardole for inquiries. Jay will send a copy of the job description.

Dick said he has to present an annual report by the end of 1986.

Reports:

Chicago meeting: There were about 20 exhibitors. The meeting was a huge success. Credit goes to Bill Mooney, program chair, Joseph Bauer, local arrangements, and Duane Sell, Industrial Sponsor chair.

Dayton meeting: Richard Jones reported that speakers will be from professions that use chemistry. He brought along program and registration forms for the session.

Greenville meeting: Leo Kling said that everything will go as planned. He asked that Alan Day, local arrangements chair, be contacted if any help is needed.

Membership: See page 25 of the Agenda Book.

Treasurers report: John Clevenger referred to the report on page 27. There is one error. The report is from Jan. 1, 1986, not 9/30/86.

John pointed out that some money sources are decreasing since

interest rates are dropping and both college and industrial sponsors have decreased.

Also, some colleges are not picking up the tab for the expenses of duplicating and mailing and those expenses will increase.

Industrial Sponsors: Elliott Greenberg, Industrial Sponsor Chair, asked that members visit the exhibits. He said that VWR and Fisher Scientific have not renewed sponsorships and asked that members do some campaigning when the company reps visit labs at the colleges.

Secretary: no report.

Meeting sites: Edith Bartley referred to page 39 of the Agenda Book. She reviewed tentative plans and said that the 104th conference will probably be at North Lake, Irving, CA. No site has been selected for the 105th. The 106th will be somewhere in the midwest.

Jim Bradford: Jim referred to the letter from Myron Atkin on page 47 of the Agenda Book and the inclusion of two-year colleges.

Jim Bradford also said that the experimental version of the guidelines for two-year colleges is ready for a pilot project. It will be tested in at least six, and possibly 10-12 colleges. The colleges will volunteer to upgrade their programs according to the guidelines.

A grant has been given by the Department of Education to send consultants to minority colleges.

New business: The executive committee is in the process of re-appointing regional committee members.

Ed Heath and Dick Gaglione have been appointed to the ACS Examination Committee.

Ethel Laughlin's term as secretary/editor will expire at the end of the year. She has not asked for reappointment. Dick Gaglione thanked Ethel for the work she has done for the organization.

Dick also recognized Curt Dhonau and Cecil Hammonds, past chairs, and announced that their terms on the executive committee have expired but that he is asking them to serve as regional committee members.

The meeting adjourned at 11:00 AM.

Ethelreda Laughlin, Secretary

REPORTS

TREASURER

COLLEGE SPONSORS

INDUSTRIAL SPONSORS

October 27, 1986
 FINANCIAL REPORT FOR COCTYC
 From: 1/1/86 To: 10/27/86

Credits

Balance forward		\$ 10720.27
College Sponsors		1150.00
Industrial Sponsors		3075.00
Individual Membership		1716.00
DIVCHED		2000.00
Interest		1215.57
C.D.'s	653.79	
Checking	561.78	
Meetings & Misc.		848.35
Reno	10.00	
Valhalla	50.00	
Bozeman booth	788.35	
		\$ 21513.54

Debits

Travel		\$ 4953.04
Chair	1797.52	
Chair-Elect	329.40	
Past Chair	438.40	
Secretary	702.36	
Membership	335.36	
Treasurer	850.00	
Taskforce Mem.	500.00	
Office Supplies		49.90
Postage		98.34
Printing		329.61
Phone		36.85
Meetings & Misc.		1066.71
Valhalla	144.16	
Bozeman booth	922.55	
		\$ 6534.45

Balance \$ 14979.09

COLLEGE SPONSORS

We had 102 college sponsors for 1986. Renewal notices have been sent out for 1987. So far, 35 colleges have sent renewals for 1987.

John V. Clevenger

 John V. Clevenger
 Treasurer/College Sponsors

COLLEGE SPONSORS 1986

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Mr. W. H. Team
Amarillo College
P.O. Box 447
Amarillo TX 79178

Mrs. Deborah M. Reeder
Anne Arundel Community College
101 College Parkway
Arnold MD 21012

Mr. Jack Surendranath
Bellevue Community College
3000 Landerholm Circle SE
Bellevue WA 98007

Dr. Ken Tosa
Brazosport College
500 College Drive
Lake Johnson TX 77566

Katherine E. Weissman
C. S. Mott Community College
1401 E. Court St.
Flint MI 48502

Mr. William Komarecky
Cauage Community College
Franklin Street
Aurora NY 13021

Sr. Mary Erwin Musiakamo
Ancilla Dental College
Donalson IN 46513

Mr. Robert Ingram
Arizona Western College
P.O. Box 929
Yuma AZ 85364

Mr. Laurence G. Ludwig
Black Hawk College
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Dr. Vincent Sellimo
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Mr. Rober Brasile
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Dr. Rex Widener
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3

4

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COLLEGE SPONSORS 1986

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Mr. Roland D. Hale
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Mr. Garrison Lewis
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Mr. Wes Fritz
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SCHOOL OF EDUCATION
Office of the Dean

June 25, 1986

Dr. Bassam Z. Shakhashiri
Assistant Director
Science and Engineering Education
National Science Foundation
Washington, D.C. 20550

Dear Bassam:

I write to transmit some of the results of the meeting of the Science and Engineering Education Advisory Committee that was held on 23 and 24 June 1986. First, however, let me state that the Committee was deeply impressed with the progress that has been made during the last two years in developing and inaugurating sound programs in each of the units. The level of Directorate activity and its quality are particularly heartening to those of us who have had occasion to observe science education activities at NSF over a period of several decades. I served on the Advisory Committee from 1973 to 1976, then again since 1984. I also was a principal investigator for six years in the early 1960s. Not for twenty-five years has there been such a fresh sense of commitment to addressing the many serious problems that beset science education in this country, nor have we seen until now the emergence of so carefully crafted a strategy for addressing those problems. Your leadership is evident, and the Committee is gratified to learn that you have consented to remain at the Foundation for at least another year. The Committee was moved to cast its sentiments in a formal resolution that was framed initially by Gerald Holton and James Ebert, then passed unanimously. Please see Attachment 1.

Let me proceed with a report of the additional formal actions taken by the Committee:

1. There was considerable discussion of the Neal Report (NSB 86-100) and its ramifications. The Committee welcomed the prospect of increased attention by the NSF to problems at this instructional level. We believe that the most successful approaches to the improvement of undergraduate education in science, mathematics, and engineering will come from a high degree of collaboration between the research directorates and SEE. At the same time, we believe that responsibility for stimulation and coordination of activities in undergraduate education must reside in one place that is clearly accountable. SEE should be the NSF center for activities designed to improve undergraduate science education. A motion to this effect was passed by the Advisory Committee, without dissent. See Attachment 2.

2. The Committee received the External Peer Oversight Reports for three programs: Graduate/Minority Fellowships, Informal Science Education, and Research in Teaching and Learning. See Attachments 3, 4, and 5. The Committee was appreciative of the thoroughness of the reviews and pleased by the fact that they were

favorable. Staff in these programs are to be complimented. Additionally, the Committee chose to go on record as favoring expansion of the graduate fellowship program. See Attachment

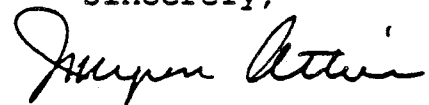
3. There was also discussion of possible support for programs that would enable high school students to participate in science and mathematics activities in universities and industry. Such programs require capable mentors as well as other critical factors for success, and the Committee was not prepared to suggest the precise details of such an initiative. It did express the view that SEE explore the possibility of instituting such a program.

4. Finally, the Committee recommends that eligibility for the college science instrumentation program be extended to include two-year colleges and undergraduate programs at doctorate-granting universities. Instrumentation needs at such institutions are pronounced, as is the need for sound approaches to curriculum development. Undergraduate instructional approaches at research universities are sometimes emulated at other colleges; significant numbers of "mainline" students attend two-year colleges.

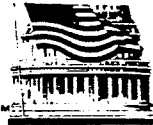
Please let me know if you need further detail in writing about the meeting. As you know from the agenda (and your presence throughout), the Committee discussed several additional topics, particularly budget and strategic planning. In this connection, the Committee places great weight on the importance of expanding Directorate activities, and we hope such a priority is reflected in the FY 88 budget request.

One final point: It seems clear that National Science Board interest in science education is growing rapidly; the Directorate is also searching for ways to enhance the presence and influence of NSF in science education. I am sure I speak for all members of the Committee when I affirm our willingness to assist in any way we can in articulating an appropriate and sound policy for science education for the Foundation. In fact, it was suggested that some of us should meet with the Director and with appropriate Board members for a more informal discussion of key issues that we usually find time for. This is an unusually formative and critical period for the Foundation in science education. It is important that all of us charged with the responsibility for advising on or setting policy have opportunities for whatever exchange of views is necessary for the establishment of approaches that best serve the nation and at the same time reflect favorably on the National Science Foundation.

Sincerely,



J. Myron Atkin
Dean



June 24, 1986 - No. 197

VETO THREATENED. As this newsletter went to press, the White House was threatening a veto of the FY '86 Emergency Supplemental Appropriation -- just completed by House-Senate conferees -- which would put another \$146 million into Pell Grants for the coming academic year (see story p. 3). Also at press time, the Packwood tax reform bill appeared on the verge of Senate passage, after the Mitchell amendment to add a 35% top rate was rejected 71-29.

* **SCIENCE FUNDING.** The House report on the bill that resanctions the National Science Foundation for FY '87 has included language that bluntly "directs the Foundation to extend the eligibility for CSIP grants to include two-year and community colleges." The author is Rep. Doug Walgren, D-PA, Chairman of the House Subcommittee on Science, Research and Technology.

The bill, H.R. 4184, is awaiting a Rules Committee vote that could send it to the House floor before the July 4 recess. The Senate version, S. 2184, has cleared markup in the Labor and Human Resources Committee and is expected on the Senate floor after the July 4 recess. Both H.R. 4184 and S. 2184 shift an additional \$4 million into undergrad instrumentation.

The House report recognizes that increased support of undergraduate instructional scientific equipment and expansion of the NSF College Science Instrumentation Program (CSIP) is "the number one priority" of the recent American Council on Education report, "Towards a National Policy for Undergraduate Science Education: with the Recommendations of the National Higher Education Associations' Task Force." The House report (99-619) goes on to emphasize:

The Committee wishes to express its dual intent that the Foundation offer opportunities for instrumentation improvement to both two-year and community colleges as well as four-year undergraduate institutions. Since both these entities served the majority of undergraduate students they hold the greatest potential for educating future scientists and engineers. The Committee believes that a strong College Science Instrumentation Program should be open to as many institutions as possible in light of the continually aging and deteriorating condition of instructional instrumentation in the nation's postsecondary institutions.

H.R. 3700/S. 1965. Sen. Orrin Hatch, D-UT, Chairman of the Labor and Human Resources Committee, has signalled his intent to chair the Senate conferees who will adjust differences with the House on the new Higher Education Act. House and Senate conferees are not likely to meet until their respective committee staffs have completed and published a detailed and voluminous comparison of H.R. 3700 and H.R. 1965 -- which should be ready when Congress returns from its July 4 recess.

Community colleges have joined the larger higher education community in preparing detailed comparative comments for the conferees. Some of these "consensus"

(continued on p. 2)

Opportunity With Excellence

NATIONAL CENTER FOR HIGHER EDUCATION

ONE DUPONT CIRCLE, N.W. SUITE 410, WASHINGTON, D.C. 20036

April 10, 1986

CALL TO CONSCIENCE. A statement that college leaders visiting Congress last week issued as a "call to conscience" is swarming with cosigners across the land. Assembled to make a series of visits to House and Senate leaders to ask that the federal partnership in education be stabilized as a budget priority, the group elected to make the "call to conscience" their written battlecry. It states in part: "It is time that we remind the nation that education is fundamental to the quality of life in our democratic society, as well as to our economic security and our national defense. It is time to bring education back to the forefront of our national priorities."

Pennsylvania university and college presidents as a group already have endorsed the statement. Blocks of cosigners are forming in other States. Community college leaders among the original cosigners included Sandra Featherman, Chairman of the Board, Community College of Philadelphia; Philip Gannon, President of Lansing (MI) Community College, and Michael Blouin, Executive Director of the Kirkwood Community College (IA) Foundation.

By Mr. DOLE for Mrs. HAWKINS:
S. 2282. A bill to establish a national advanced technician training program utilizing the Nation's eligible colleges to expand and improve the supply of technicians required by industry and national security in strategic, advanced, and emerging technology in order to increase the productivity of the Nation's industries; to contribute to the self-sufficiency of competitiveness of the United States in international trade, and for other purposes; to the Committee on Labor and Human Resources.

NATIONAL ADVANCED TECHNICIAN TRAINING ACT
● Mrs. HAWKINS. Mr. President, the American economy and the American work force today face global chal-

lenges of unprecedented scale. The key to meeting these challenges lies in large measure in skill training, in expanding the pool of technicians employed at the cutting edge of new and changing industrial technology. The legislation I introduce today, the National Advanced Technician Training Act, addresses this need.

The essence of this bill, Mr. President, is partnerships. Community and technical colleges already have gone further than any other segment of higher education in building programs tailored to the needs of employers and the private sector.

Yet the employer community is just one of many populations knocking at the community college doors. The community colleges serve larger minority populations than any other segment of higher education. Almost 45 percent of the total black community in higher education is attending community colleges; 70 percent of the Hispanic community is tackling its college dreams through community colleges. The community colleges also are serving a more recent phenomenon in higher education—the so-called reverse transfers. In the State of Washington, among others, the students moving from senior institutions back to community colleges, in order to satisfy the demands of the workplace, are greater in number than the enrollments transferring from the community colleges into the universities and senior colleges.

Growing numbers of adults who already hold higher college degrees—BA's through Ph.D.'s—are using the community colleges to meet the changing skill needs of their careers. For reasons of convenience and economy, the community colleges are the colleges of choice of the innumerable single parents and displaced homemakers who are striving to gain new or better employment. Such diverse demands from the community are putting a severe strain on the budgets of most community colleges. They simply lack the budgetary resources to increase their outreach to employers, and to instigate the courses that will more fully serve the accelerating changes of the workplace. With the seed support that my bill proposes, Mr. President, the partnerships between industry and community colleges that address the emerging priorities of high technology can be encouraged and expanded far beyond their present scope.

In the emerging workplace, Mr. President, virtually all occupations—from auto mechanic, draft and design technician, and machinist to nurse and secretary—require the worker to be prepared in the competencies of high technology. For the nurse and medical technician, it means working with electronically controlled life support systems and exotic lifesaving pharmaceuticals. For the draftsman it means working with computer-aided design,

and for the secretary and accountant it means working with word processors and automated ledgers. For the auto mechanic it means working with sophisticated electronic diagnostic equipment, and for the machinist, working with numerical control equipment. Advanced technology is invading almost every worksite, work station and occupation imaginable.

High technology is becoming equally pervasive to the home—sweetening domestic life with everything from food processors and word processors to solar heat.

Some of my colleagues have raised the question, as to why the bill puts the program in the National Science Foundation. There are several reasons, Mr. President.

Perhaps paramount is the simple fact that the National Science Foundation virtually ignores the largest segment of higher education, which is the community colleges. I regard this as a serious breach of the national interest. I see no justification whatsoever for the NSF's thinking that the only stream of talent it needs to keep our country at the forefront of global competition in science and technology comes from the engineering schools and graduate schools of the 90 or so largest research universities.

The NSF has grown topheavy in its preoccupation with graduate and post-graduate work, at the expense of undergraduate science and mathematics. It should be giving much stronger leadership to the needs of undergraduate education, and especially to the community colleges, where more than half the Americans now starting college enroll.

As another reason, the technician training that goes on between industry and the community colleges offers a promising but untapped environment for enhancing American leadership in applied science and applied technology. With seed support from NSF, these partnerships can be used to much greater advantage in strengthening postsecondary instruction in both math and science. Tens of thousands of very bright students are gaining hands-on opportunities to test their inventiveness and their higher aptitudes for math and science, through the community college courses they are taking with industrial laboratories and high-technological employers. Given the proper encouragement and opportunity, many such students will be strong candidates for upper-level courses and eventual graduate work serving the national interest in science and engineering.

As you will note, my bill calls for the establishment of an Office of Applied Technology at NSF, to administer the grant program the bill would establish.

Beyond the grant program, there are at least two important national purposes that could be served by such an office. The NSF should be staffed to work with the Labor Department on

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long-term projections of the skill base the Nation must have to remain in the forefront of global economic, scientific and technological competition, and this office could serve this function.

It could also provide the leadership on technology transfer that is so badly needed within the Government. Vast amounts of innovation that potentially could enhance American leadership in industry, science and technology are simply dying on the shelves of Federal laboratories, in such diverse Departments as Defense, Education, Energy, and Agriculture, because there is no cohesive Federal strategy for moving the unclassified innovations off the shelves and into the hands of potential users in both the private and public sectors. NSF could be designing and leading such a strategy through this office.

In short, Mr. President, enactment of NATTA would be a major step toward reskilling the American work force to keep our industry and our economy at the forefront of both global competition and applied technology, a step as well toward more employment and greater national productivity.

Mr. President, I ask unanimous consent that the text of the bill and a bill analysis be printed in the Record.

There being no objection, the material was ordered to be printed in the Record, as follows:

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "National Advanced Technician Training Act".

STATEMENT OF FINDINGS

Sec. 2. The Congress finds that—

(1) both industry and national security are hampered by shortages of highly skilled technicians to produce, operate, and service highly technical equipment, systems, and processes;

(2) growing numbers of dislocated workers and unemployed youth and adults lack the training to meet the emerging skill needs of industry and the information age;

(3) the United States has become increasingly dependent upon foreign producers for the advanced-technology systems that feed reindustrialization and economic growth; and

(4) a national advanced technician training program will give men and women from all backgrounds more opportunities to pursue training and education programs leading to an associate degree or technical certificate or otherwise to upgrade their competence consistent with the emerging needs of business, industry, and national security.

PURPOSE

Sec. 3. It is the purpose of this Act to increase the productivity of the industries of the Nation, improve the competitiveness of the United States in international trade, and prepare technicians and skilled craftsmen by establishing a national advanced technician training program in the Nation's community and associate-degree granting institutions, with matching non-Federal funds.

NATIONAL ADVANCED TECHNICIAN TRAINING PROGRAM

Sec. 4. (a)(1) The Director of the National Science Foundation shall, in accordance

with the provisions of this Act, carry out a three-year advanced technician training program under which eligible colleges will provide training to meet skill needs in strategic, advanced, and emerging technology.

(2) Such program shall include, where feasible, on-the-job training with technical occupational training and shall place special recruiting emphasis on attracting men and women whose skills require retraining or upgrading in order to retain their jobs, or who are unemployed, especially workers dislocated by plant closings and technological change, and individuals who have recently completed high school or who left high school prior to graduation.

(b)(1) In carrying out this Act, the Director shall—

(A) establish within the Directorate of Science, Technology, and International Education in the Foundation an Office of Applied Technology with responsibility both for monitoring the skill needs in emerging and strategic technical fields, and for conducting the grant program authorized by this Act;

(B) award grants on a competitive basis to eligible colleges which possess the demonstrated ability to provide competency-based occupational training to pay the Federal share of advanced technology training programs; and

(C) work with the eligible colleges and other institutions of higher education to establish and maintain, at the National Science Foundation a readily accessible inventory of advanced technician training programs which are serving public and private employers and addressing the changing workforce demands of emerging technology.

(2)(A) For the purpose of clause (B) of paragraph (1), the Federal share shall be 50 percent in each fiscal year.

(B) In carrying out clause (C) of paragraph (1), the Director may enter into contracts with such public and private agencies and organizations as may be necessary.

(C) No grant awarded to a college under this section in any fiscal year shall exceed \$50,000.

(c) Each eligible college awarded a grant under this section shall provide an associate-degree training program in designated advanced-technology occupational fields.

(d) The Director, in awarding grants under this section, shall give special considerations to training programs described in subsection (c) which—

(1) include flexibility in scheduling in order to accommodate working people and parents; and

(2) take steps to meet the adaptive and training needs of handicapped young people and adults.

(e) the Director shall prepare and submit to the Congress an annual report on the national advanced technician training program authorized by this Act, together with—

(1) an evaluation of the program;

(2) a catalog of the college programs identified by the required inventory;

(3) a recommendation on the feasibility of expanding the program; and

(4) such other recommendations, including recommendations for legislation, as the Director deems necessary.

(f)(1) In carrying out the duties under this section, the Director shall consult, cooperate, and coordinate with the programs and policies of the Department of Commerce and other relevant Federal agencies including the Department of Labor, the Department of Education, and the Department of Defense.

(2) In carrying out its functions under this Act, the Foundation shall have the same

power and authority it has under the National Science Foundation Act of 1950 to carry out its functions under that Act.

USE OF FUNDS

Sec. 5. Funds appropriated to carry out this Act shall be used to establish, strengthen, and expand the advanced technician training capabilities of eligible colleges, including—

(1) the development of associate degree and short-cycle training programs in advanced-technology occupations by two-year and four-year colleges, and by consortia of two-year and four-year colleges, with particular emphasis on model instructional programs to prepare and upgrade technicians and to retrain dislocated workers in state-of-the-art competencies in advanced-technology occupations;

(2) the development of special courses of instruction in advanced-technology fields for faculty and instructors, both full-time and part-time faculty and instructors;

(3) the development of instructional materials in support of advanced technical training programs in eligible colleges and the dissemination of such materials among such colleges;

(4) the development of cooperative advanced technician training programs with business, industry, labor, and government; and

(5) the purchase or lease of state-of-the-art instrumentation essential to training and education programs designed to prepare and upgrade technicians in new and emerging advanced-technology fields.

DEFINITIONS

Sec. 6. For the purpose of this Act—

(1) the term "advanced-technology" includes advanced technical activities such as the modernization, miniaturization, integration, and computerization of electronic, hydraulic, pneumatic, laser, nuclear, chemical, telecommunication, and other technological applications to enhance productivity improvements in manufacturing, communication, transportation, commercial, and similar economic and defense activities;

(2) the term "Director" means the Director of the National Science Foundation;

(3) the term "eligible college" means a junior or community college or other institution of higher education awarding an associate degree accredited under section 1201 of the Higher Education Act of 1965;

(4) the term "junior community college" has the same meaning given that term by section 322(4) of the Higher Education Act of 1965; and

(5) the term "institution of higher education" has the same meaning given that term by section 1201(a) of the Higher Education Act of 1965.

AUTHORIZATION OF APPROPRIATIONS

Sec. 7. There are authorized to be appropriated \$20,000,000 for the fiscal year 1986 and \$30,000,000 for each of the fiscal years 1987 and 1988, to carry out the provisions of this Act.

*
• The National Science Foundation's Division of Teacher Enhancement and Informal Science Education is accepting proposals on improving science and mathematic education for students at the junior high school and elementary level. Two-year colleges might be particularly interested in two programs: science and mathematics education networks, and informal science education.

The Science and Mathematics Education Networks program encourages the development of substantive local and regional resource-sharing networks and collaboration that may include, among other, teachers, schools, local and state education agencies, colleges and universities, business and industry, and cultural and professional organizations. The intent is to provide elementary and secondary teachers with access to more, better, and more innovative resources to support their teaching activities.

NSF requests 3 copies of a preliminary 5 page proposal from interested applicants. Preliminary inquiries may be submitted at any time; NSF will attempt to respond within 8 weeks of receipt of the initial proposal.

For more information, contact: Science and Mathematics Education Networks Program, Division of Teacher Enhancement and Informal Science Education, Directorate for Science and Engineering Education, National Science Foundation, Washington, DC 20550, 202/357-7078.

The goal of the Informal Science Education program is to provide greater and mutually reinforcing opportunities for the public to make use of the rich resources for scientific, mathematical, and technological learning that exist outside the formal educational systems. Particular emphasis is placed on projects involving museums, zoos, the communications media, local membership groups, public organizations, telecommunications, and women, minorities, and the physically handicapped.

Again, 3 copies of a preliminary proposal are requested. Formal proposals are reviewed 3 times a year; target dates for submitting full proposals are April 1, August 1, and December 1.

For more information, contact: Informal Science Education Program, Division of Teacher Enhancement and Informal Education, Director for Science and Engineering Education, National Science Foundation, Washington, DC 20550, 202/357-7076.

• Community colleges are having greater success with their proposals at the Fund for the Improvement of Postsecondary Education (FIPSE). As shown in the chart on the next page, significantly more two-year colleges were invited to submit full proposals to FIPSE in the latest round of funding than were invited to do so in 1985, even though fewer two-year school applied initially.

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95th CONFERENCE (IN CONJUNCTION WITH ACS NATIONAL)

4/3-4/87 - Arapahoe Community College, 5900 South Santa Fe Drive,
Littleton, CO 80120

Program Chair - Martin Van Dyke, Front Range Community College, North
Campus, 3645 W. 112th Ave., Westminster, CO 80030
(303) 466-8811

Local
Arrangements
Chair

- Al Grohe, Arapahoe Community College, (303) 707-5939

96th CONFERENCE

5/23-24/87 - Montgomery Community College, Rockville, MD 20850

Program Chair - Margot Schumm, Montgomery Com. College, (301) 279-5129

Local
Arrangements
Chair

- Alan Heyn, Montgomery Community College

97th CONFERENCE

10/16-17/87 - Southeast Community College, 8800 "O" St., Lincoln,
NE 68352

Program Chair - John Kenkel, Southeast Community College, (402) 471-3333

Local
Arrangements
Chair

- Don Mumm, Southeast Community College

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CHEMISTRY: A MOUNTAIN TOP EXPERIENCE



TWO YEAR COLLEGE CHEMISTRY CONFERENCE
DIVISION OF CHEMICAL EDUCATION
AMERICAN CHEMICAL SOCIETY

April 3 and 4, 1987
Arapahoe Community College
Littleton, Colorado