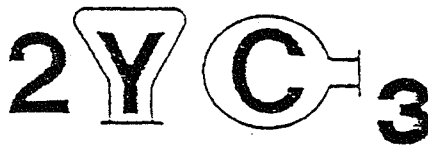


88

THE 88TH CONFERENCE

FRONTIERS IN CHEMISTRY



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

State Technical Institute at Memphis

Memphis, TN

October 11 and 12, 1985

**DIVISION OF CHEMICAL EDUCATION
AMERICAN CHEMICAL SOCIETY
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THE EIGHTY-EIGHTH TWO-YEAR COLLEGE CHEMISTRY CONFERENCE

October 11 - 12, 1985

State Technical Institute at Memphis
5983 Macon Cove, Memphis, TN 38134
(In Conjunction With The SE/SW ACS Regional Meeting)

CONFERENCE THEME: Frontiers in Chemistry

PROGRAM CO-CHAIRS: Paula Ballard, Jefferson State Junior College
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LOCAL INDUSTRIAL

SPONSOR COORDINATOR: William Singleton, State Technical Institute at Memphis
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Friday Morning, October 11, 1985

9:00 - 10:30	Committee on Chemistry in the Two-Year College Fulton Auditorium (F-400)
9:00 - 11:45	Registration and Exhibits Nabors Auditorium (N-102)
11:45 - 11:55	Opening: Jay Bardole, Chair 2YC, Fulton Auditorium (F-400)
	Welcome: Dr. Charles Temple, President of State Technical Institute of Memphis
11:55 - 12:00	Introduction to Program Paula Ballard, Program Co-Chair, Presiding
12:00 - 1:00	"Chemical Safety in the Laboratory" Michael Spiller, Technical Representative J.T. Baker Chemical Company
1:00 - 2:15	LUNCH/Exhibits (Nabors Auditorium, N-102)
2:15 - 3:15	"Materials Science Experiments With Space Lab" Harry Hertzler, Aerospace Education Consultant, NASA Headquarters, Washington, DC 20546
3:15 - 3:45	"Toxicology and Analytical Methods for Formaldehyde" Tom Pierce, University of North Alabama, Florence, AL 35632
3:45 - 4:15	Coffee/Exhibits Nabors Auditorium (N-102)
4:15 - 5:15	"Medical Applications of NMR" Fulton Auditorium (F-400) Raymond L. Blakely, M.D., Division of Biochemical and Clinical Pharmacology, St. Jude's Childrens Research Hospital, Memphis, TN 38101

- 5:45 - 7:00 Banquet: Seafood Buffet — Hungry Fisherman Restaurant
Non-seafood eaters, there are other food choices available.
- 7:00 - 8:00 Guest Speaker: Gary C. Wilkerson, Legal Director,
Schering-Plough Corporation
Topic: "Legal Liability and Responsibility"

Saturday Morning, October 12, 1985

- 8:15 - 8:50 Coffee/Exhibits
Nabors Auditorium (N-102)
- 9:00 - 12:00 Registration and Exhibits
Nabors Auditorium (N-102)
- 8:50 - 9:00 Announcements - Opening Remarks
James Graham, Program Co-Chair, Presiding
Fulton Auditorium (F-400)
- 9:00 - 9:30 "Why Are We Where We Are: Trends in Enrollment and Attrition in
Crucial Math and Science Courses"
P. Thomas Miller, Volunteer State Community College
Gallatin, TN 37066
- 9:30 - 10:30 "Even You Can Participate in Space Shuttle Experiments!!!"
Harry Hertzler, Aerospace Education Consultant, NASA
Headquarters, Washington, DC 20564
(Room to be announced at Conference)
- 9:30 - 10:30 Panel Discussion
Topic: How Accountability Will Affect Two-Year College Faculty
Fulton Auditorium (F-400)
- 10:30 - 11:00 Coffee/Exhibits
Nabors Auditorium (N-102)
- 11:00 - 11:30 "Crystal Growth in Space"
Edward Meehan, The University of Alabama in Huntsville,
Huntsville, AL 35899
- 11:30 - 12:00 "Depth of Field or Shutter Speed? Should We Teach Fewer Topics in Depth
or Many Quickly?"
M. Wendell Massey, Florida Junior College at Jacksonville,
Jacksonville, FL 32218
- 12:00 - 1:15 LUNCH/Exhibits (Nabors Auditorium, N-102)
- 1:15 - 1:45 "Foam Separation Techniques"
Ben Currin, John C. Calhoun Community College
Decatur, AL 35602
- 1:45 - 2:30 "Bits and Pieces of Chemical History"
Brian O'Leary, The University of Alabama at Birmingham,
Birmingham, AL 35294

AGENDA

Committee on Chemistry in the Two-Year College
General Meeting
Friday, October 11, 1985
9:00 A.M.
Fulton Auditorium (F-400)

- I. Introductions
- II. Approval of Minutes, Waukesha Meeting
- III. Reports
 - A. Chair - Jay Bardole
 - B. Memphis meeting report - Paula Ballard and James Graham
 - C. Reno meeting plans - Carolyn Collins
 - D. Membership - Mike Knoll
 - E. Treasurer - John Clevenger
 - F. College Sponsors - John Clevenger
 - G. Industrial Sponsors - Elliott Greenberg
 - H. Publications - Ethelreda Laughlin
 - J. IUPAC Meeting, Tokyo - Katherine Weissmann
 - K. Meeting Sites - Dick Gaglione
 - L. Programs - Len Grotz
 - M. Workshops - Sam Crawford
 - N. ACS Office of Two-Year Collges - Jim Bradford
- IV. Old Business
- V. New Business
- Vi. Information Items

MINUTES OF THE EXECUTIVE COMMITTEE UWC-WAUKESHA

Presiding: Jay Bardole
Recording: Michael Knoll

Attending Members:

Jay Bardole	Vincennes University
Jim Bradford	ACS
Curtis Dhanau	Vincennes University
Leonard Grotz	UWC-Waukesha
Cecil Hammonds	Penn Valley Community College
Kathy Weissmann	CS Mott Community College

The meeting was called to order at 7:45 PM on May 23, 1985. Ballots for the 1986 Chair Elect position were opened, tallied, and read at the meeting. By a majority vote, Edith Bartley was selected as 1986 Chair Elect. Jay then announced that the call for nominations for the 1987 Chair Elect would be sent out with the minutes of this meeting.

Jim Bradford indicated a need and a willingness to print all abstracts and at least one complete paper from each conference in the Distillate. The Policies and Procedures define this activity as a responsibility of the Editor/Secretary. The mechanics were discussed. Jim suggested that we use the ACS abstract form. It was agreed that these will be made available to the Program Chair, who will give them to each speaker when they agree to speak. The abstract forms will be collected by the Editor at the conference. It was noted that implicit in the above suggestion is the announcement by the Program Chair that invited speakers must have an abstract of their paper at the conference. At the close of each conference the Editor will send the abstracts to Jim Bradford and the editor will select one or more presentations to obtain the full paper for publication in the Distillate.

There have been changes that impact chemistry teaching in the two year colleges. These include: 1) the full funding of the ACS Office of Two-Year Colleges, 2) SOCED interest in developing Guidelines and Evaluation Procedures for Two-Year Colleges, and 3) the maintaining a good working relation with the Division of Chemical Education. The question was asked, "What impact will these activities and changes have on the role and position of COCTYC in relation to the other organizations?" The following is a summary of the responses:

- 1) All activities could be coordinated through the Office of Two-Year Colleges.
 - a) Continuing curricula development
 - b) Continuing education for high school and two-year college teachers by offering short courses (note the newsletter announcement that applications responding on school letterhead may obtain a registration fee reduction to ACS workshops)
 - c) Possible teleconferencing to encourage a wider spread of unusual or unique course offerings.

2) The first draft of SOCED Guidelines and Evaluation Procedures for two-year colleges was discussed and the next steps to be taken were outlined. The list of suggested participants for the invitational conference was read and suggestions made for people to fill several vacancies. The list was to be reread at the full committee meeting with a request for further suggested names.

Several budgetary items discussed regarding the continued funding of the distillate through the Two-Year College office, the allocation for the invitational conference and the propriety of suggesting and voting on fund allocation at one meeting. A mail ballot regarding the invitational funding was requested. The ballot will approve a \$1200 funding from the 1985 budget for the invitational conference and to ensure complete distribution of the final report an additional \$1200 be allotted from the 1986 budget (to be earmarked specifically for the report distribution)

The meeting adjourned at 10:30 PM.

Respectfully submitted

Michael Knoll

OPEN COMMITTEE MEETING
UWC-WAUKESHA 5/24/85

Presiding-Jay Bardole
Recording-Michael Knoll

Persons Present: John Albrecht, C.J. Alexander, Marion Baker, Neil Ball, Jay Bardole, Richard Bearden, Jim Bradford, Henry Budd, Louis Csontos, Curtis Dhonau, Mark Dua, Bob Glaser, Leonard Grotz, Michel Grundiza, Cecil Hammonds, Ronald Hunter, Bill Huntsman, Betty Johnson, Michael Knoll, Shirley Kraft, Ax Kramer, Larry Ladwig, Martha Mackin, Ann Makinen, Bob Porod, LeRoy Purchatzke, Howard Sanders, David Shaw, Dorothy Schultz, Kathy Siefert, Trudie Slapar, Lloyd Uhren, Joy Walker, Laverne Weidler, Kathy Weissmann, John Winkelmann, Vern Wolfmeyer.

The meeting was called to order at 10:00 A.M. on May 5, 1985 in Room 164 of Northview Hall on University of Wisconsin Center-Waukesha. Following the introductions a special welcome was extended to the High School teachers present. The Miami minutes were approved after Jim Bradford clarified that Margot Schumn was requesting interested persons to try out her laboratory material that she developed. Persons interested should contact her directly.

Len Grotz gave a short report on the Wisconsin meeting. There were 65 preregistered for the meeting, and modifications will be made in the discussion groups on Saturday morning. There are conference evaluations in the registration packets which will be turned in Saturday. Mike Knoll reported 447 paid members, 40 were new members at the Miami meeting. Marion Baker gave a financial report. We have \$10513 which is invested in three separate certificates of deposit which mature at different times. We have \$8592 in a checking account. She reported that we currently have 98 college sponsors and she will try to see all persons whose college is not at sponsor. We currently have 39 industrial sponsors, and all persons should try to enroll new industrial sponsors. Dick Gaglione is chair of the Meeting Site Sub-committee and in his absence asked us to consider how future Biennial Conferences should be scheduled. The alternatives are that there can be a fifth meeting or one of 4 regional conferences. It was announced that the 1986 meeting at Bozeman Montana would not be counted as 1 of 4 regional meetings. The general consensus from the committee members present was to count the 1988 meeting at Purdue as one of the four regional meetings in that year. This would make the meeting in Toronto the Eastern meeting for 1988. After some discussion there was strong consensus to consider summer meetings in the future since teachers can attend without missing classes.

Len reported that no use has been made of the program resource person and he encouraged persons, including high school teachers, to list types of activities to consider which will encourage attendance at future meetings. Response should be made on the conference evaluation form or personally to Len. Kathy Weissmann reported on the SOCED Invitational Conference which will focus on problems in teaching in the 2

year colleges. Names were solicited to be considered as suggested participants. Those with suggestions were asked to contact Jay before June 15, 1985 with the names and addresses. Kathy also reported that preliminary draft of the SOCED Guidelines and Evaluation Procedures is available and interested persons can see a copy by contacting Kathy. The C₃ meeting will be in Sudbury Ontario on June 1-4, 1985.

Jim Bradford announced that the Executive Committee had decided to add abstracts of all presented papers to the Distillate and that the Editor would select one or two papers from each conference for publication in the Distillate. He also said that Kathy Weissmann has been selected to be funded for travel to the International Conference on Chemical Education in Japan late this summer. Three of the ten funded to attend were from community colleges.

Jay thanked Trudy Slapar for the construction of the Banner that was used at the Storrs meeting and is now being used in the exhibits hall.

The Chair-elect for 1986 will be Edith Bartley. Announcements of the call for nominations for Chair-elect in 1987 are at the registration desk and there will be a call for nominations in the next news letter.

The meeting was adjourned at 10:45 A.M.

Respectfully submitted

Michael Knoll

INDIVIDUAL MEMBERS REPORT

Membership Renewals = 381

Membership New = 108

TOTAL = 489

Gained 40 members from the Miami Meeting.

Gained 32 members from the Waukeska Meeting.

Michael Knoll

September 1, 1985

FINANCIAL REPORT FOR COCTYC

From: 5/7/85 To: 9/1/85

Credits

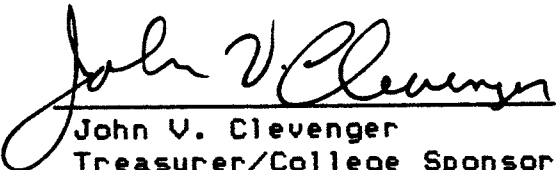
Balance to 5/7/85		\$ 8592.55
College sponsors		400.00
Industrial sponsors		1850.00
Individual members		408.00
Interest		455.28
checking	186.75	
C.D.	268.53	
Meetings & Misc.		417.07
Miami	138.00	
Raffle, WI	44.50	
Waukesha	234.57	
		<hr/>
		\$ 12122.90

Debits

Travel		555.00
chair	555.00	
Postage		51.13
Phone		15.00
Meetings & Misc.		106.00
returned check	6.00	
Reno, banquet	100.00	
		<hr/>
		727.13

Balance \$ 11395.77

We have 115 college sponsors for 1985. A listing, by college, follows.


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Treasurer/College Sponsors

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Amarillo TX 79178

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Ancilla Domini College
Donaldson IN 46513

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101 College Parkway
Arnold MD 21012

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Yuma AZ 85364

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Moline IL 61265

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Lake Jackson TX 77566

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1401 E. Court St.
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INDUSTRIAL SPONSORS

At the close of the 1984-85 academic year, there were 39 paid-up industrial sponsors. Invoices for the present year were mailed out in June. To date, there have been 20 renewals, one new sponsor, and one cancellation for a total of 21 current paid-up sponsors. A second billing is being prepared and efforts will continue to affect renewal of the remaining sponsors.

FINAL FINANCIAL REPORT ON THE STORRS BOOTH

The 2YC₃ jacket was raffled off at the Waukesha Conference, yielding \$44.50. This brings the net profit from the Storrs Booth to \$420.89.

SUMMARY OF FUTURE 2YC₃ MEETINGS

* SCHEDULED
 ** SUGGESTED SITES/APPOINTMENTS

ACADEMIC YEAR

85-'86	88th - FALL 10/11-12/85 Memphis State University (With joint SE/SW ACS Reg. Meeting) State Technical Institute 5983 Macon Cove Memphis, TN 38134	89th - FALL 12/6-7/85 Truckee Meadows Community College 7000 Dandini Blvd. Reno, Nevada 89512	Westches 75 Grass Valhall with
Program Chair	Paula Ballard, Jefferson State Jr. College, Birmingham, AL James Graham, J.C. Calhoun Com. College, Decatur, AL	Carolyn Collins Clark County Community College Las Vegas, NV (702) 643-6060	Patricia Paul Smi Paul Smi (518) 32
Local Arr. Chair:	(205) 853-1200 X1463 George Williams (901) 377-4111	John Clevenger, TMCC (701) 673-7221	John Tob Westches (914) 28 Stephen I New York Brooklyn
Ad. Spon. Chair:			
Theme:	Frontiers in Chemistry		

86-'87	92nd-SUMMER 7/27-8/1, 1986 9th Biennial Conference in Chemical Education Bozeman, Montana	93rd-FALL 10/3-4/86 Greenville Technical College Box 5616, Station B Greenville, SC 29606	94th-FALL 11/21-22/86 Sinclair Community C Dayton, Ohio 45402
Program Chair:	Ed Heath Southwest Texas Junior Coll. (512) 278-4401 X224	Leo Kling, III, Tri-Counties Technical College (803) 646-8361	Richard Jones Sinclair Community Dayton, Ohio 45402
Local Arr. Chair:		Alan Day, Greenville Tech	Roger Penn Sinclair Community (
Ad. Spon. Chair:			Jim Johnson Sinclair Community
Theme:			

NGS

REGIONS: E- EAST
S- SOUTH

W- WEST
M.W- MID-WEST

CADEMIC YEAR

'85-'86

90th- SPRING
4/11-12/86
Westchester Community College
75 Grasslands Road
Valhalla, New York 10595
with 91st ACS Nat. 4/13-18/86

91st - SPRING
4/25-26/86
William Rainey Harper College
Palatine, IL 60067

Program Chair

Patricia Flath
Paul Smith College
Paul Smith, N.Y. 12970
(518) 327-6266

William T. Mooney, Jr.
El Camino College
Via Torrance, CA 90506

Local Arr. Chair

John Tobias
Westchester Community College
(914) 285-6939

Joseph Bauer
William Rainey Harper College
(312) 397-3000

Ind. Spon. Chair

Stephen Dreier (718) 643-8242
New York City Technical College
Brooklyn, N.Y. 11201

Duane Sell
William Rainey Harper College

Theme:

'86-'87

h-FALL
11-22/86
Community College
io 45402

95th-SPRING
4/3-4/87
Community College of Denver
(Specific Campus Undecided)
(ACS Nat'l. 4/5-10/87 Denver

96th
Montgomery Community Coll
Rockville, MD 20850
5/23/ - 5/24

Program Chair:

ones
Community College
hio 45402

Martin Van Dyke, CC of Denver
N.Campus, 3645 W. 112 Ave.
Westminster, CO 80030
(303) 466-8811

Margot K. Schumm
(301) 279-5129
Montgomery Com. Colleg
Rockville, MD 20850

Local Arr. Chair

Community College

Ind. Spon. Chair

on
Community College

Theme:

SUMMARY OF FUTURE 2YC₃ MEETINGS

* SCHEDULED
 ** SUGGESTED SITES/APPOINTMENTS

CALENDAR YEAR

	97th	98th	
88 Program Chair 1st Arr. Chair: Spon. Chair: Name:	S Florida Junior College North Campus Jacksonville, FL 32218 Wendell Massey		Name ()
88-'89 Program Chair 1st Arr. Chair: Spon. Chair: Name:	101st ACS Nat'l. Late Sept., Early Oct. Los Angeles Doris Koll	102nd Pittsburgh, PA? Barbara Rainard (412) 237-2525 Community College of Allegheny Allegheny Campus Bob Ridge Ave Pittsburgh, PA	103rd Pittsburg Barbara R Community Allegheny Bob Ridge Pittsburg

65

REGIONS: E- EAST
S- SOUTH

W- WEST
M.W- MID-WEST

ACADEMIC YEAR

37-88	99th June 5-11 Nat'l. at Toronto (Joint C ₃ -2YC ₃)	100th - SPRING ^W Early May Ricks College (Dormitories) Rexburg, ID 83440 (near Idaho Falls, Yellowstone, Gr. Tetons & Craters of the Moon Nat'l. Parks)
Program Chair		
Local Arr. Chair:		Arthur Hubscher Ricks College
Ad. Spon. Chair:		
Theme:		
'88-'89	103rd Pittsburgh, PA.?	104th 4/9-14 ACS Nat'l Dallas
Program Chair	Barbara Rainard (412) 237-2525 Community College of Allegheny Allegheny Campus Bob Ridge Ave Pittsburgh, PA	
Local Arr. Chair:		
Ad. Spon. Chair:		
Theme:		

SUMMARY OF FUTURE 2YC₃ MEETINGS

* SCHEDULED
 ** SUGGESTED SITES/APPOINTMENTS

ACADEMIC YEAR

	105th-Fall with ACS Nat.- Miami 9/10-15	106th	with ACS
'89-'90			
Program Chair			
Local Arr. Chair:			
Ad. Spon. Chair:			
Theme:			
Program Chair:			
Local Arr. Chair:			
Ad. Spon. Chair:			
Theme:			

INGS

REGIONS: E- EAST
S- SOUTH

W- WEST
M.W- MID-WEST

ACADEMIC YEAR

	107th-Spring	108th
'89-'90	with ACS Nat.-Boston(week of 4/23)	
Program Chair		
Local Arr. Chair		
1. Spon. Chair		
name:		
Program Chair:		
Local Arr. Chair		
Spon. Chair		
e:		

POLICIES AND PROCEDURES
of the
COMMITTEE ON CHEMISTRY IN THE TWO-YEAR COLLEGES
Division of Chemical Education
American Chemical Society

A. THE ORGANIZATION (COCTYC/2YC₃)

1. (a) The Committee on Chemistry in the Two-Year Colleges (COCTYC), a committee of the Division of Chemical Education of the American Chemical Society, consists of approximately sixty (60) two-year college chemistry teachers, with roughly equal representation from the four (4) geographic regions of the nation.

Eastern: Connecticut, Delaware, District of Columbia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Virginia, Vermont, West Virginia

Midwestern: Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin

Southern: Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, Oklahoma, Puerto Rico, South Carolina, Tennessee, Texas

Western: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming

(b) 2YC₃ (from Two-Year College Chemistry Conferences, the primary activity sponsored by the COCTYC) is the name of the affiliation of two-year college chemistry teachers and college and industrial sponsors who, under the aegis of the COCTYC, pay dues in support of its activities.

2. The primary goals of the COCTYC are to:

- (a) Plan and implement activities designed to improve the quality of chemical education in the two-year colleges
- (b) Provide liaison between the DivCHED and two-year college chemistry teachers
- (c) Promote communication and interchange of ideas among chemistry teachers from the secondary schools to the universities.

3. The major activities of the COCTYC include:

- (a) Planning and conducting four regional Two-Year College Chemistry Conferences each year.
- (b) Publishing and distributing such materials as are needed to facilitate the committee's programs and disseminate their benefits to all members of 2YC₃.

4. Responsibilities of the COCTYC are discharged by:
 - (a) The committee in open meetings held in conjunction with the regional conferences.
 - (b) The Executive Committee of the COCTYC in meetings held in conjunction with the regional conferences.
 - (c) The Executive Committee by means of mail ballots when appropriate.
 - (d) Officers of the Executive Committee
 - (e) Sub-committees, as appropriate
 - (f) Questionnaires, surveys and ballots conducted by mail, when appropriate.

B. THE MEMBERSHIP OF THE COMMITTEE (COCTYC)

1. The Committee consists of approximately fifteen (15) members from each of the four regions of the U.S.
2. Members are appointed to three (3) year renewable terms by the chair of the DivCHED. Recommendations for appointment are made to the chair of the DivCHED by the chair of the COCTYC, with approval of the Executive Committee. Terms begin on January 1 and terminate December 31.
3. All two-year college chemistry teachers, who are members of the organization ($2YC_3$) and have participated in the conferences, are eligible for membership on the committee. Individuals interested in serving on the committee should submit their name and a brief resume to the chair of the COCTYC. The chair will maintain a file of potential appointees for consideration when vacancies occur. The file will be updated each year and passed on to the chair-elect.
4. Committee members are expected to:
 - (a) Keep their $2YC_3$ dues current
 - (b) Attend at least one conference each year
 - (c) Assist, if asked, in planning and conducting the conference in their region.
 - (d) Respond to questionnaires, ballots and so on
 - (e) Discharge other responsibilities as they arise

5. Committee members who fail to satisfactorily discharge their responsibilities may have their appointment terminated at any time. In such cases, the chair of the COCTYC will, with approval of the members of the Executive Committee attending the meeting in the individuals region, notify the member in writing that unless an adequate explanation is received within six (6) weeks their appointment terminates.
6. Members of the COCTYC who retire, or for other reasons are no longer actively teaching chemistry in a two-year college, are eligible to continue on the Committee as long as they satisfy the criteria outlined in section four (4) above.
7. Prior to the expiration of their terms, the chair will contact those members who have been discharging their responsibilities satisfactorily to learn if they wish to be considered for appointment to another term.

C. THE EXECUTIVE COMMITTEE OF THE COCTYC

1. The Executive Committee consists of the chair, chair-elect, immediate past-chair, secretary/editor, treasurer/college sponsor chair, industrial sponsor chair, membership chair and other past chairs in accordance with the following:
 - (a) All past chairs will remain on the Executive Committee until the policies and procedures herewith proposed are adopted by the COCTYC.
 - (b) Beginning January 1 following final adoption of this document, a maximum of two past chairs, beginning with the first and continuing forward in order of term of office, will go off the Executive Committee each year until only two past chairs beyond the immediate past chair remain on the committee.
 - (c) From that time forward, only the two most recent past chairs beyond the immediate past chair will remain on the Executive Committee.
 - (d) If a member goes off the committee by resignation or for other reasons, they will count as one of the two for that year.

(e) As past chairs go off the Executive Committee they will return to the COCTYC, if they so desire.

2. The program chairs for each year's conferences, hereinafter to be called Regional Program Chairs, will be ex-officio members of the Executive Committee during the year of their conference.
3. Mail ballots to all members of the Executive Committee are required for election of officers and revision of this document. A mail ballot may be requested by any member of the Executive Committee before decisive action is taken on other substantive issues. In all cases, a simple majority of the votes cast will determine the issue.
4. Each member of the Executive Committee has only one vote.
5. Members of the Executive Committee should resign if, for any reason, they are no longer able to contribute effectively. The COCTYC chair may, with approval by mail ballot, remove an executive committee member who is no longer performing satisfactorily.

D. OFFICERS OF THE EXECUTIVE COMMITTEE

1. The officers of the Executive Committee are:
 - (a) The chair-elect, chair and immediate past-chair who progress through the offices in the order listed. These offices are for one-year, non-renewable terms, beginning January 1 and ending December 31.
 - (b) The secretary/editor, treasurer/college sponsor chair, membership chair and industrial sponsor chair. These offices are for three year terms, beginning January 1 and ending December 31. They may be renewed for a maximum of one additional three year term.
 - (c) Insofar as possible, consideration should be given to regional rotation of all offices of the Executive Committee.
2. Should any office of the Executive Committee become vacant before the completion of a term, the following procedures will be followed:
 - (a) If the office of chair becomes vacant, the immediate past-chair will assume the office and complete the term.

- (b) If the office of chair-elect becomes vacant, a replacement will be selected by a procedure jointly developed and agreed upon by the chair and the Executive Committee.
- (c) If any other office becomes vacant, the immediate past-chair will assume the duties of the office until a special election is held to fill the vacancy.
- (d) If the immediate past-chair is unable to fill a vacancy, or if more than one vacancy occurs, the next most recent past-chair will assume the office.

E. ELECTION OF THE CHAIR-ELECT

1. A new chair-elect is selected each year by a majority vote of the Executive Committee. The procedure is as follows:
 - (a) A call for nominations will be included in the second spring and first fall NEWSLETTER each year.
 - (b) Nominations must be received by the chair not later than noon Saturday of the first fall conference.
 - (c) No later than the first Saturday following the first fall conference, the chair will mail a list of nominees and their resumes to the home address of each member of the Executive Committee soliciting information and/or concerns regarding the nominees.
 - (d) Nominations will be reviewed at the Executive Committee meeting held in conjunction with the second fall conference. Any nominee not meeting the eligibility requirements as stated in section E.2 will be eliminated.
 - (e) Information and/or concerns regarding the nominees may be presented at this meeting, verbally by those in attendance and in writing (see section E.1.c) by those not in attendance. These discussions will be kept strictly confidential.
 - (f) No later than December 31, the chair will mail a ballot, listing all eligible nominees in alphabetical order, with instructions to vote for no more than two (2) nominees, to the home address of each member of the Executive Committee.
 - (g) Ballots must be returned, in a signed, sealed envelope marked "ballot", by mail, in person, or by a third party to the secretary, or Executive Committee designate, in time to

be opened by the secretary, or Executive Committee designate, at the meeting held in conjunction with the first spring conference.

- (h) Ballots will be opened and tabulated by the secretary (or designate) at this Executive Committee meeting. Ballots with more than two (2) votes will be discarded. The chair will verify the tally and announce the results immediately to the Executive Committee, and, as soon as possible, notify the candidates who are to be on the second ballot.
 - (i) A second ballot, listing the names of the two candidates (and those tying, if any) receiving the most votes in alphabetical order, will be mailed by the chair no later than the first Saturday following the first spring conference, to the home address of each member of the Executive Committee.
 - (j) Ballots will be returned and counted, using the procedure outlined in section E.1.g., in time for the Executive Committee meeting held in conjunction with the second spring conference.
 - (k) In the event of a tie, lots will be drawn.
 - (l) The chair will notify the winner that he/she will be recommended to the chair of the DivCHED for appointment as the new chair-elect. If the winner is unable to accept the office, the chair will notify the runner-up that he/she will be recommended to the chair of the DivCHED for appointment as the new chair-elect.
 - (m) The chair will recommend that the chair of the DivCHED appoint the person selected to the office of chair-elect.
2. To be eligible for nomination for the office of chair-elect an individual must:
- (a) Be a two-year college chemistry teacher.
 - (b) Have been a dues-paying member of 2YC₃ for a minimum of three years prior to nomination.
 - (c) Be a member of ACS and DivCHED.
 - (d) Have demonstrated leadership and organizational ability by serving as chair or co-chair for a conference and in one or more of the following capacities:
 - (1) Served three (3) years on the Executive Committee.
 - (2) Served as local arrangement chair for a conference.
 - (3) Chaired a sub-committee.
 - (4) Contributed within the previous three (3) years in two or more other ways such as: local industrial sponsor

coordinator, chaired a conference section, presented a paper at a conference, moderated a panel at a conference, and so on.

(It is highly desirable that the chair-elect's college be agreeable to helping with certain expenses, such as printing, mailing, telephone, typing and travel, during the three year period of commitment.)

3. Nominations for the office of chair-elect must include:
 - (a) Pertinent personal data such as name, college, job title, address and so on.
 - (b) Statement of qualifications, signed by the nominee. (see E.2)
 - (c) Signed consent of nominee.

F. ELECTION OF OFFICERS OTHER THAN CHAIR-ELECT

1. The secretary/editor, treasurer/college sponsor chair, membership chair and industrial sponsor chair are elected by mail ballot of the Executive Committee.
2. To be eligible for the aforementioned offices an individual must be a current member of the COCTYC and DivCHED.
3. Reappointment to a second term: Eighteen months prior to the expiration of an incumbent's first term, the chair will inquire if he/she desires to serve another term. If a second term is desired, the chair may, with approval by mail ballot, of the Executive Committee, appoint the individual to a second term.
4. If the incumbent has served two terms or does not wish to serve a second term or if the Executive Committee does not approve a second term, the procedure for electing an individual for the office is as follows:
 - (a) The vacancy will be announced in the two fall NEWSLETTERS of that year. The announcement will include a request that interested persons are to contact the secretary/editor prior to December 31 of that year for further information.
 - (b) The secretary/editor will send those interested a list of duties of the office and an accompanying request for a written statement of qualifications and willingness to serve. Aforesaid statements must be received by the secretary/editor prior to the Executive Committee meeting held in conjunction with the first spring conference.

- (c) A ballot, listing the names of the interested persons in alphabetical order, will be prepared by the chair and mailed, along with any pertinent information available, to the home address of all Executive Committee members by the first Saturday following the first spring conference. The ballot will include instructions to vote for a first and second choice only.
- (d) Ballots will be marked and mailed, as outlined in section E.1.g above to the secretary/editor in time to be opened at the second spring meeting of the Executive Committee.
- (e) The secretary/editor will tabulate the votes, counting each first place vote as two votes and each second place vote as one vote. The chair will verify the ballot count. If an individual receives a simple majority of the total votes (total votes equals three times the number of ballots received), the chair declares that individual to be the winner.
- (f) If no one receives a simple majority of the total votes, the chair will, by the first Saturday following the conference, mail a ballot listing the two individuals, in alphabetical order, who received the most votes to the home address of each member of the Executive Committee. The ballot will contain instruction to vote for only one person.
- (g) The ballots will be marked and mailed following the procedure outlined in section E.1.g to the secretary/editor in time to be opened at the Executive Committee meeting held in conjunction with the first fall conference.
- (h) The ballots will be counted and verified as outlined in section E.1.g. The chair will immediately announce the winner to the Executive Committee and will notify the person elected as soon as possible.

G. RESPONSIBILITIES OF THE EXECUTIVE COMMITTEE AND ITS OFFICERS

- 1. Primary responsibilities of the Executive Committee are to:
 - (a) Provide overall coordination and direction for the COCTYC.
 - (b) Provide encouragement, support and guidance to the officers of the Executive Committee and sub-committee chairs.
 - (c) Elect all officers of the Executive Committee.

- (d) Approve any changes in the Policies and Procedure of the COCTYC.
 - (e) Approve nominees recommended to the DivCHED chair or appointment to the COCTYC.
 - (f) Approve the budget.
 - (g) Assist in selection of conference sites and Regional Program Chairs.
 - (h) Approve creation of sub-committees and appointments to sub-committees.
2. Primary responsibilities of the COCTYC chair are to:
- (a) Provide overall leadership and coordination for the COCTYC, and its officers, committees and activities.
 - (b) Work closely with the four regional program chairs in the planning and execution of the regional conferences.
 - (1) Duties regarding conference planning are outlined on a Conference Planning Form (Rev. 1981) and in the Conference Planning Manual.
 - (c) Chair meetings of the COCTYC and the Executive Committee.
 - (d) Prepare and mail a 2YC3 NEWSLETTER prior to each conference.
 - (e) Prepare and mail agendas for each regional meeting of the COCTYC and the Executive Committee.
 - (f) Assist in making arrangements for conference sites.
 - (g) Conduct elections of officers of the Executive Committee in accordance with the procedures outlined herein.
 - (h) Prepare the budget for the upcoming year and approve expenditure of the current budget.
 - (i) Secure nominees for membership on the COCTYC, both new and renewal, and recommend their appointment to the chair of DivCHED.
 - (j) Publish and distribute a roster of COCTYC members and officers.
 - (k) Conduct surveys of COCTYC members regarding conference themes, sites, speakers and other pertinent topics.
 - (l) Keep the Executive Committee informed of all significant problems and developments, such as resignation of officers and election of new officers.

- (m) Attend DivCHED Business meetings and DivCHED Program Committee meetings, whenever possible.
 - (n) Prepare a report for the fall and spring DivCHED meetings and for the DivCHED NEWSLETTER.
 - (o) Write letters of appreciation to appropriate individuals (college president, program chair, etc) following each conference).
 - (p) Provide the secretary/editor with copies of all correspondence relating to COCTYC/2YC₃.
 - (q) Provide the new chair with:
 - (1) Copies of all correspondence regarding COCTYC/2YC₃ business that was either sent or received during the year.
 - (2) Copies of all files, records, and so on relating to COCTYC/2YC₃.
 - (r) Carry out any other activities necessary to implement activities of the COCTYC.
3. Primary responsibilities of the immediate past-chair are to:
- (a) Provide encouragement, advice and support to the chair.
 - (b) Prepare an Annual Report upon completion of term as chair and send copies to all members of the COCTYC and the chair of DivCHED.
 - (c) Attend the DivCHED Business Meeting held in conjunction with ACS National Meetings, whenever possible.
4. Primary responsibilities of the secretary/editor are to:
- (a) Take minutes at meetings of the COCTYC and mail copies twice yearly to all members of the committee.
 - (b) Take minutes at meetings of the Executive Committee and mail copies, along with a list of conference participants, to all members of the Executive Committee.
 - (c) Keep C&E News, Journal of Chemical Education, Journal of College Science Teaching, Chronical of Higher Education, 2YC Distillate and Chem 13 News informed concerning future conference dates and sites.
 - (d) Collect papers presented at the conferences, with assistance from the regional program chairs.
 - (e) Organize papers into topic groups for possible future publication in 2YC Distillate and/or the Journal of Chemical Education.

- (f) Secure permission from authors to publish papers selected for publication.
 - (g) Edit and otherwise prepare papers selected for publication, as required by the publication.
 - (h) Update the Policies and Procedures when revisions are made and supply all members of the Executive Committee with a copy of the latest revision.
 - (i) Maintain and update all forms, guidelines and other documents of
 - (j) Maintain an up-to-date file of all correspondence of significance relating to COCTYC/2YC₃ activities.
 - (k) Perform other duties as requested by the chair.
 - (l) Pass copies of all documents and correspondence to the newly elected secretary/editor.
5. Primary duties of the treasurer/college sponsor chair are to:
- (a) Maintain accurate records of all aspects of the finances of COCTYC/2YC₃.
 - (b) Receive and maintain records of all funds received from all sources including dues from 2YC₃ members, college sponsors, industrial sponsors, and the DivCHED allocation.
 - (c) Deposit funds in checking and savings accounts as appropriate and manage them in accordance with guidance from the Executive Committee.
 - (d) Disburse funds to pay for budgeted expenditures incurred in the normal activities of COCTYC/2YC₃. If funds are requested for expenditures that are unusual, approval of the chair and/or the Executive Committee should be obtained prior to disbursement.
 - (e) Contact local arrangements chair prior to each conference to clarify dues collection procedures and, at the beginning of the conference, check with the registration desk (or have designate do so) to insure that proper procedures are followed.
 - (f) Prepare and submit to the Executive Committee a complete financial report for each conference.
 - (g) Provide financial information to the chair and/or the Executive Committee any time it is requested.
 - (h) File necessary annual reports with the Internal Revenue Service to maintain the organization's tax exempt status. (Maintaining an income less than ten thousand dollars (\$10,000.00) simplifies the IRS report.)
 - (i) Work with the chair in preparing the annual report.

- (j) Maintain an accurate list of college sponsors, including the date payment was received from each.
 - (k) Notify college sponsors when their renewals are due, submitting an invoice along with request for renewal.
 - (l) Regularly solicit non-sponsoring colleges to become sponsors, using conference participant lists to identify contact persons at prospective colleges.
 - (m) Provide the membership chair with a current list of college sponsors.
 - (n) Use correspondence with sponsoring colleges as a means of publicizing the activities of 2YC3.
6. Primary duties of the membership chair are to:
- (a) Maintain an accurate mailing list of all 2YC3 members, college sponsors and all two-year colleges.
 - (b) Provide mailing labels to chair and others, as needed.
 - (c) Send renewal dues notices for the upcoming year to all individual members of 2YC3.
 - (d) Receive individual membership applications and dues payments that are mailed in.
 - (e) Record the receipt of dues payments and periodically forward the funds to the treasurer.
 - (f) Receive membership applications received at the conferences.
 - (g) Mail membership cards to individual members.
 - (h) Prepare and mail certificates to college sponsors in accordance with a list provided by the college sponsor chair.
 - (i) Contact local arrangements chair prior to each conference to clarify registration record keeping procedures and, at the beginning of the conference, check with the registration desk (or have designate do so) to insure that registration is performed properly.
 - (j) Maintain an updated directory of two-year college chemistry faculty, with assistance from chair-elect.
7. Primary responsibilities of the industrial sponsor chair are to:
- (a) Work independently and in cooperation with local industrial sponsor coordinators to recruit new industrial sponsors.

- (b) Prepare and supply local industrial sponsor coordinators with recruiting packets, lists of prospective new sponsors and encourage and advise them in their efforts to recruit new sponsors.
 - (c) Prepare and supply local industrial sponsor coordinators with appropriate forms such as invitations to exhibit, exhibit request forms, acknowledgement forms for exhibit requests and receipts of exhibit materials.
 - (d) Provide guidance and assistance to local industrial sponsor coordinators and/or local arrangement chairs to insure that needs of exhibitors are adequately served.
 - (e) Mail invitation to exhibit and exhibit request forms to all sponsors two or three months prior to each conference.
 - (f) Provide the COCTYC chair updated mailing labels for industrial sponsors six weeks prior to each conference.
 - (g) Secure a list of sponsors who exhibit at each conference from the regional sponsor coordinators.
 - (h) Prepare and mail certificates of sponsorship annually to sponsors and express appreciation in other ways when deemed appropriate.
 - (i) Work to secure renewals from sponsors by sending renewal notices and billings and by other approaches that seem appropriate.
 - (j) Maintain accurate records regarding each sponsor, including date payment received, names and addresses of representatives, and other pertinent information.
 - (k) Mail sponsor checks promptly to the Treasurer and notify membership chair regarding new sponsors.
8. Primary responsibilities of the chair-elect are to:
- (a) Attend as many regional conferences as possible so as to become fully acquainted with on-going activities, and the responsibilities to be assumed as chair.
 - (b) Work with the membership chair to improve and update the Two-Year College Chemistry Faculty Directory.
 - (c) Chair conference site sub-committee.
 - (d) Attend DivCHED Business and Program Committee meetings whenever possible.

(e) Assume other duties as requested by the chair.

H. SUB-COMMITTEES

1. The COCTYC believes that the vitality of the organization (2YC3) depends in part on the number of people contributing to its activities. Therefore, to foster participation, much of the work of the Committee will be delegated to sub-committees.
2. Each sub-committee's members and its chair will be appointed and given their charge by the chair of the COCTYC, with the approval of the Executive Committee. The life of the committee and the term of its chair will be determined by the COCTYC chair, with consent of the Executive Committee.

I. PRIVILEGES OF 2YC3 MEMBERS

1. Individual members are entitled to register at all conferences without paying the registration fee and will receive all publications without charge.
2. College sponsoring members receive copies of all publications.
3. Industrial sponsoring members receive all publications and are entitled to exhibit at each of the four regional conferences without charge.
4. Individual and college membership is for the calendar year and industrial membership is for the fiscal year (July 1 to June 30).
5. The fee for each type membership is set by the Executive Committee.

J. ADOPTION AND REVISION

1. This document, including possible revisions during the adoption process, will become the official Policies and Procedures of the COCTYC when approved by a simple majority of the members of the Executive Committee and the COCTYC.
2. The adoption process is as follows:
 - (a) After approval by a simple majority of the Ad Hoc Committee on Policies and Procedures, the initial draft of the document will be submitted by mail to the Executive Committee, with a request for comments.
 - (b) The Executive Committee will vote by mail ballot to either accept or reject the revised document as submitted. A simple majority of the votes cast will determine the outcome.

- (c) If a simple majority of the Executive Committee votes to accept, it will then be submitted by mail to the members of the COCTYC who will likewise vote to accept or reject the entire document as presented. A simple majority of the votes cast will determine the outcome.
 - (d) If the majority of the Executive Committee votes to reject the entire document as submitted, it will be re-submitted to the Executive Committee for a vote by sections. At this time each member of the Executive Committee will be requested to submit recommendations for revision on a section by section basis.
 - (e) The Ad Hoc Committee will then revise the document and re-submit it for adoption following the same procedure outlined above, beginning with J.2. (a).
 - (f) This procedure will be repeated, if necessary, until a majority of the Executive Committee votes to adopt, at which time it will be submitted to members of COCTYC for a vote.
 - (g) If a simple majority of COCTYC members do not vote for adoption, it will be returned for a section by section vote and the same subsequent procedures will be repeated until it is adopted by the COCTYC.
3. The individuals filling the offices of secretary/editor, treasurer/college sponsor chair, industrial sponsor chair and membership chair at the time of adoption of this document by the COCTYC will be considered to be in their first term. The dates of expiration of their terms will remain the same as for their current appointments.
4. Future revisions of this document will require a simple majority of the votes cast by mail ballot of the Executive Committee.

A CHRONOLOGICAL RECORD OF 2YC₃ MEETINGS

Chicago, IL	University of Illinois, Navy Pier Campus 1st Round table	September , 1961
Takoma Park, MD	Montgomery Junior College 2nd Round table	March 24, 1962
Torrance, CA	El Camino College 3rd Annual	March 30, 1963
Philadelphia, PA	Technical Institute of Temple University 4th Annual	April 4, 1964
Dearborn, MI	Henry Ford Community College 5th Annual	April 1965
Torrance, CA	El Camino College 1st Western Regional	November 19, 1965
Memphis, TN	Memphis State College 1st Southern Regional	December 4, 1965
Pittsburgh, PA	Point Park Junior College 6th Annual	March 26, 1966
Lawrence, KS	University of Kansas 1st Midwestern Regional	October 28-29, 1966
Miami, FL	Miami-Dade Junior College 7th Annual	April 7-8, 1967
Pasco, WA	Columbia Basin College 2nd Western Regional	June 16-17, 1967
Little Rock, AK	Marion Hotel 2nd Southern Regional	December 9, 1967
Philadelphia, PA	Community College of Philadelphia 1st Eastern Regional	February 2-3, 1968
San Francisco, CA	City College of San Francisco 8th Annual	March 29-30, 1968
Boston, MA	Franklin Institute of Boston 2nd Eastern Regional	October 11-12, 1968
Minneapolis, MN	Metropolitan State Junior College 9th Annual	April 11-12, 1969
Salt Lake City, UT	University of Utah 3rd Western Regional	June 13-14, 1969
New York, NY	Bronx Community College 10th Annual	September 5-6, 1969

Fullerton, CA	Fullerton Junior College 4th Western Regional	October 3-4, 1969
Tulsa, OK	Oral Roberts University 4th Southern Regional	December 3-4, 1969
Columbus, OH	Ohio State University 2nd Midwestern Regional	June 5-6, 1970
Chicago, IL	Wilbur Wright College 3rd Midwestern Regional Twenty-third Conference	September 11-12, 1970
New Orleans, LA	Delgado College 5th Southern Regional Twenty-fourth Conference	December 4-5, 1970
Cantonville, MD	Cantonville Community College 3rd Eastern Regional Twenty-fifth Conference	February 5-6, 1971
Los Angeles, CA	Los Angeles Trade Technical College 11th Annual National Twenty-sixth Conference	March 26-27, 1971
St. Louis, MO	Meramec Community College 4th Midwestern Regional Twenty-seventh Conference	October 29-30, 1971
San Antonio, TX	San Antonio College 6th Southern Regional Twenty-eighth Conference	December 3-4, 1971
Boston, MA	Franklin Institute of Boston 12th Annual National Twenty-ninth Conference	April 7-8, 1972
Corvallis, OR	Oregon State University 5th Western Regional Thirtieth Conference	June 16-17, 1972
New York, NY	New York City Community College 4th Eastern Regional Thirty-first Conference	August 25-26, 1972
Oakland, CA	Laney College 6th Western Regional Thirty-second Conference	October 20-21, 1972
Dallas, TX	El Centro College 13th Annual Thirty-third Conference	April 6-7, 1973

Cleveland, OH	Cuyahoga Community College - Metropolitan 5th Midwestern Regional Thirty-fourth Conference	May 11-12, 1973
Montreal, Quebec	College Ahuntsic 1st Canadian Thirty-fifth Conference	June 7-8, 1973
Chicago, IL	Loop College - Chicago City College 6th Midwestern Regional Thirty-sixth Conference	August 24-25, 1973
Rochester, NY	Monroe Community College 5th Eastern Regional Thirty-seventh Conference	October 12-13, 1973
Pasadena, CA	Pasadena City College 14th Annual National Thirty-eighth Conference	March 29-30, 1974
Tallahassee, FL	Tallahassee Community College 7th Southern Regional Thirty-ninth Conference	May 10-11, 1974
Regina, Sask.	University of Saskatchewan 2nd Canadian Fortieth Conference	June 6-7, 1974
San Bruno, CA	Skyline Community College 7th Western Regional Forty-first Conference	October 18-19, 1974
Houston, TX	University of Houston - Downtown Campus 8th Southern Regional Forty-second Conference	December 6-7, 1974
Kansas City, MO	Penn Valley Community College 7th Midwestern Regional Forty-third Conference	February 7-8, 1975
Philadelphia, PA	Manor Junior College 15th National Forty-fourth Conference	April 2-3, 1975
Toronto, Ontario	George Brown University 3rd Canadian Forty-fifth Conference	May 28-29, 1975
Vancouver, WA	Clark Community College 8th Western Regional Forty-sixth Conference	September 19-20, 1975
Memphis, TN	Shelby State Community College 9th Southern Regional Forty-seventh Conference	October 31- November 1, 1975

Parma, OH	Cuyahoga Community College-Western Campus 8th Midwestern Regional Forty-Eighth Conference	March 5-6, 1976
New York, NY	Bronx Community College 16th National Forty-ninth Conference	April 2-3, 1976
London, Ontario	Fanshaw College 4th Canadian Fiftieth Conference	June 10-11, 1976
San Francisco, CA	City College of San Francisco 9th Midwestern Regional Fifty-first Conference	August 27-28, 1976
Kansas City, MO	Penn Valley Community College 9th Midwestern Regional Fifty-second Conference	October 29-30, 1976
New Orleans, LA	Delgado Community College 17th National Fifty-third Conference	March 18-19, 1977
Newark, DL	Brandywine College 6th Eastern Regional Fifty-fourth Conference	April 22-23, 1977
Montreal, Quebec	CEGEP DuVieux - Montreal 5th Canadian Fifty-fifth Conference	June 1-2, 1977
Vincennes, IN	Vincennes University Junior College 10th Midwestern Regional Fifty-sixth Conference	October 7-8, 1977
Morrow, GA	Clayton Junior College 10th Southern Regional Fifty-seventh Conference	December 9-10, 1977
Santa Ana, CA	Santa Ana College 18th National Fifty-eighth Conference	March 10-11, 1978
Baltimore, MD	Essex Community College 7th Eastern Regional Fifty-ninth Conference	April 7-8, 1978
Miami, FL	Miami-Dade Community College New World Center Campus (Downtown Campus) 11th Southern Regional Sixtieth Conference	September 8-9, 1978
Phoenix, AZ	Phoenix College Sixty-first Conference	November 10-11, 1978

Lincroft, NJ	Brookdale Community College Sixty-second Conference	March 3-4, 1979
Columbus, OH	Columbus Technical Institute Sixty-third Conference	May 11-12, 1979
Largo, MD	Prince Georges Community College Sixty-fourth Conference	September 7-8, 1979
Colorado Springs, CO	Pikes Peak Community College Sixty-fifth Conference	October 19-20, 1979
Houston, TX	North Harris County College Sixty-sixth Conference	March 21-22, 1980
Chicago Heights, IL	Prairie State College Sixty-seventh Conference	April 25-26, 1980
San Francisco, CA	City College of San Francisco Sixty-eighth Conference	August 22-23, 1980
Warwick, RI	Rhode Island Junior College Sixty-ninth Conference	November 7-8, 1980
Atlanta, GA	Atlanta Junior College Seventieth Conference	March 27-28, 1981
Southfield, MI	Oakland Community College - Southfield Seventy-first Conference	May 8-9, 1981
Rochester, NY	Monroe Community College Seventy-second Conference	October 16-17, 1981
Charlotte, NC	Central Piedmont Community College Seventy-third Conference	December 4-5, 1981
Las Vegas, NV	Clark County Community College Seventy-fourth Conference	March 26-27, 1982
Bloomington, MN	Normandale Community College Seventy-fifth Conference	May 7-8, 1982
Overland Park, KS	Johnson County Community College Seventy-sixth Conference	September 10-11, 1982
New York, NY	New York City Technical College Seventy-seventh Conference	October 22-23, 1982
Seattle, WA	Seattle Central Community College Seventy-eighth Conference	March 18-19, 1983
Birmingham, AL	Jefferson State Junior College Seventy-ninth Conference	April 22-23, 1983

Santa Clara, CA	Mission College Eightieth Conference	September 30- October 1, 1983
Alexandria, VA	Northern Virginia Community College Alexandria Campus Eighty-first Conference	December 2-3, 1983
Hurst, TX	Tarrant County Jr. College Northeast Campus Eighty-second Conference	March 2-3, 1984
St. Louis, MO	St. Louis Community College - Florissant Valley Eighty-third Conference	April 6-7, 1984
Storrs, CT	University of Connecticut, Storrs 8th Biennial Chemical Education Conference Eighty-fourth Conference	August 5-10, 1984
San Diego, CA	San Diego College Eighty-fifth Conference	October 1984
Miami, FL	Miami-Dade Community College South Campus Eighty-sixth Conference	April 26-27, 1985
Waukesha, WI	University of Wisconsin, Waukesha Eighty-seventh Conference	May 24-25, 1985

March 1985

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Redmore, Fred (1987) Highland Community College
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87th 2YC3 CONFERENCE

Waukesha, WI

May 24-25, 1985

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87th 2YC₃ CONFERENCE

Waukesha, WI May 24-25, 1985

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Enrollment Improves at 2-Year Colleges

Virginia System May Reverse Slide

Associated Press

RICHMOND—The decline in enrollments in the Virginia Community College System could be slowing, said its chancellor, who has reported increases at five of the schools this fall.

"Let's hope that indicates a trend," said John P. Hockaday. He said 18 two-year colleges either have not reported or have not yet had registrations.

Last year the system saw an 8.6 percent enrollment drop, including a decrease at Northern Virginia Community College, the largest school in the system. Registration there opened late last week.

Hockaday said increases were reported at Eastern Shore, Lord Fairfax, Germanna, Blue Ridge and Patrick Henry community colleges.

Eastern Shore at Melfa had the biggest increase at 15 percent, but the figures were still being tallied at Patrick Henry in Martinsville, and might reach as high as 20 percent there, he said.

Last year, Eastern Shore and Patrick Henry were two of only three of the colleges to show enrollment increases.

The chancellor released the figures at a news conference Wednesday in advance of a week session by the State Board for Community Colleges. The board is considering a productivity report on the colleges.

by the State Council of Higher Education for Virginia.

Hockaday said he will recommend that the board accept the report, even though it found that 12 percent of the community college system's programs—71 programs in all—did not meet a productivity standard based on number of students enrolled and degrees certificated awarded.

Hockaday said the varying nature of the colleges and the mission of the system in making programs widely accessible require some operations that are not fully productive.

"Our colleges people must walk always that tightrope of programs where high-productive programs carry low-productive programs," he said.

To eliminate all programs with few students is foolishness, he said.

He said he will recommend that the board eliminate nonproductive programs that are not critical to the system.

Md.'s Villa Julie Has Its Best Year

Associated Press

BALTIMORE—While many colleges are recording declines in enrollments, Villa Julie College in suburban Baltimore is part of a growing number of commuter colleges that are bucking the trend.

Set in the middle of horse country in GreenSpring Valley, the campus is about 20 minutes from downtown Baltimore. It has a student population of about 1,080 students, the highest in the 83-year history of the college, Villa Julie officials said.

To accommodate its growing student population, Villa Julie last week opened a \$2.5 million building that will include additional classrooms, laboratories and faculty offices.

President Carolyn Manuszak attributes the college's growth to its quality education in marketable areas and its good track record on job placement.

"Our areas of expertise are the areas where there are the jobs," she said. "We have 10 employment centers for each graduate, and [in some areas] such as executive assistant and office automation specialists, it's even higher."

The private two-year college offers 80 programs, including associates of arts degrees in business administration, accounting, geology, travel and tourism and court report-

ing, as well as arts and sciences for those who plan to move on to other colleges to complete their bachelor's degree, Manuszak said.

Villa Julie offers a bachelor's degree in computer information systems, one of its most popular areas, and paralegal training, Manuszak said.

Students can major in prelaw, prenursing and pre dental hygiene, and the school has affiliations with universities that offer degrees in those areas, she said.

Cost might be another factor in the school's growing popularity, she said. Full-time tuition is \$3,660 a year, about half the cost of private schools, she said.

Part-time students pay \$85 a credit hour. There is no boarding on campus.

While there has been a 6.2 percent increase in full-time students, two-thirds of Villa Julie's students are part time, Manuszak said.

About one-third of the students are age 25 and older, and about 14 percent have a bachelor's or master's degree but are looking for more marketable skills, she said.

Despite the general decline in college attendance, there has been an increase in the past 10 years in the number of part-time students attending Maryland colleges, such as Villa Julie, said Joseph Popovich, director of research and planning for the state Board of Higher Education.

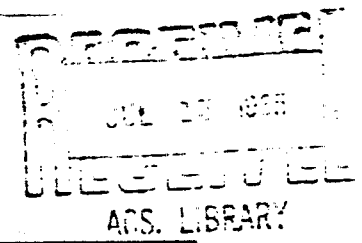
About 55 percent of the part-time students are women, most are age 30 or older and are returning to school to complete a degree or take job-oriented courses, he said.



AACJC LETTER

AMERICAN ASSOCIATION OF COMMUNITY AND JUNIOR COLLEGES

An award-winning national newsletter for community, technical, and junior colleges.
Dele Parnell, Editor Sue Friedman, Associate Editor



July 9, 1985 -- No. 150

Dear Colleague:

Corporate
Gifts-
in-
Kind

The Council for Financial Aid to Education, Inc., is a nonprofit service organization dedicated to promoting greater voluntary support of higher education, particularly from the business community. The spring 1985 CFAE newsletter, "For College Presidents," reports on a sampling of corporate giving to higher education. More than one-third of the sample made gifts-in-kind during 1984 with a total market value at close to \$100 million. Equipment donated to higher education seems to serve four major purposes:

SUPPLEMENTS
Associate Degree Campaign
College Executives Brief
Going After The \$\$\$\$
Metrics Brief
Student Retention Brief

- helps higher education modernize its out-of-date laboratory apparatus,
- provides students with indispensable learning experiences on up-to-date devices,
- supports the country's crucial need to produce an ever-growing technically literate citizenry, and
- permits philanthropically minded companies to receive tax deductions while leaving their logos on donated equipment.

For more information on the newsletter or CFAE, contact: Council for Financial Aid to Education, Inc., 680 Fifth Ave., New York, NY 10019, 212/541-4050.

Situation
Improving
for
Our
Colleges

It has been tough sledding to get more of these corporations to recognize community, technical, and junior colleges in their giving programs. But the situation is improving, and more and more corporations are beginning to appreciate the fact that fifty-five percent of all college freshmen are getting their collegiate start in a two-year college.

Let us know of the breakthroughs you are experiencing in corporate giving. We have included a few examples in this Letter.

Metro-
politan
Life
Foundation

The Metropolitan Life Foundation will award "strengthening grants" to community, technical, and junior colleges through a three-year program designed to help schools cope with such problems as curriculum changes, demographic shifts, and tight finances. Two-year colleges accredited by the North Central Association of Colleges will be the only colleges eligible for 1985 awards. The application deadline is October 25, 1985.

Opportunity With Excellence

NATIONAL CENTER FOR HIGHER EDUCATION

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

202/293-7050

FACT-FILE

Statewide Agencies for 2-Year Colleges

Following are the statewide boards responsible for two-year colleges in 49 states and four territories, together with the names of their executive officers. Coordinating boards are indicated by (C), and governing boards are indicated by (G).

ALABAMA

State Department of Postsecondary Education (G)
Knox Hall
419 South Perry Street
Montgomery 36104
Charles L. Payne, chancellor
(205) 834-3200

ALASKA

Division of Community Colleges, Rural Education and Extension (G)
University of Alaska
Mailing address: 3605 Arctic Boulevard, No. 420
Anchorage 99503
Alvin Olsson, interim chancellor
(907) 564-3626

ARIZONA

State Board of Directors for Community Colleges of Arizona (G)
1646 West Jefferson, Suite 254
Phoenix 85007
Wayne M. McGrath, executive director
(602) 255-4037

ARKANSAS

Department of Higher Education (C)
1301 West Seventh Street
Little Rock 72201
Thomas M. Spencer, Jr., deputy director
(501) 371-1441

CALIFORNIA

Board of Governors, Chancellor's Office (C)
California Community Colleges
1107 Ninth Street
Sacramento 95814
Gerald C. Hayward, chancellor

ILLINOIS

Illinois Community College Board (C)
509 South Sixth Street
Springfield 62701
David R. Pierce, executive director
(317) 765-0123

INDIANA

Indiana Commission for Higher Education (C)
143 West Market Street
Indianapolis 46204
Clyde Ingie, commissioner
(317) 232-1900

IOWA

Iowa State Board of Public Instruction (C)
Grimes State Office Building
Des Moines 50319
Robert B. Benton, superintendent of public instruction
(515) 261-5294

KANSAS

Kansas Department of Education (G)
Community College Section
120 East Tenth Street
Topeka 66612
Sam Newland, director
(913) 296-3047

KENTUCKY

University of Kentucky (G)
102 Breckinridge Hall
Lexington 40508-0066
Charles T. Wethington, Jr., chancellor of the community college system
(606) 257-6607

LOUISIANA

Louisiana Board of Regents (C)
161 Riverside Mall
Baton Rouge 70801
William Arceneaux, commissioner of higher education
(504) 842-4263

AS A RESULT OF THE MERGERS OF THE

NEBRASKA

Nebraska Technical Community College Association (C)
411 South 13th Street, Suite 305
Lincoln 68508
Tom Johnston, executive director
(402) 471-4665

NEVADA

University of Nevada System (G)
405 Marsh Avenue
Reno 89502
Robert M. Barai, chancellor
(702) 784-4901

NEW HAMPSHIRE

Department of Postsecondary Vocational-Technical Education (G)
Statehouse Annex, Room 401
Concord 03301
Mary Pillebury Brown, commissioner
(603) 271-2722

NEW JERSEY

Department of Higher Education (C)
Office of Community Colleges
225 West State Street
Trenton 08625
Narcisa P. Jones, director
(609) 292-4470

NEW MEXICO

Board of Educational Finance (C)
1069 Carrillos Road
Santa Fe 87501
Ted F. Martinax, executive secretary
(505) 827-6300

NEW YORK

Board of Regents (G)
University of the State of New York
State Education Department
Albany 12224
Gordon M. Ambach, commissioner of education

AS A RESULT OF THE MERGERS OF THE

SOUTH CAROLINA

State Board for Technical and Comprehensive Education (G)
111 Executive Center Drive
Columbia 28201
G. William Dudley, Jr., executive director
(803) 758-6919

TENNESSEE

State Board of Regents (G)
1161 Murfreesboro Road
Nashville 37217
Roy S. Nicks, chancellor
(615) 741-4821

TEXAS

Coordinating Board, Texas College and University System (C)
P.O. Box 12788, Capitol Station
Austin 78711
David T. Kelly, director of community college affairs
(512) 475-3413

UTAH

State Board of Regents (G)
3 Trilad Center, Suite 550
Salt Lake City 84180
Don A. Carpenter, associate commissioner for planning, Utah system for higher education
(801) 536-5247

VERMONT

Vermont State Colleges (G)
P.O. Box 359
Waterbury 05676
Hilton A. Wick, interim chancellor
(802) 241-2620

VIRGINIA

Virginia Community College System (G)
P.O. Box 1658
101 North 14th Street
Richmond 23219
Johnas F. Hockaday, chancellor
(804) 225-2116

WASHINGTON

COLORADO

State Board for Community Colleges and Occupational Education (G)
1313 Sherman Street, Room 221
Denver 80203
Donald W. McInnis, director of community colleges (303) 888-3151

CONNECTICUT

Regional Community Colleges (C)
61 Woodland Street
Hartford 06105
Andrew C. McKinley, executive director (203) 548-8789

DELAWARE

Delaware Technical and Community Colleges (G)
P.O. Box 827
Dover 19901
John R. Kozula, president (302) 738-4621

FLORIDA

Florida Department of Education (G)
Division of Community Colleges
310 Collins Building
Tallahassee 32301
Clark Maxwell, Jr., executive director (904) 488-1721

GEORGIA

Board of Regents of the University System of Georgia (G)
244 Washington Street, S.W.
Atlanta 30334
Haskin R. Pevsler, vice-chancellor of research and planning (404) 656-2213

HAWAII

University of Hawaii (G)
2227 Dole Street
Honolulu 96822
Joyce S. Tsunoda, chancellor for community colleges (808) 848-7313

IDaho

State Board of Education and Board of Regents of the University of Idaho (G)
Len B. Jordan Building, Room 207
650 West State Street
Boise 83720
Charles D. McQuillen, executive director of state board of education (208) 334-2270

Note: South Dakota and the District of Columbia have no public, two-year colleges.

(518) 474-6844

NORTH CAROLINA

State Department of Community Colleges (C)
116 West Edenton Street
Raleigh 27611
Robert W. Scott, state president (919) 733-7051

NORTH DAKOTA

State Board of Higher Education (G)
State Capitol Building, 10th floor
Bismarck 58505
John A. Richardson, commissioner of higher education (701) 224-4110

OHIO

Ohio Board of Regents (C)
30 East Broad Street
Columbus 43215
Elsaine H. Hairston, vice-chancellor for academic and special programs (614) 468-6000

OKLAHOMA

Oklahoma State Regents for Higher Education (C)
500 Education Building
State Capitol Complex
Oklahoma City 73106
J.A. Leone, chancellor (405) 521-2444

OREGON

Oregon Department of Education (C)
700 Pringle Parkway, S.E.
Salem 97310
Robert E. Hamill, associate superintendent, office of community college services (503) 378-8549

PENNSYLVANIA

State Board of Education (G)
333 Market Street, 5th floor
Harrisburg 17128-0333
James Oliver Hunter, commissioner for higher education (717) 787-5041

RHODE ISLAND

Community College of Rhode Island (C)
400 East Avenue
Warwick 02886
Edward J. Liston, president (401) 828-2188

319 Seventh Avenue
Olympia 98504

John N. Terrey, executive director

(206) 753-7412

WEST VIRGINIA

West Virginia Board of Regents (G)
650 Kanawha Boulevard, East
Charleston 25301
Douglas Call, director of community colleges and vocational education (304) 348-2101

WISCONSIN

University of Wisconsin (G)
1700 Van Hise Hall
Madison 53706
Katherine Lyall, acting president (608) 282-2321

WYOMING

Wyoming Community College Commission (C)
2301 Central Avenue
Barrett Building, 3rd floor
James R. Randolph, executive director (307) 777-7783

AMERICAN SAMOA

Board of Higher Education (C)
c/o American Samoa Community College
P.O. Box 2809
Pago Pago 96709
Eneliko Soti, president (684) 699-9165

GUAM

Pacific Postsecondary Education Council (C)
P.O. Box 23087
GMF 96921
William A. Kinder, executive director (617) 734-2821

MICRONESIA

Board of Regents (G)
College of Micronesia
Drawer "F"
Ponape, Eastern Caroline Island 96941
Singeru Singeo, executive director
Phone: 482 (contact through international operator)

PUERTO RICO

Administration of Regional Colleges (C)
University of Puerto Rico
P.O. Box 25189 Venezuela Cont. Sta.
Rio Piedras 009285189
Luis C. Rodriguez-Morales, head registrar (809) 758-3454

Minority Shortage in Health Field Linked to Aid

A chronic shortage of minorities in the health professions will only get worse if medical education programs aiding low-income students—many of whom are minorities—are eliminated or cut back, say representatives of the health education community.

But these programs face continuous opposition by the Reagan Administration, whose fiscal 1986 budget proposal contained drastic cuts in health professions student aid. Although the House and Senate so far have rejected those cuts, the programs are by no means safe, according to the Association of American Medical Colleges (AAMC).

Last year, a bill to reauthorize the health assistance programs under Title VII of the Higher Education Act was killed by President Reagan after being approved by Congress. This year, a similar bill is making its way through Congress but will probably be vetoed again by the President, said David Baime, a legislative analyst for AAMC. At least two major Title VII programs will expire within the next three years if they are not reauthorized through legislation, he added.

The Administration's position is that health care programs are no

longer needed. "Since the supply of health care professionals is now adequate, direct federal subsidies for clinical health professions training are no longer essential," the Administration's fiscal 1986 budget stated.

The Administration claims that between 1965, when federal subsidies for health professions began, and 1983, the supply of physicians grew by 49 percent. Surpluses for most health care disciplines are projected by the Administration through the 1990s. But the AAMC says Administration charges of a physician surplus are "ludicrous."

Aid to health professions students "does not in any way encourage the production of more physicians; it simply promotes equity of access to medical training," said Baime.

Dan Lawlor, who recently completed his first year at the Georgetown University School of Medicine, addressed the alleged surplus more bluntly. "That glut [of physicians] may exist in Potomac, MD [a wealthy Washington, DC, suburb], but it certainly does not exist on 14th Street [an inner city ghetto]," Lawlor told members of the House Postsecondary Education Subcommittee recently. "If the Reagan

proposals are approved, it will no doubt mean that the good people of Potomac will continue to receive the best of medical care. As for the poor citizens on 14th Street, I am less optimistic."

Lawlor's concerns for the disadvantaged were the subject of a recent column by David Satcher, president of Meharry Medical College, a private, historically black medical school in Tennessee. He said the inequities in the health status of minorities—the life expectancy of American blacks is five years less than it is for whites, for example—is related to the shortage of minority physicians.

According to AAMC, only 3 percent of all physicians are black; 4 percent are Hispanic, and 86 percent are white.

"The simple fact is that minority doctors are more inclined than their majority colleagues to practice where the need is greatest," Satcher wrote in *The Washington Post*. He noted that surveys of Meharry graduates found that 75 percent of them practice in underserved areas. AAMC surveys reveal similar percentages.

In answer to the Administration's view that a physician surplus warrants (continued on page 8)

FACTS IN BRIEF

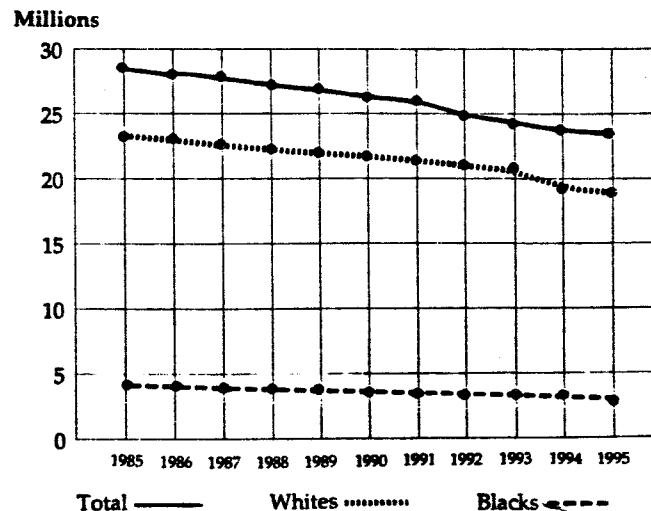
College-Age Population Is Declining

Over the next decade, the traditionally college-age population is expected to decline.

- Between 1985 and 1995, the number of 18- to 24-year-olds will decrease by 18 percent. The number of college-age whites is expected to decrease at a greater rate than blacks during this period (19 percent versus 14 percent).
- Between 1985 and 1990, the white college-age population is expected to decline by 2.6 million, while the black college-age population is expected to decrease by 0.3 million.
- In 1986 alone, the 18- to 24-year-old population is expected to decline by 3 percent, from 28.7 million to 27.8 million.
- Over the next two years, the number of 18- to 24-year-olds will decline by 5 percent.

This profile was compiled by the Division of Policy Analysis and Research, American Council on Education. For further information, call (202) 833-4744.

Projections of the 18- to 24-Year-Old Population



Source: U.S. Bureau of the Census, "Projections of the Population of the U.S. by Age, Sex and Race 1983 to 2000."

June 1985



FROM HOMELESS HOGS TO TWO-PLUS-TWO

What better example of a successful articulation program between colleges and high schools than the one in Kern County?

BY DAVID C. SCOTT

WHAT STARTED AS A SEARCH for a home for hogs in Kern County, California, has resulted in a four-year agriculture curriculum involving Bakersfield College, the Kern High School District, and representatives of forty-eight area agriculture businesses ranging from individual to corporate farms.

By 1987 there will be in place an integrated eleventh- through fourteenth-grade curriculum leading to an associate degree. The curriculum, involving six different agricultural disciplines, will be designed toward defined job competencies at the end of the twelfth, thirteenth, and fourteenth grades—competencies dealing with skills needed in Kern County's agriculture-based economy. It will also involve extensive general education so that transfer to four-year colleges will be a viable option for many of the students enrolled in the program.

Planning and piloting of the curriculum and instructional approaches is being financed by a three-year, \$250,000 grant from the Fund for the Improvement of Postsecondary Education (FIPSE).

The Beginning

In the summer of 1980, eighteen agriculture students who were graduating from area high schools in Kern County found that the site at which students traditionally kept their hogs was no longer available. They contacted their high school agriculture instructors, Jim Slater and Bill Kelly (Kelly is now an agriculture instructor at Bakersfield College), concerning the problem. Slater and Kelly arranged to meet with area farmer Joe Garone to find a possible site. Since there appeared to be concerns beyond helpless,

homeless hogs, that meeting was expanded to include Dan Larios, Bakersfield College instructor (now agriculture department chair); Don Murfin, Kern High School District superintendent; John Collins, then Bakersfield College president; and Jim Young, chancellor of the Kern Community College District of which Bakersfield College is a member. The site was obtained, but Garone, with both administrators and teaching personnel from the two districts present, observed that a more coordinated, planned agriculture curriculum was needed.

Garone has since commented, "Everything seemed to fall in place during that meeting. Staff and administration took my challenge and started to work together." It was at this point the two-plus-two agriculture program began.

It should be noted that for many years both the Kern High School District (comprising ten high schools) and Bakersfield College have had agriculture programs. The high school district operated a large enterprise that included a school farm. Bakersfield College, since 1956 when it moved to its present campus, has offered a strong baccalaureate-level curriculum in agriculture, and courses designed to train people for more immediate employment. The two districts had kept in close touch, but they had not combined forces to supplement and enhance each other's offerings.

California's largest and most important industry is agriculture. Kern County, the area that Bakersfield College serves, is second in California in agricultural production and is the leading county in the nation in farm exports to foreign countries. The agricultural industry is the largest employer in the county.

Career opportunities are expanding rapidly in California as farming operations grow; they are using more capital, tractors, fertilizers, feed, and other such production supplies. In addition, more food is being produced, which in turn requires ad-



Instructors who spent four years planning the joint agriculture program between Bakersfield College, the Kern High School District, and area industry are, from left, Dan Larios, Bakersfield College; Mike Dake, West High; Jim Slater, South High; and Bill Kelly, Bakersfield College. All eyes are on 1987 when, after three years of piloting a curriculum and trying various instructional approaches, there will be in place a fully integrated eleventh-through-fourteenth-grade curriculum leading to an associate degree.

ditional processing techniques, new methods of distribution, and other marketing functions and facilities. Farms and farmers are requiring additional educational, informational, and advisory services. As a result, farms, farm-related companies, and government-service agencies are hiring increasing numbers of young men and women educated in the field of agriculture.

To respond to these area needs, the boards of trustees of the Kern High School District and the Kern Community College District passed a joint resolution in September 1981 authorizing the formation of a joint citizens advisory committee to work with both the high school district and Bakersfield College. The major stated purposes were 1) to advise the districts of the agricultural needs in the county and develop an instructional program that is articulated from high school courses through community college level; 2) to eliminate unnecessary duplication of efforts in instruction and promote the sharing of facilities, equipment, and instructors; and 3) to investigate and promote possible assistance and support of agriculture representatives in the community.

The committee was composed of twelve representatives from the agriculture community and personnel from Bakersfield College and the high school district. The agricultural businesses represented on the committee recommended an active program in field crops, animal production, dairy, irrigation, fertilizers, pesticides, farm machinery, flower production, and ornamental horticulture.

The committee decided to conduct an employment needs assessment survey of the local industry and forty-eight agricultural firms agreed to participate. Faculty members from Bakersfield College and the Kern High School District met with the appropriate people at each of these firms. Interviews averaged an hour in length. Following these interviews the survey instruments were completed by each firm and submitted for compiling and analyzing.

The leading recommendations arising from the survey were that the college and high school should offer agriculture mechanics and equipment

operation as part of their agriculture program; the college administration should channel agriculture curricular funds in those areas of "salable" skills, particularly those involved with agriculture production; and the agriculture business curriculum should be offered emphasizing computer applications, analysis of agriculture markets, and training in supervision and labor management.

The Curriculum

In response to the needs assessment survey and to these meetings, the group determined the curriculum should do the following: 1) offer a career-ladder agriculture training program in the eleventh- through fourteenth-grade level in six areas (agriculture business, animal science, crop science, forestry, mechanical agriculture, and ornamental horticulture) with specific industry-defined job competencies built in at the end of each year; 2) provide an assessment/counseling system that would encourage high school students to consider the program and become qualified for participation in it; 3) develop a training facility operated jointly by the college and the high school district in which a substantial portion of this curriculum would be taught; 4) provide a comprehensive curriculum with appropriate courses in English, mathematics, humanities, and Spanish; and 5) offer a program culminating in a four-year technical arts degree, with a strong general education emphasis so that transfer in the final two years to a four-year college or university would be easily facilitated. (The aforementioned counseling component would assist students in making this change.)

In order to provide an appropriate physical facility, the high school district had purchased an eighty-acre site from the city of Bakersfield for an agricultural training facility. Garone, Murfin, and the city council all cooperated to bring about this purchase. The site and the appropriate buildings are being financed from the sale of the old thirteen-acre school farm site, currently owned by the high school district. Also housed on the eighty-acre site is the high-school-run regional occupational center and Bakersfield Adult School. Some

“ Kern County, the area that Bakersfield serves, is second in California in agricultural production and is the leading county in the nation in farm exports to foreign countries. ”

agriculture courses will be offered through regional occupational programs (ROP), and in addition, existing ROP courses in metal and diesel will be part of the initial agriculture training. Joint operation of the agricultural facility and its concomitant programs has been approved in

principle by the governing boards of the two districts involved. Agriculture industry members in Kern County have contributed the entire \$100,000 cost of preparing the new site and moving equipment and facilities to the agriculture center. They have also paid for an \$80,000 well-drilling operation and will donate equipment for use by the students, particularly in the agriculture mechanics area. Movement from the old Kern High School site to the new jointly operated center is in process.

The movement itself is an example of the cooperative nature of the project. When the author of this article visited the old site, community college instructors Dan Larios, Bill Kelly, and Bill Demkey (agriculture mechanics instructor hired in response to the needs reflected in the survey), high school instructors Jim Slater and Mike Dake, and sixty community college and high school students were dismantling all the buildings for reassembly at the new site. Demkey was challenging all visitors to put on overalls and join the operation. On that day local industries donated a welder, a forklift operator, and several trucks to aid the staff in the move.

Though a substantial portion of the agriculture curriculum will be offered at the joint agricultural center, many agriculture courses and most of the general education curriculum will be offered at the participating high schools and Bakersfield College. Students will continue to be enrolled through their high school and Bakersfield College. The joint agriculture center will facilitate appropriate curriculum and instructional programs between the participating institutions; it will not serve as an autonomous four-year institution.

The curriculum will not be designed to produce a narrow, "vocalized" agricultural student, but rather to produce a student who has achieved both defined agricultural competencies and additional competencies in English, the humanities, and mathematics at the end of each year of the program. This curricular approach should, therefore, enable the student to exit from the program into related career fields or to move into a traditional general education program with a minimum loss of educational credits.

Curricular planning for the project is being financed by a three-year FIPSE grant. FIPSE has made as one of its national priorities cooperative programs between high schools and colleges. The FIPSE funds will finance workshops during the summers of 1985, 1986, and 1987. Participants will include six agriculture instructors from Bakersfield College, four agriculture instructors from the high schools, and two instructors from the two districts for English, mathematics, and the humanities. The instructors will meet six hours a day, four days a week, for six weeks during each of the three summers.

According to agriculture department chair Dan Larios, who is also FIPSE project director:

Planning an integrated, four-year curriculum totally responsive to community needs is a complex process. The FIPSE funds make it possible to think, to plan, and to develop a total team concept that will make the students and the local community true winners.

The desired results for those completing the four-year program would be the awarding of an associate of science degree that is recognized by employers as requisite for a specific field of employment in agriculture.

Employment and Careers

The two-plus-two program meets some of the needs enunciated by the National Task Force to Redefine the Associate Degree, which was established in 1982 with funding provided by the American Association of Community and Junior Colleges (AACJC) and the National Endowment for the Humanities (NEH). The task force surveyed community colleges nationwide, as well as high schools, large corporations, academic associations, and state higher education officers throughout the country. Their report, presented at the 1983 annual meeting of AACJC and later published as *Redefining the Associate Degree* by Leslie Koltai, concluded in part that there must be more vigor in educational programs leading to the associate degree, as well as more structure in curriculum with more coursework and more specificity in degree designation; and that colleges should work with business and industry to identify needed competencies. The competency-based associate degree, with testing throughout the program from entry to graduation, would enhance the graduates' success in careers and provide business and industry with a well-trained labor force.

Kern chancellor Jim Young has been one of the national leaders in the community college two-plus-two movement and sees the program spreading far beyond agriculture. Young says:

This project is precisely on target for high school/college cooperative endeavors. Not only will a first-rate training program be established to improve the quality of agriculture training, but the basic courses in technical mathematics, English, and the humanities will be in place for other articulated programs in nursing, business, electronics/data processing, industrial technology, and consumer education.

In working at the national level with Dale Parnell, president of the American Association of Community and Junior Colleges, a network of colleges have begun interchanges about their successes and tribulations in establishing sophisticated, four-year technical training programs which begin at the eleventh year of school.

Bakersfield area farmer Joe Garone was instrumental in making the two-plus-two agriculture program a reality. Agriculture representatives to the program, led by Garone, have since organized into the Kern Agriculture Foundation, which lends guidance to curricular and faculty planning and seeks further industry donations, in funds and materials, for the program.



Parnell, nationally, has called for a two-plus-two tech-prep/associate degree program that is intended to parallel the current college-prep/baccalaureate degree programs. He states:

Beginning with the junior year in high school, students will select the tech-prep program (even as they now select the college-prep program) and continue for four years in a structured and closely articulated curriculum. They will be taught by high school teachers in the first two years and will have access to college personnel and facilities when appropriate. Built around career clusters and technical systems study, such a tech-prep approach will help students avoid the pitfalls of more short-term and narrowly delineated job training.

Commenting on the Bakersfield two-plus-two project, Parnell said:

This program addresses one of the great gaps in education. We simply must begin the work of better curricular articulation between high schools and colleges. Jim Young is a skillful leader and the Kern Community Colleges have the expertise to set a pace for the nation with the project.

Bakersfield College president Richard L. Wright has commented on the program:

This program constitutes a common-sense approach to vocational education and a viable model for the future. Students will actually begin a career path in their junior year of high school. The construction of the curriculum is unique in that at the end of the students' senior year of high school and the freshman and sophomore years in the community college, they will have certifiable, industry-defined skills that will lead directly to employment.

Kern High School superintendent Don Murfin stresses:

The extensive cooperation between the two school districts has been very rewarding. Eleven Kern High School District staff members have been meeting for three years with Bakersfield College staff and agricultural community members to deal with current and future concerns in the agriculture area. It is interesting that several of the community college personnel were former Kern High School District employees.

Within the courses at the new center, application and extension instructional activities will be available; such practical experiences cannot be offered at individual home campuses. The tremendous variety of options for certificates of mastery, transfer to other training programs, and transfer to other institutions of higher learning will be more than adequate for assisting students in pursuing their personal career options.

Continued Local Industry Support

While the move to the new farm site and the planning of the curriculum were going on, the agriculture representatives organized into the Kern Agriculture Foundation. Purpose of the foundation is to give ongoing guidance to curricular and faculty planning for the program and to continue to obtain industry donations for the program. Joe Garone, who chairs the group, recently finalized the details for the donation of 15,000 feet of pipe for the new farm from a local oil company.

Other members of the newly formed foundation, many of whom were also on the original advisory committee, are equally enthusiastic.

Norm King of Jackson-Perkins, one of the largest national producers of roses, said; "I ex-



pect the two-plus-two program to provide me with more qualified and motivated employees in technical and mechanical fields."

"The agriculture industry needs an education program that acquaints students with both production agriculture and its related technical skills in a well-integrated program," said John Lake of Rain for Rent Irrigation Company.

Mike Antongiovanni of MASCO Enterprises, a pump company, said, "The program gives employers a chance to communicate to the schools their needs for the type of skills required of future employees and to get directly involved with the improvement of their school system and take pride in that improvement."

Jack Pandol of Pandol Farms said, "I am new to this board, but when I was made aware of the concept and purpose, my first reaction was great idea! It will fulfill a need for young, competent personnel."

"The irrigation industry, in regards to computers in the marketplace, irrigation design, theory of water hydraulics, is in its infancy. Education in this market is essential," said Dennis Benducci of Kern Turf Supply.

Jack Hunt of Tejon Ranch said, "The program is a source of opportunity for students at an early stage to be exposed to opportunities and skills needed to move into the local economy."

Angelo Mazzei of Mazzei Injector Corporation, maker of fertilizer and spray injectors, said, "Not only will the two-plus-two program be more cost effective by consolidating the agricultural programs under a common leadership, but more important, the responsiveness of the program to the changing agricultural industry needs will produce a better qualified, prepared, and employable individual."

Bakersfield College, the Kern High School District, and industry plan to continue to pool their personnel and financial resources to make the agriculture two-plus-two-program a success locally and an example to the nation. Plans are already under way to expand the concept to electronics, business, and some areas of the health care field. The ROP center and adult school will be involved in this expansion.

The hogs, one of the primary instigators of the program, are still alive and well at the site found for them in 1980.



To provide students in the program with an adequate training facility, the Kern High School District purchased an eighty-acre site from the city of Bakersfield. The site and the erection of buildings are being financed from the sale of an old thirteen-acre school farm site, where college and high school students are working together to dismantle buildings for reassembly at the new facility.



David C. Scott is dean of administrative services at Bakersfield College in Bakersfield, California.

GOING AFTER THE \$\$\$\$

AMERICAN ASSOCIATION OF COMMUNITY AND JUNIOR COLLEGES

MATH-SCIENCE-COMPUTER LEARNING-FOREIGN LANGUAGE FUNDS

● In 1984 Congress enacted Public Law 98-377 to provide assistance to improve elementary, secondary, and postsecondary education mathematics and science programming. Of the \$100 million appropriated for FY 85, some 70 percent of each state's share must be targeted for improving elementary and secondary programs. The remaining 30 percent is to be used for postsecondary programs. Cooperative efforts among high schools and colleges are encouraged.

● Community, technical, and junior colleges are eligible to submit proposals. Control of these funds rests primarily at the state level. Funding available, by state, is listed on the reverse page of this Brief. Since each state is handling this differently, we have listed the name of a contact person in each state who can give information about your state administration of these funds.

These dollars will be sent to the various states by the Department of Education sometime over the next few weeks. It is likely that most Governors will designate the Chief State School Officer as the custodian and administrator of these funds. It is not too early to begin asking questions now at your state education office.

● Eligible postsecondary activities include:

1. Improvement of college math, science, computer learning, and foreign language programs.
2. Teacher training workshops in math, science, computer learning, and foreign languages. (Community colleges are eligible to provide teacher training workshops in these areas.)
3. Special projects targeted to serve historically under-represented and underserved populations in math, science, computer learning, and foreign language programs.
4. Joint projects and consortia of schools and colleges.

For additional federal information on this program, contact: Patricia Alexander, Program Coordinator, U. S. Education Department, 400 Maryland Ave., S. W., F.O.B. #6, Room 4181, Washington, D. C. 20202, 202/472-1762.

A contact person or agency and funding for each state are listed on the back of this page.

Supplement to AACJC Letter No. 142, May 14, 1985.

Opportunity With Excellence

NATIONAL CENTER FOR HIGHER EDUCATION

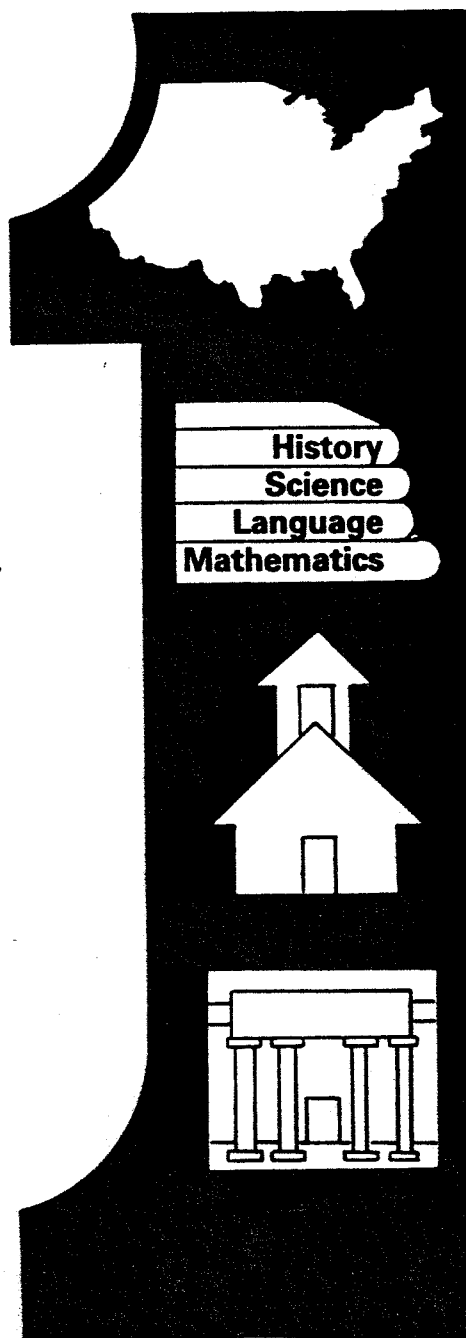
ONE DUPONT CIRCLE, N.W., SUITE 410, WASHINGTON, D.C. 20036

202/293-7050

Funding available by state is listed below as is a contact person for each state (where available) who should be able to refer you to the department administering the funds. (Funds are listed in millions.)

<u>State</u>	<u>Funding</u>	<u>Contact Person</u>
Alabama	\$1.5	Donna J. Snowden, Alabama Clearinghouse, P. O. Box 2939, Montgomery, AL 36105
Alaska	.4	-----
Arizona	1.1	Jo Stephens, AZ State Clearinghouse, 602/255-5004
Arkansas	.9	State Clearinghouse, 506/376-2311
California	8.5	Office of Planning and Research, 916/445-0282
Colorado	1.1	State Clearinghouse, 303/866-2156
Connecticut	1.1	Intergovernmental Review Coord., 203/566-4298
Delaware	.4	Franchine Booth
Florida	3.4	Ron Fahs, 904/488-8114
Georgia	2.2	Charles H. Badger, 404/656-3855
Hawaii	.4	Kent M. Keith, 808/548-3085
Idaho	.4	-----
Illinois	4.2	Tom Bershire, 217/782-8639
Indiana	2.1	Susan J. Kennell, 317/232-5604
Iowa	1.1	Office of Planning and Programming, 515/281-6483
Kansas	.8	Judy Krueger, 913/296-5075
Kentucky	1.4	Kentucky State Clearinghouse, 502/564-2382
Louisiana	1.8	Michael Jefferson, 504/925-3722
Maine	.4	State Planning Office, 207/289-3261
Maryland	1.5	Guy W. Hager, 301/383-2875
Massachusetts	2.0	Executive Office of Communities and Development 617/727-3264
Michigan	3.6	John H. Kevrink, 517/373-0933
Minnesota	1.5	Thomas N. Harren, 612/296-3698
Mississippi	1.1	Marlan Baucum, 601/359-3069
Missouri	1.8	MO Federal Assistance Clearinghouse, 314/751-4834
Montana	.4	Agnes Fipperian, 406/444-5522
Nebraska	.6	Policy Research Office, 402/471-2414
Nevada	.4	Linoa A. Ryan
New Hampshire	.4	David G. Scott, 603/271-2155
New Jersey	2.7	Barry Skokowski, 609/292-6613
New Mexico	.6	Peter C. Pence, 505/827-3885
New York	6.2	New York State Clearinghouse, 518/474-1605
North Carolina	2.3	Chrys Baggett, 919/733-4131
North Dakota	.4	Office of Intergovernmental Assistance
Ohio	4.0	Leonard Roberts, 614/466-0699
Oklahoma	1.2	Office of Federal Assistance Mgt., 405/528-8200
Oregon	1.0	State Clearinghouse, 503/373-1998
Pennsylvania	4.2	Charles Griffiths, 717/783-3700
Puerto Rico	1.7	Nelson Soto, 809/724-7900
Rhode Island	.4	Daniel W. Varin, 401/277-2656
South Carolina	1.3	Danny L. Cromer, 803/758-2417
South Dakota	.4	Jeff Stroup, 605/773-3661
Tennessee	1.7	Tennessee State Planning Office, 615/741-1676
Texas	6.0	Bib McPherson, 512/475-6156
Utah	.7	Michael B. Zuhl, 801/533-5245
Vermont	.4	State Planning Office, 802/828-3326
Virginia	2.0	Robert H. Kirby, 804/786-1925
Washington	1.5	Ken Black, 206/753-2200
West Virginia	.7	Fred Cutlip, 304/348-4010
Wisconsin	1.8	Doris J. Hanson, 608/266-1212
Wyoming	.4	State Planning Coordination, 307/777-7574
District of Columbia	.4	Pauline Schneider, 202/727-6265

All One System



Demographics

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Education,

Kindergarten

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Graduate School

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1985

by Harold L. Hodgkinson



THE INSTITUTE FOR EDUCATIONAL LEADERSHIP, INC.

Acknowledgments

It is a pleasure to record my debt to Mike Usdan and the Institute for Educational Leadership for intellectual, logistical and moral support. Andrew Krieger was very helpful in assembling materials while Louise Clarke facilitated office matters.

The ideas herein are hardly unique; the relations between them, however, are relatively unusual. Frank Newman, Ed Meade, Scott Miller, Bob Payton, Virginia Hodgkinson, the Forum of Education Organization Leaders, and the Higher Education Secretariat have all contributed to my education. Although the project was supported by the Exxon Education Foundation, and that support is gratefully acknowledged, the responsibility for the content of this report rests with the author.

Harold L. Hodgkinson
Washington, D.C.
June, 1985

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Introduction

In the beginning of this report, it is important to inform the reader of one of the major perceptual assumptions behind it. Almost everyone who works in education perceives it as a set of discrete institutions working in isolation from each other. These institutions restrict the age range of their students:

- Nursery schools
- Day care centers
- Kindergartens
- Elementary schools
- Junior High Schools
- Senior High Schools
- Two Year Colleges
- Four Year Undergraduate Colleges
- Universities with Graduate Programs
- Post-Graduate Institutions

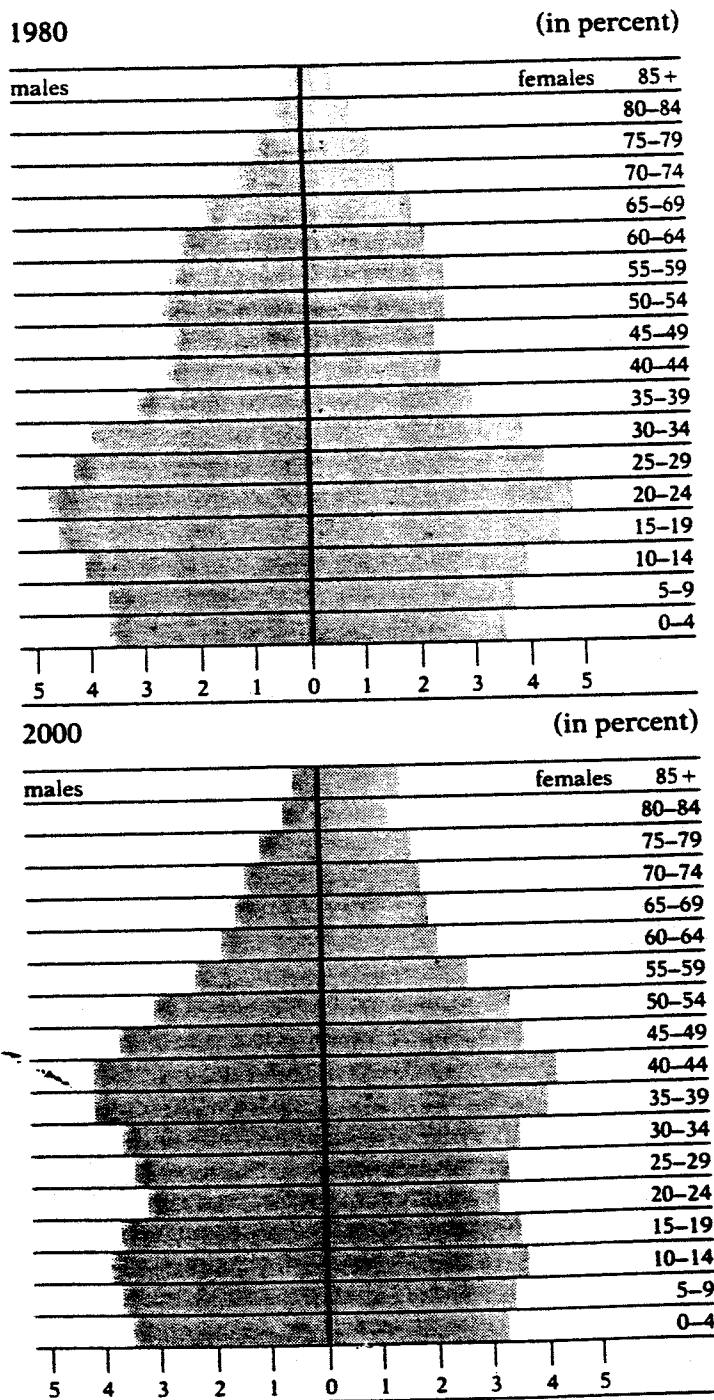
People working in each of the above institutions have virtually no connection with all the others and little awareness of educational activity provided by the total. Because of this, the school is defined as the unit, not **THE PEOPLE WHO MOVE THROUGH IT**. The only people who see these institutions as a system are the students—because some of them see it all. Striking as it seems, virtually all graduate students completed the third grade at an earlier time in their lives. It is our conviction that we need to begin seeing the educational system from the perspective of the people who move through it. This is because changes in the composition of the group moving through the educational system will change the system faster than anything else except nuclear war.

This report is mostly about demographics—changes in population groupings in the U.S. This is a relatively new science (Kenneth Boulding says "Of all the social sciences, demographics is most like the science of celestial mechanics"—we look for the huge unseen engines that make social systems work in certain ways). Demographics provides a truly new perception of educational systems as people in motion. By knowing the nature of those coming into first grade in the U.S., one can forecast with some precision what the cohort of graduating high school seniors will be like twelve years later, and can reveal with very little error what the entering college class will look like in the 13th year. Imagine economists predicting the Dow-Jones 13 years ahead!

It is assumed that if people can begin to SEE the educational system as a single entity through which people move, they may begin to behave as if all of education were related. It seems self-evident that such a perception is good. The educational continuum is much like any other. The concept of a food chain in ecology suggests that any alteration in the food chain will affect all the organisms at all points on the chain. Similarly, the Baby Boom of 70 million people born between 1946 and 1964 moved through the education

system like a very large mouse going through a very small snake—each educational institution had to expand enormously as the Baby Boom came through, then contract with equal severity as the Baby Boom aged and passed on. Changes as drastic as the Baby Boom now await us.

Exhibit 1
The Baby Boom Ages



(AMERICAN DEMOGRAPHICS, JAN. 1983).

Many changes are taking place now in the numbers and composition of the birth and immigrant groups that are beginning to enter elementary schools. These changes will necessarily occupy the educational system for at least the next twenty years. By knowing who is entering the system, and how well they are progressing, everyone at all levels will have time to develop effective programs for the maximum educational gains of all students.

It is our conviction that we need to begin seeing the educational system from the perspective of the people who move through it.

As a result of such knowledge, we educators may yet begin to think of educators at other levels in the "chain" as colleagues. In businesses, when Sales does well, Research and Development cheers, and vice versa. It is vital to Sales that R&D does well—they need each other's success for the success of all. But when elementary reading scores in big city schools go up (as they have almost universally for the last seven years), one has to listen very carefully before it's possible to discern anyone cheering at any university, even though it would be in their self-interest to do so. Similarly, our rapidly aging white middle class will find its retirement income generated by an increasingly non-white work force—a small cheer for increasing educational and occupational attainments by minorities would seem to be in order!

This report is in part a demonstration of the dependency of each educational level for the others. It is hoped that this discussion will be stimulating and beneficial to those who read this report and think about it.

ORGANIZATION:

This report is organized along four major dimensions:

1. Briefing on major demographic trends
2. Retention to high school graduation
3. The transition from school to college
4. Completion of college programs

These seem to be four major characteristics of the educational continuum, in that changes in any one will create changes in the other three. There is literature dealing with each of our four individual dimensions, but there are few models for our attempt to put the four together.

Part One: Briefing on Major Demographic Trends

Before starting on the four themes, it may be useful to describe the demographic changes that form the framework of our analysis.

1. BIRTHS: one of the major tools of demography is differential fertility—some groups have a lot more children than others, and thus are over-represented in the next generations. For example, it is clear that Cubans (1.3 children per female) and whites (1.7 children per female) will be LESS numerous in our future—a group needs about 2.1 just to stay even, which is the case for Puerto Ricans. However, Blacks (2.4), and Mexican-Americans (2.9) will be a larger part of our population in the future. All these young people have to do is GROW OLDER and we have the future. In attempting to explain differences in birth rates by region, we need to keep in mind that these regional differences are mostly ethnic—increased birth rates in the “Sun Belt” are due to a large degree by minority births, while “Frost Belt” declines are caused by the white populations. See Exhibit 2 on page 4.

2. AGE: Mostly because of varying birth rates, the average age of groups in the U.S. is increasingly various—the 1980 Census reveals that the average white in America is 31 years old, the average Black 25, and the AVERAGE Hispanic only 22! It should be easy to see that age produces population momentum for minorities, as the typical Hispanic female is just moving into the peak childbearing years, while the average white female is moving out of them. This is why California now has a “majority of minorities” in its elementary schools, while Texas schools are 46% minority, and half the states have public school populations that are more than 25% nonwhite, while all of our 25 largest city school systems have “minority majorities.”

By the year 2020, most of the Baby Boom will be retired, its retirement income provided by the much smaller age groups that follow it. This is a demographic argument, not an economic one. But if larger numbers are taking out, and much smaller numbers are putting in, the economics are rather clear. For example, in 1950 seventeen workers paid the benefits of each retiree. By 1992, only three workers will provide the funds for each retiree and one of the three workers will be minority.

It is also clear that for the next decade, the only growth area in education will be in adult and continuing education, with increases in elementary schools in certain regions. Perhaps more important is that in 1983 there were more people over 65 in America than there were teen-agers, and (because of the Baby Boom growing old) that condition remains a constant for as long as any of us live. America will simply not be a nation of youth in our lifetime. This is why by 1992, half of all college students will be over 25 and 20% will be over 35.

The mostly white Baby Boom, on the other hand, represents 70 million people who are middle-aged during the 1980's. During the 80's, age groups will exhibit the following changes:

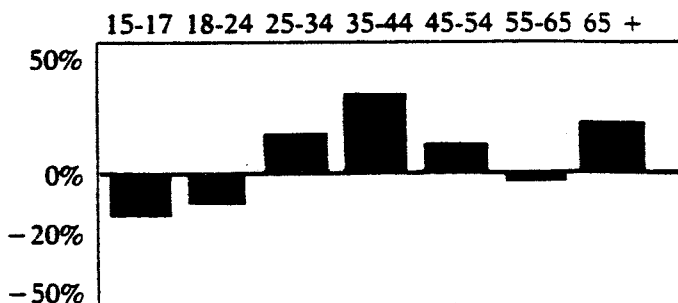


Exhibit 3
Age Group Changes During
The 1980's

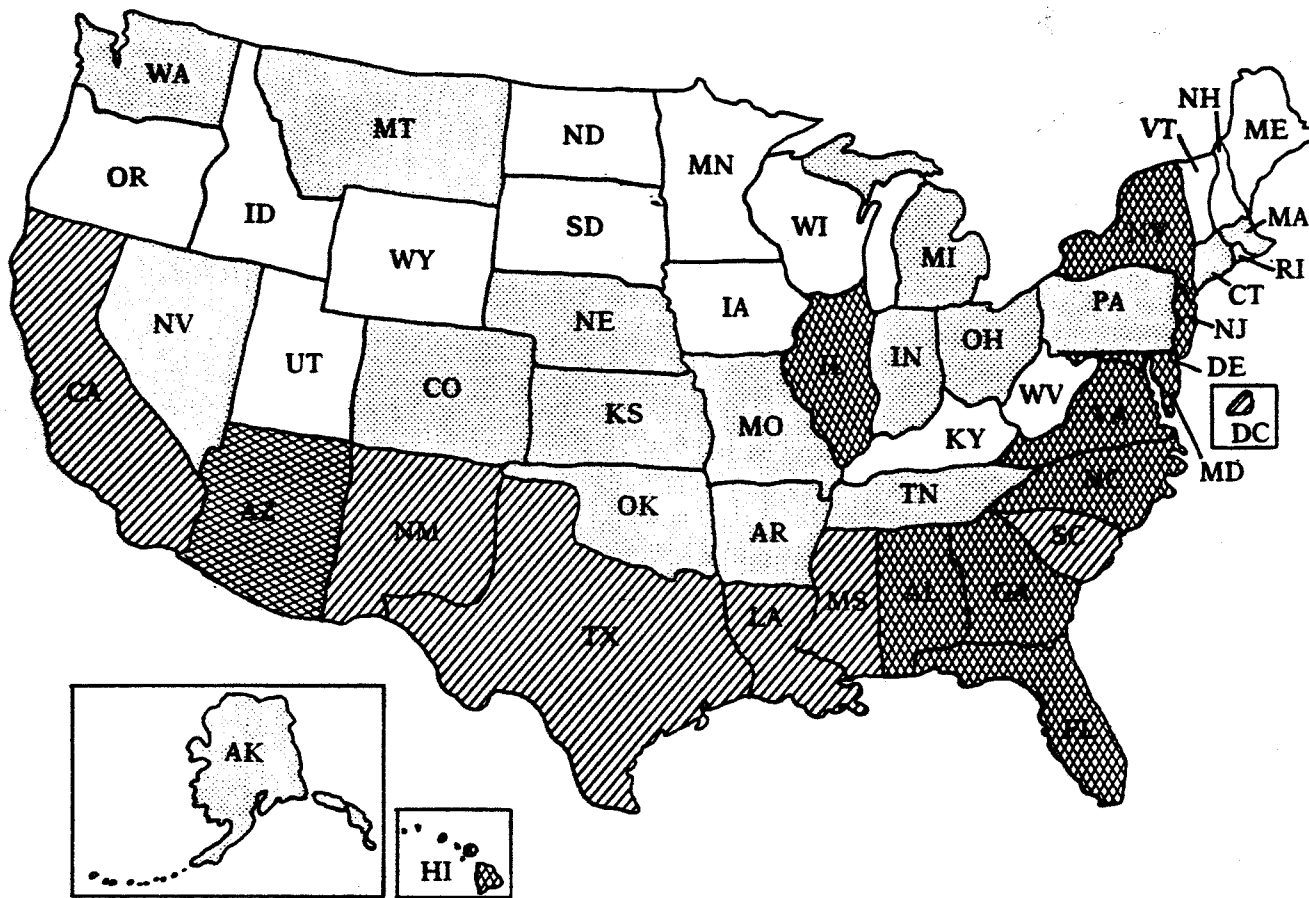
3. FAMILY STATUS: Major changes have taken place in the ways we live together. In 1955, 60% of the households in the U.S. consisted of a working father, a housewife mother and two or more school age children. In 1980, that family unit was only 11% of our homes, and in 1985 it is 7%, an astonishing change.

More than 50% of women are in the work force, and that percentage will undoubtedly increase. Of our 80 million households, almost 20 million consist of people living alone. The Census tells us that 59% of the children born in 1983 will live with only one parent before reaching age 18—this now becomes the NORMAL childhood experience. Of every 100 children born today:

- 12 will be born out of wedlock
- 40 will be born to parents who divorce before the child is 18
- 5 will be born to parents who separate
- 2 will be born to parents of whom one will die before the child reaches 18
- 41 will reach age 18 “normally”

The U.S. is confronted today with an epidemic increase in the number of children born outside of marriage—and 50% of such children are born to teen-age mothers. Although the percentage of Black teen-age girls who have children outside of marriage is higher than that of white girls, comparisons with other nations indicate that a white teen-age female is twice as likely to give birth outside of marriage as in any other nation studied. The situation is most striking with very young mothers, age 13 and 14. Indeed, every day in America, 40 teen-age girls give birth to their THIRD child. To be the third child of a child is to be very much “at risk” in terms of one's future. It appears that sexual activity among the young is no more frequent here than elsewhere; the major difference is the inability of American youth to get access to informa-

Exhibit 2
Minority Enrollment as Percent of Public
Elementary/Secondary School Enrollment,
by State



- Less than 10.0 percent
- ◻ 10.0 to 24.9 percent
- ▣ 25.0 to 34.9 percent
- ▨ 35.0 percent or more

Percent minority enrollment in public elementary secondary schools was generally greatest in the Southern and Southwestern States and in California. The percent black enrollment was highest in the Southern States while the percent Hispanic enrollment was highest in New Mexico, Texas, California, and Arizona.

(The Condition of Education, 1984 edition. A Statistical Report by the National Center for Education Statistics.)

tion about contraception. Information about abortion is similarly restricted, although the variations across states are wide—Mississippi reports 4 abortions per 1,000 teen-age live births, while New York reports 1,200 abortions compared to 1,000 teen-age live births.

There is a particular aspect of this situation that is vital—teen-age mothers tend to give birth to children who are premature, due mostly to a lack of physical examinations and to their very poor diet while pregnant. Prematurity leads to low birth weight, which increases these infants' chances of major health problems due to the lack of development of the child's immune system. Low birth weight is a good predictor of major learning difficulties when the child gets to school. This means that about 700,000 babies of the annual cohort of around 3.3 million births are almost assured of being either educationally retarded or "difficult to teach." This group is entering the educational continuum in rapidly increasing numbers.

Indeed, every day in America, 40 teen-age girls give birth to their THIRD child.

Several other family factors are important to cite—first, with over half of the females in the work force (and almost 70% if you only consider "working age" women), the number of "latch-key children"—those who are home alone after school when adults are not present—has shown a major increase and will continue to do so, as women increasingly opt for work AND children. (Of those mothers of one-year-olds, half have already returned to work.) The typical pattern for women today is (1) get settled in a job, (2) get married, and (3) have children, as opposed to the previous pattern of entering the work force only after the children were mature enough to fend for themselves. There are at least four million "latch-key" children in the U.S. of school age. Many of them think of home as a dangerous, frightening place, particularly if there are no other children in the home. They "check in" with parents by phone. They spend many hours watching TV and talking to their friends on the phone, and have to make decisions about knocks on the door and phone calls from strangers. The evidence is not yet in, and some children may benefit from having family responsibilities while home alone, but many others become problems at school.

There is some very good news also—there is today a solid and relatively well-established Black middle class family structure in the U.S. Access to the political structure has yielded 247 Black mayors in the U.S., and 5,606 Black elected officials in 1984, along with 3,128 elected Hispanic officials. Forty-four percent of the entering freshman class at the University of California, Berkeley in fall, 1984 was minority, while Harvard's entering class was 20% minority. In some major

American cities, Blacks have been able to move to the suburbs. Here are the ten highest rates:

	Blacks in Metro Area	Blacks in Core City	Blacks in Suburbs
Miami	281,000	87,000	194,000 (69%)
Newark	406,000	191,000	215,000 (52.9%)
D.C.	870,000	448,000	422,000 (48.5%)
L.A.	943,000	504,000	439,000 (46.5%)
Atlanta	525,000	283,000	242,000 (46%)
Oakland	263,000	159,000	104,000 (39.5%)
St. Louis	319,000	206,000	113,000 (35.4%)
Birmingham	240,000	158,000	82,000 (34.1%)
Philadelphia	883,000	638,000	245,000 (27.7%)
Cleveland	345,000	251,000	94,000 (27.2%)

This is not to say that suburban housing is not segregated, but simply that there is more choice available in the system today. One unfortunate thing is that the percentage of Black two-income families is declining as a percent of all Black households, meaning that Blacks now distribute themselves over a much wider socioeconomic range than in the past. (Politicians seeking "The Black Vote" will have to be very careful in the future, as will politicians courting any supposedly "special interest group.") Between 1970 and 1980, the percentage of women, as well as minorities, in professional and managerial jobs virtually doubled. See Exhibit 4.

There can be little doubt that affirmative action programs were responsible for at least some of these gains—firms doing business with the Federal government increased their minority work force by a fifth, while firms not doing business with the government increased minorities by only an eighth.

The other side of this coin is the rapid increase in the number of poor households headed by a female Black or Hispanic. Ninety percent of the increase in children born into poverty is from these households. Although two of three poor children are white, the percentage of Black children living with one parent who are poor is much higher, and those children who stay in poverty for more than four years (only one in three poor children does) are heavily Black. A child under six today is six times more likely to be poor than a person over 65. This is because we have increased support for the elderly, and government spending for poor children has actually DECLINED during the past decade. The result is an increase of over two million children during the decade who are "at risk" from birth. Almost half of the poor in the U.S. are children.

Today, we are a nation of 14.6 million Hispanics and 26.5 million Blacks. But by 2020 we will be a nation of 44 million Blacks and 47 million Hispanics—even more if Hispanic immigration rates increase. The total U.S. population for 2020 will be about 265 million people, a very small increase from our current 238 million—and more than 91 million of that figure will be minorities (and mostly young, while the mostly white Baby Boom moves out of the childrearing years



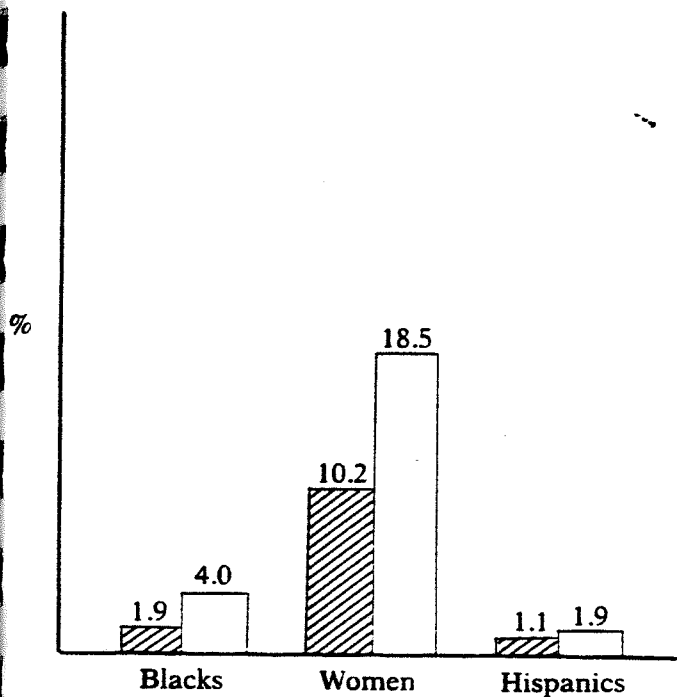
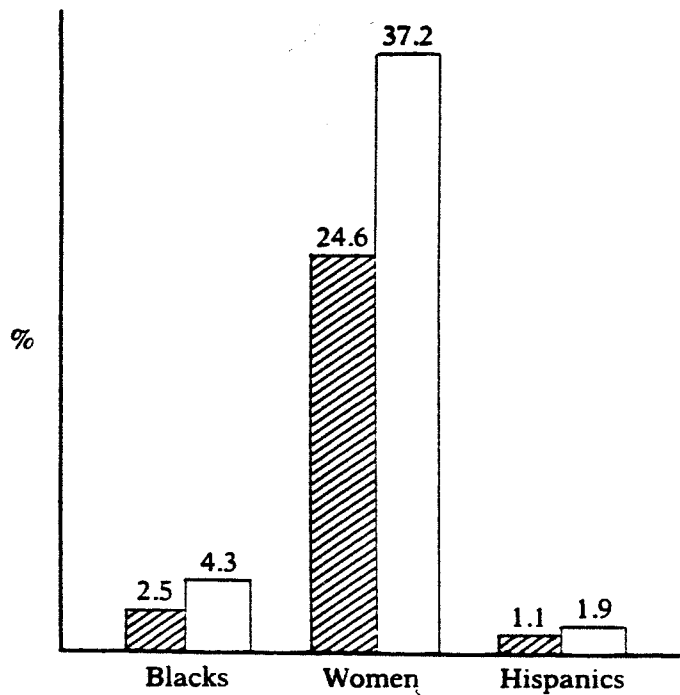
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Exhibit 4

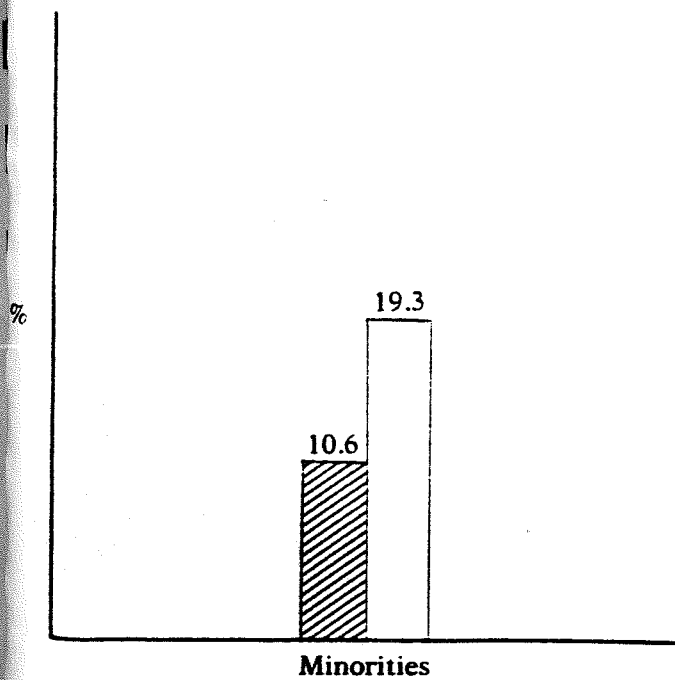
Officials & Managers



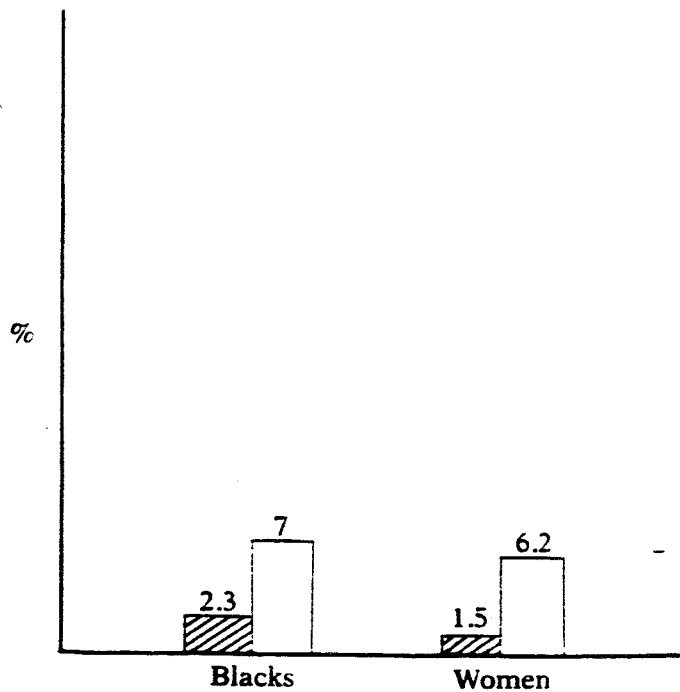
Professionals



Construction Trade Apprenticeships



Government Executives



by 1990, creating a "Baby Bust" that will again be mostly white, while minority births continue to increase).

We need to say a word about the third growing non-white sector of our nation, Asian-Americans. At the moment they are a much smaller group than Blacks and Hispanics (about 3.7 million in 1980), but their growth potential from immigration is very great for the next decade—they currently represent 44% of all immigrants admitted to the US. However, their diversity is very great:

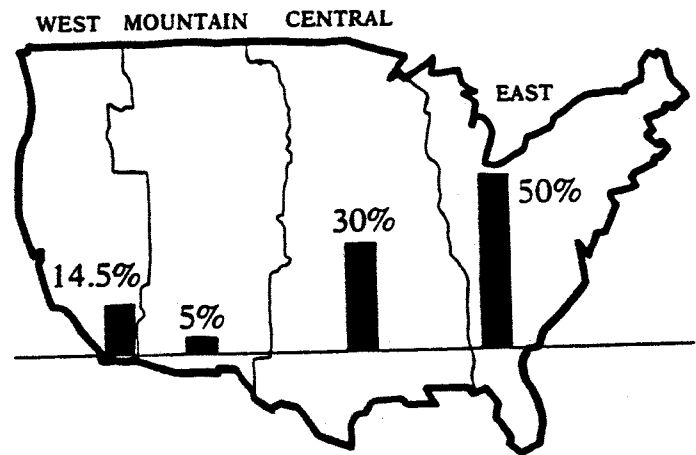
- Sixty percent of Asian-Americans are foreign-born, yet the average Japanese-American speaks English as his/her native language, while almost no Indochinese do.
- Almost 30% of Asian-Americans arrive in the U.S. with four years of college already completed—39% of all Asian-American adults are college graduates.
- Their SAT verbal scores are far below white averages; their math SAT scores are equally far above whites.
- Because of increased Indochinese immigration, language problems among Asian-American youth will increase.
- Asian-American youth are heavily enrolled in public schools; a high percentage graduate and attend college. (Although access to college is widespread, hiring and promotion discrimination against Asian-Americans is also common.)
- Because of their competence in math and the physical sciences, Asian-Americans represent a disproportionate share of minority students at many of the highest rated universities.

Most important, by around the year 2000, America will be a nation in which one of every THREE of us will be non-white. And minorities will cover a broader socioeconomic range than ever before, making simplistic treatment of their needs even less useful.

As we review this material, it is easy to be comforted by the data on increased access for minorities to good jobs, to political leadership, and to owning their own businesses. However, it is equally clear that what is coming toward the educational system is a group of children who will be poorer, more ethnically and linguistically diverse, and who will have more handicaps that will affect their learning. Most important, by around the year 2000, America will be a nation in which one of every THREE of us will be non-white. And minorities will cover a broader socioeconomic range than ever before, making simplistic treatment of their needs even less useful.

4. REGION: Although the "Sunbelt" has shown high increases in growth percentage, the U.S. is very much an Eastern-dominated nation and will remain so well past the year 2000. An easy way to see this is to look at the percentage of our 237 million population who reside in each of the four time zones:

**Exhibit 5
Of 237 Million Population, Percentage
that Resides in Each Time Zone**



In 1985, we can see that the declines in the Middle Atlantic and New England states that were characteristic of the 70's have now been slowed—outmigration from most of these states has been matched by immigration, leaving us with a new question: how do the people moving out compare with the people moving in? For example, Colorado is now the state with the highest percentage of its population possessing a college degree, but a very large number of these degrees were acquired in another state, at that state's expense, while Colorado has enjoyed the talents of the college graduates moving in.

In addition, the national decline of about 13% in public school students of the 1970-1980 decade breaks down to zero decline in about 12 "Sunbelt" states and over 25% in some "Frostbelt" states. There will be two major education agendas in the next decade: (1) planning for growth (kindergarten through graduate school) in 12 states, and (2) planning for continuing declines in secondary school populations in most of the rest. But few states with growth projections have noticed that the increased youth cohort is an increased MINORITY pool—"minority majorities" are possible in the next decade in the public schools of ten states.

In addition, the Bureau of Labor Statistics has stated that of the current group of college students, one in five will graduate and work in a job that requires no college education at all.

5. EDUCATION: The higher education system is facing some major problems in terms of the work which will be done by its graduates. For example, over 18,000 doctorates will be awarded in the humanities during the 1980's with only a "handful" of jobs available for them in teaching. Doctoral scientists and engineers are more employable, and their numbers have grown since 1973 by 52%, to 364,000. However, only one in eight is female, and they are mainly in biology (20%), sociology/anthropology (27%), and psychology (28%). Few minorities are represented: Blacks are only 1.3% of doctoral scientists, Hispanics 0.6%, while Asians were 7.7% although they are only 1.5% of the U.S. population. (And in all U.S. graduate engineering programs, 43% of the students are foreign students. Thirty-six percent of all math and computer science graduate students are foreign students.)

In addition, the Bureau of Labor Statistics has stated that of the current group of college students, one in five will graduate and work in a job that requires no college education at all. In 1972, one in seven workers had a college degree, while in 1982 one worker in four did. Our economy is very good at generating new jobs—but most of them are low-paying service jobs which require little education. The problem is not a decline in "quality" jobs, but rather an increase in the number of college graduates, from 575,000 per year entering the work force annually during the 1960's to 1.4 million college graduates going to work annually during the 1970's. The problem may be alleviated in the next decade due to the decline of about 5 million youth in the 18-24 year old cohort, which may bring educational supply and job demand into better balance.

Our public schools have about finished a major season of state-based educational reforms. As of February, 1985:

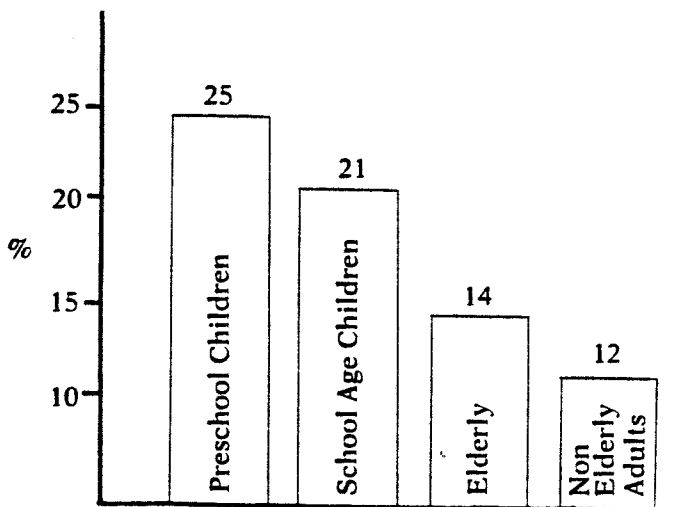
- 43 states have strengthened high school graduation requirements, including 15 that require "exit tests" of high school seniors
- 14 states have adopted some version of "merit pay"
- 37 will lure the best college students into teaching through scholarships and other incentives
- Although standards have been made "tougher," only a handful of states have appropriated additional moneys for counselling and remediation for those who will need assistance in reaching the standards.

With the increased percentage of women (especially others) in the work force, the issues surrounding day

care and early childhood education are coming to the fore. The successes of Head Start and similar programs have focussed new energy on the potential of early intervention programs for solving some of the educational and social problems that crop up later.

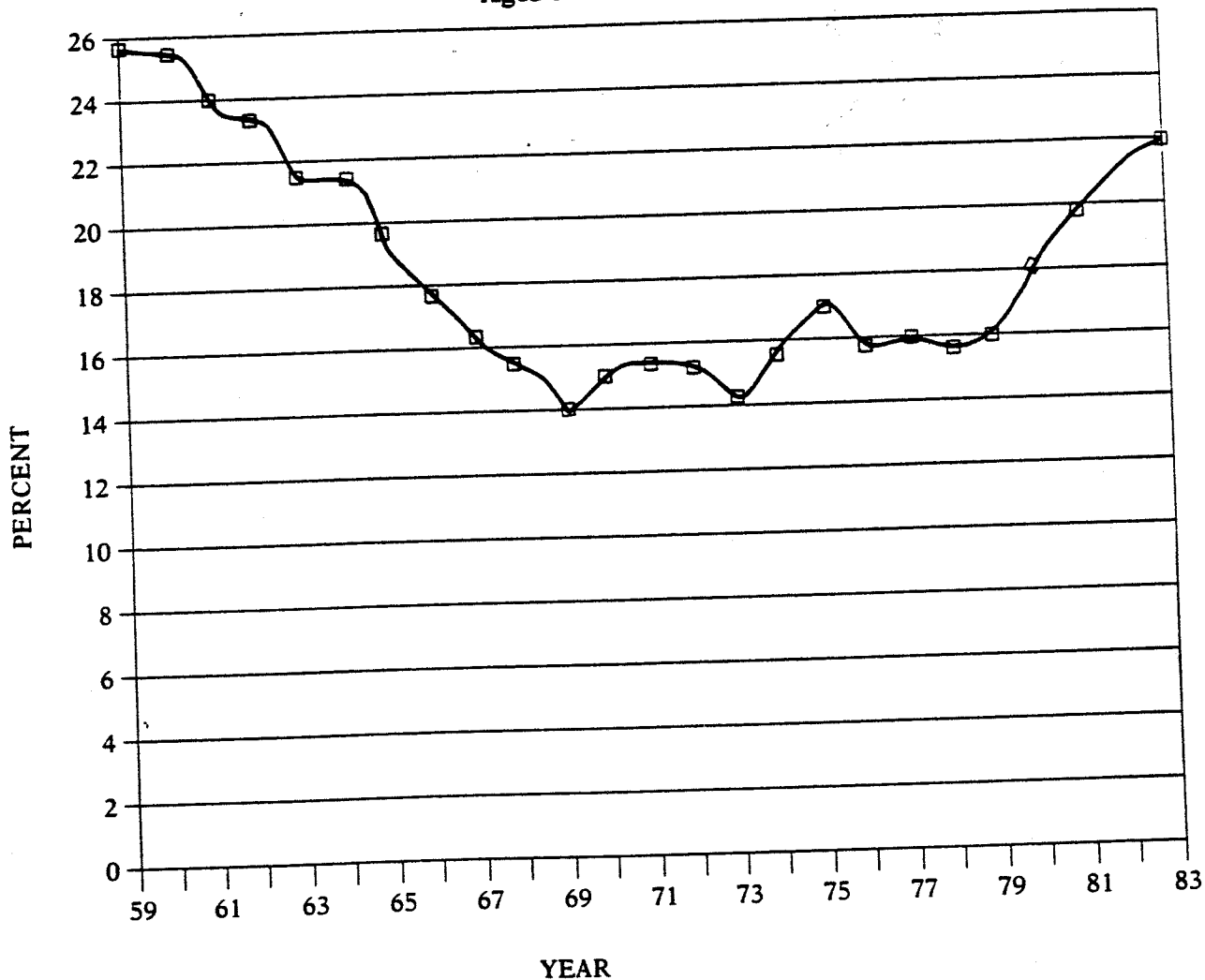
The number of youth eligible for Head Start type programs will increase in the next decade, as the number of children in poverty continues to expand. Poverty is more common among children than any other age group. In 1983, the poverty rate was:

**Exhibit 6
Poverty Rate 1983**



In 1983, 14 million children lived in poverty—about 40% of the poor population. We have already seen that children in poverty come from certain kinds of households. In 1983, childhood poverty was 40% among ethnic minorities, but 14% among non-minority children. Fifty percent of children in female-headed households were in poverty compared to 12% in male-present households. Thirty percent of children in central cities were in poverty in 1983, but only 13% of children in non-central portions of cities. From 1959 to 1969, childhood poverty fell sharply, declining by about 6.5 million, despite an increase of 9% in the child population during the decade. From 1969 to 1979, childhood poverty increased, but slightly and erratically. From 1979 to 1983, however, the number of children in poverty grew by 3.7 million, and the rate grew from 16 to 22 percent, the highest level in 21 years. Although there was no decline in childhood poverty in 1983, such rates are quite dependent on economic conditions; if the present recovery continues it may be that childhood poverty will be reduced. The only thing we know with certainty is that the number of children eligible for Head Start type programs has increased by at least 1/3rd, while the programs are being level-funded in 1985.

**Exhibit 7
Poverty Rate Among Children,
Ages 0-17**



NOTE: Rates slightly underestimated because of exclusion of older unrelated children and, since 1979, unrelated subfamilies. Rates before 1966 adjusted downward for consistency with later years. (Poverty Among Children, Congressional Budget Office, December 3, 1984).

Given the fact that only around 400,000 children are actually in Head Start, while at least three million are eligible, one of the best state strategies for improving their future would be the establishment of a state-wide Head Start system. Phasing in such a system might take a number of years, but no innovation could assure greater cost savings in terms of future services (prisons, drug control centers) that would not be needed. Head Start programs work.

To summarize the education consequences of demographic changes:

1. More children entering school from poverty households.
2. More children entering school from single-parent households.
3. More children from minority backgrounds.
4. A smaller percentage of children who have had Head Start and similar programs, even though more are eligible.
5. A larger number of children who were premature babies, leading to more learning difficulties in school.
6. More children whose parents were not married, now 12 of every 100 births.
7. More "latch-key" children and children from "blended" families as a result of remarriage of one original parent.
8. More children from teen-age mothers.
9. Fewer white, middle-class, suburban children, with day care (once the province of the poor) becoming a middle class norm as well, as more women enter the work force.
10. A continuing decline in the level of retention to high school graduation in virtually all states, except for minorities.
11. A continued drop in the number of minority high school graduates who apply for college.
12. A continued drop in the number of high school graduates, concentrated most heavily in the Northeast.
13. A continuing increase in the number of Black middle class students in the entire system.
14. Increased numbers of Asian-American students, but with more from Indonesia, and with increasing language difficulties.
15. Continuing high drop-outs among Hispanics, currently about 40% of whom complete high school.
16. A decline in the number of college graduates who pursue graduate studies in arts and sciences.
17. A major increase in part-time college students, and a decline of about 1 million in full time students. (Of our 12 million students, only about 2 million are full time, in residence, and 18-22 years of age.)
18. A major increase in college students who need BOTH financial and academic assistance. A great liaison between the offices of student financial aid and counseling will be essential.
19. A continuing increase in the number of college graduates who will get a job which requires no college degree. (Currently 20% of all college graduates.)
20. Continued increases in graduate enrollments in business, increased undergraduate enrollments in arts and sciences COURSES but not majors.
21. Increasing numbers of talented minority youth choosing the military as their educational route, both due to cost and direct access to "high technology."
22. Major increases in adult and continuing education outside of college and university settings—by business, by government, by other non-profits such as United Way, and by for-profit "franchise" groups such as Bell and Howell Schools and The Learning Annex.
23. Increased percentage of workers with a college degree. (From one in seven to one in four today.)

Part Two: Retention to High School Graduation

The first and perhaps most important point to be made in this discussion is to point out the direct link between state level economic development and high school retention. In a state that retains a high percentage of its youth to high school graduation, almost every young person becomes a "net gain" to the state—with a high school diploma, there is a high probability of that person getting a job and repaying the state for the cost of his/her education, through taxable income, many times over. However, in a state with a poor record of retention to high school graduation, many youth are a "net loss" to the state, in that without a high school diploma, the chances of that student getting work, and thus repaying the state for that person's education, are very small indeed. Additionally, that young person is unlikely to leave the state, becoming a permanent economic burden to that state's economy.

The following table presents the top and bottom states in retention to high school graduation, along with two variables that do NOT predict retention levels:

	Retention	Teacher Salary	Per Pupil Expend.
Minnesota	# 1 (86.0%)	22nd	16th
North Dakota	2 (84.9%)	40th	40th
Iowa	3 (84.8%)	27th	24th
South Dakota	4 (82.8%)	47th	37th
Wisconsin	5 (82.3%)	8th	12th
Nebraska	6 (81.3%)	41st	21st
Montana	7 (80.9%)	28th	13th
Kansas	8 (80.5%)	36th	29th
Utah	9 (80.2%)	25th	45th
Wyoming	10 (80.0%)	6th	15th
	* * *		
California	41 (68.0%)	10th	22nd
Kentucky	42 (67.3%)	31st	46th
Alabama	43 (67.1%)	35th	46th
North Carolina	44 (67.1%)	29th	36th
Tennessee	45 (66.7%)	45th	48th
New York	46 (65.9%)	7th	2nd
Georgia	47 (64.3%)	33rd	49th
Florida	48 (63.7%)	32nd	27th
Louisiana	49 (63.4%)	39th	40th
Mississippi	50 (61.8%)	50th	50th

Certain things are obvious from these tables. A large majority of the high-retention states are located in the Midwest, a majority of the low retention ones are in the Southeast. Ethnic diversity is greater in the low retention states, which are also more urban. It also should be clear that neither teacher salary nor per pupil expenditure is a good indicator of a state's retention ability, while pupil-teacher ratio turns out to have a much better predictive level than either of the others. (The range for pupil-teacher ratio varies from 15.0 to 1 in Wyoming to 23.1 in California, while even greater variation can be obtained in big cities com-

pared to suburbs, and elementary schools compared to high schools.) Why is teacher/student ratio related to retention when teacher salary and per pupil expenditure are not? The question needs further analysis.

We are more aware than ever that if large numbers of youth fail in school and work, the consequences for us all are severe.

In context, the retention data take on a different aspect. We have made great strides since the turn of the Century in increasing the educational level of our citizens—in 1900, only about 10% of the youth cohort graduated from high school. By 1950, 25% of Black youth and 56% of white were graduating, while in 1978, 75% of Black youth were graduating and 85% of whites. (Historical data on Hispanic youth is hard to come by, but it appears that today about 60% graduate from high school.) As a result of this major increase in "productivity," higher education benefitted doubly in the 1970's—once from the increased numbers of the Baby Boom, once again from the higher "yield" of high school graduates. In 1947, only about 28% of youth attended college, while today, more than 50% will attend some form of postsecondary education. In our entire population, the percentage with high school diplomas has risen from around 13% in 1910 to 24% in 1940, and 70% in 1981. Today, one in four workers has a college degree. This more highly educated adult population (and work force) has added greatly to the economic progress of our nation. We are more aware than ever that if large numbers of youth fail in school and work, the consequences for us all are severe.

High school drop-outs have a rather typical profile. They are usually from low-income or poverty settings, often from a minority group background (although not often Asian-American), have very low basic academic skills, especially reading and math, have parents who are not high school graduates and who are generally uninterested in the child's progress in school, and do not provide a support system for academic progress. English is often not the major language spoken in the home, and many are children of single parents. Drop-outs are heavier among males than females—males tend to leave school to get a job (which usually turns out to be a failure), while females tend to drop out in order to have a child. Drop-outs are generally bored in school, they perceive themselves accurately as failures in the school culture, and are usually very alienated from school.

Our survey of states¹ revealed that as of 1984, virtually no state passed "reform" legislation that con-

¹"State Use of Demographic Data for Educational Planning." Available from IEL for \$2.

tain specific plans to provide remediation to those who did not meet the higher standards on the first try—thus, almost all states were willing to have a higher drop-out rate from secondary schools in their state, even though the economic (leaving out the social) costs of this position will be very high indeed. Early in 1985, several states began to be responsive to this position, although a majority of the “reform” states have, in essence, moved up the high jump bar from four to six feet without giving any additional coaching to the youth who were not clearing the bar when it was set at four feet. This is bad coaching, and worse educational policy. Benjamin Bloom, noted psychologist, has been very convincing in showing that among the truly excellent performers in a wide range of fields from sports to music, natural talent is less of a factor than hard work and persistence. If we have standards we wish EVERY student to attain, some will require more assistance than others. The ideal is to have all students meeting the higher standards. Most states have not behaved as if they shared this ideal.

Eliminating low performers from the public schools was seen as a way of displacing the problem, not solving it. Out of school, these students present more of a social and economic problem than they do IN school.

Many localities, however, have developed excellent drop-out prevention programs. Particularly useful are the programs which combine intensive, individualized training in the basic skills with work-related projects. Vocational education and work-study strategies seem to work well, as does the “alternative high school” pattern. When the relation between education and work becomes clear, most of these potential drop-outs can be motivated to stay in school and perform at a higher level. (These work-related strategies are more likely to be successful with male students.)

The state survey that was a part of our project indicated a widespread sense that much more needs to be done in this area. Most frequently mentioned were programs that stress the basic skills, stimulating a more personal and caring attitude on the part of all staff in dealing with potential drop-outs, and identifying and intervening earlier in the education of potential drop-outs. More and more sophisticated counselling was mentioned often, as was a variety of efforts to coordinate the work of family, school and social welfare agencies in keeping potential drop-outs in school, and increasing their educational success.

We also discovered a widespread concern that the current spate of state-based “reform” legislation will only increase the group of push-outs to be added to the drop-outs. Eliminating low performers from the public schools was seen as a way of displacing the

problem, not solving it. Out of school, these students present more of a social and economic problem than they do IN school. If there were other institutions that formed a “safety net” to catch the drop-outs from schools, one might feel differently about it. (The GED, for example, may be a useful device for some students who seize the initiative, but not all.) But no such safety net exists, at least for educational purposes.

There are times when the “definitive negative” assessment—this program NEVER works—could be more useful than the “ambiguous positive”—it might work but you can’t tell.

Given the basically local nature of such drop-out prevention programs, there exists a major need to coordinate and share information on what works and why. If each of the 14,000 school districts has to begin their drop-out prevention program from scratch, much inventing of wheels will be done. Some characteristics of successful programs are not difficult to ascertain—small settings with low student-teacher ratios, personalized attention to student needs, materials and teaching formats that stress the immediate and practical, stress on the basic academic skills, and consistent patterns of rewarding student achievement. The hallmark of the “continuation school” seems always useful—a way of keeping in touch with the student after graduation, and particularly allowing the school to serve the needs of older students who have left school but wish to return for a diploma or GED. Different subcultures and regions will have to tailor these general notions to their area, but a large percentage of what works in one place will work in another. And in addition, if a program fails completely in one location, it is likely to do the same in others. (There are times when the “definitive negative” assessment—this program NEVER works—could be more useful than the “ambiguous positive”—it might work but you can’t tell. The ideal recommendation might be “You could try A to F and see what works best for you, but don’t try G—it NEVER works.” Negative knowledge is very important in making a profession out of a field.)

One of the widely held views among educators interviewed in this project is that we intervene too late in the course of a student’s development, that certain parts of the profile of a drop-out prone student may be visible as early as the third grade. To allow these sores to fester until the eleventh grade is to virtually guarantee that the student will drop out. Many of the newer day care approaches integrate meaningful learning even at pre-school levels, largely to increase the child’s self-confidence as a learner and to begin preparation for basic skills teaching when the child enters school. Key to all of these early intervention programs is some form of home support. Not only is this important when there are cultural differences the school must negoti-

ate, but particularly with children who do not speak English, and in whose homes English is not spoken. This crucial problem seems to be easing somewhat with Mexican-Americans, as most of the "Spanish only" speakers are older adults, and an increasing number of youth report familiarity with English as well as Spanish. The problem intensifies, however, for Indo-chinese immigrants and their children, who often come to school having no familiarity with English.

Such programs are not inexpensive. But compared to the cost of neglect, (it costs about \$25,000 to have a prisoner spend a year in a state penitentiary, about one-third of the cost of having a student at a state college), dealing with potential high school drop-outs early may turn out to be one of the biggest bargains available. It is important to observe that our position is not incompatible with high standards of student performance, we simply feel that every student should have the maximum opportunity to achieve these high standards.

What should we expect in terms of performance of schools in producing high school graduates? Certainly, each decade has yielded better returns than the previous decade, in terms of retention to high school graduation, while declines in academic achievement remain quite scattered by age, region, and ethnicity. There is no reason to say that other states could not do as well on retention as Minnesota, whose per pupil spending is no greater than many other states. If about 14% of white students are dropping out, and 24% of Black students, is there any reason to believe that the rates for Black students could not be moved to those for whites? And if 40% of Hispanics do not finish high school, is there any reason to believe that this number could not be cut to the 24 % Black rate, or to the 14% white rate? Females of whatever ethnic background drop out less than males—is there any reason to think that male rates could not be made to match those of females? The answer to all these questions is NO—yet there are some clear indications that the decade of the 1980's will show a decline in retention for virtually every group discussed. Since 1980, the national figure for all students has declined from 76% high school graduation to 73%. The unintended fall-out from the spate of "excellence" state reforms will undoubtedly cut the number even further.

Few factors are emerging on the equity side, except for a number of locally developed and often very creative and productive programs to improve retention in public schools. These programs need to be put together into a coherent framework, both at the state and larger levels. The higher education community, instead of seeing this issue as a spectator sport, needs to get involved in trying to improve retention—after all, this will be their bread and butter very shortly. Organizations like the Education Commission of the States need to begin to encourage states to follow their reform legislation with implementing legislation to make sure that every youngster has a reasonable opportunity to achieve these new standards. To do so

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would be in everyone's best interests, both short and long term. As with a food chain, changes at one level in the educational continuum will have direct and predictable consequences for other levels in the "chain." Higher educational leaders have not been used to scanning the environment before them, particularly the educational environment. During the coming decade, this kind of information will be a necessity for any strategic planning in higher education. Similarly, public school leaders will have to be more acute in looking carefully at who is moving into and out of their district, and who is being born.

Part Three: Access to College

The first point to be made is that enrollments in higher education have benefitted greatly from two factors—first, the 70 million Baby Boomers who have swollen college admissions for two decades; and second, a major increase in the percentage of youth who have graduated from high school and are thus in a position to attend college—from less than 50% in 1946 to 73% today. (But as the slope of the youth decline increases in most states in the years to come, and retention rates to high school graduation continue to drop, higher education will have to get used to getting a smaller percentage of a declining total.)

The range and diversity of higher education in the U.S. is a source of constant amazement—entering freshman at some institutions know more than graduating seniors from others.

For those who do graduate from high school (plus the increasing but somewhat invisible thousands who acquire the GED), there is SOME college or university that will probably accept them. The range and diversity of higher education in the U.S. is a source of constant amazement—entering freshmen at some institutions know more than graduating seniors from others. The B.A. is certainly not a learning “floor” that guarantees a minimum level of competence which all degree holders can exhibit. As long as each institution attracts the right student mix for its particular mission and level, the system seems to work quite well. Indeed, it thrives on diversity, which is fortunate given the diversity inherent in the U.S. population. Community colleges, for example, have a disproportionate enrollment of Black and Hispanic students, while on the other hand, the 1984 entering freshman class at the University of California, Berkeley was only 56% white! (The Berkeley situation is partially explained by its excellence in math and the physical sciences, and thus their minorities are heavily Asian-American.) UCLA also has become heavily non-white, without lowering its admissions standards at all. In fact, this fall’s entering class at Harvard was 20% minority, and was selected from the top sixth of the applicant pool, whereas a decade ago Harvard was only 10% minority, and the students were selected from the top third. While doubling their selectivity, Harvard has doubled the number of minority students at the same time.

But when we leave the community colleges and the “blue chip” institutions, there is a large group of institutions, public and private, that have not increased their minority populations over the last decade. Given the decline in white graduates of secondary schools

that faces us until at least 1994, these institutions will have to face up to some difficult decisions. However, comparatively few of these institutions will close, compared with the past—since 1900, we have closed about 200 institutions of higher education every two decades. However, we have founded almost as many new ones as closures, so that the institutional “net” remained fairly constant through the years. The makeup of institutions did go through a restructuring during the sixties and early seventies when we were opening a new community college every WEEK. In the next decade or two, closure rates will probably not be balanced out with starting rates—we will have more “deaths” than “births.” Because of the great political difficulty in closing a public institution of higher education, a large number will continue to exist simply because they will not be allowed to die—the legislature will serve as their heart-lung machine. A very large number of state colleges, designed to serve the needs of a sector of a state, are simply not located near any population centers, yet for them, the issue will not be survival but significance. The most difficult problems will be institutions that got the “greatness” disease in the 1960’s, added many unneeded graduate programs, and assumed that student enrollments would increase forever.

It is likely that as the number of high school graduates declines more steeply from now to 1994, and fewer students are spread across the same number of institutions, the commendable specificity of college catalogues and brochures may be lost, as some institutions try to attract anyone who is warm and breathing to their opening class.

The declines will be heavily suburban, 18-24 years old, full time, as well as white and middle class. Private colleges and universities, now enrolling about 22% of all students, will be the most “at risk,” not only because they run a larger share of their budget from tuition revenues, but because “caps” on student financial aid will make the choice of a private college an impossible one for many middle class parents. However, the Congress at this writing has not been totally clear on cuts in student assistance.

It is our view that the access issue needs to be defined carefully—one criterion would be access to SOME institution of higher education; a second would be access to the BEST institution for that particular student. On the first criterion (thanks especially to com-

munity colleges) access has become virtually universal for any high school graduate, anywhere in the country, regardless of race, sex, age or class. On the second criterion, we undoubtedly have a long way to go, although access to the best institution can be improved by better institutional publicity at the college level so that the student knows what the institution expects, plus better guidance from secondary schools and employers, so that the student's aspirations are realistic and clear.

The question behind the question: why isn't higher education more appealing to America's minority high school graduates?

It is likely that as the number of high school graduates declines more steeply from now to 1994, and fewer students are spread across the same number of institutions, the commendable specificity of college catalogues and brochures may be lost, as some institutions try to attract anyone who is warm and breathing to their opening class.

At the same time, the very small number of "highly selective" institutions will probably be as selective as ever, perhaps even more so, and their pool of applicants is likely to be even more diverse by ethnicity, sex and class than before. For example, it may be quite normal today for the bright son of a Black college graduate to think of applying to Yale—good news for Yale, not such good news for the Black colleges, in that many of their best potential recruits are eagerly sought after by a number of other institutions.

Access discussions usually center on whether or not institutions of higher education are willing to admit high school graduates regardless of sex, ethnicity or class. By and large, access to SOME college or university is possible today for every high school graduate. But today, one out of eight "highly able" high school graduates chooses not to attend college. Twenty-nine percent more Blacks graduated from high school in 1982 than in 1975, but Black enrollment in college dropped 11% during the period. High school graduation rates for Hispanics increased 38% during the 1975 to 1982 period, while Hispanic college enrollment declined 16%.

The question behind the question: why isn't higher education more appealing to America's minority high school graduates? Access is a relatively meaningless idea if people are not interested in the thing to which access is allowed. We know little about why a larger number of minority high school graduates is producing a smaller number of college students. Declines in financial aid, lack of relationship between a college degree and a good job, inadequate high school counselling programs for minorities, are all mentioned as possible contributors. Many minority youth are fully aware that a college degree no longer guarantees access

to a high level job. It may even be that many minority high school graduates will get a job for a few years after high school graduation, then enter some postsecondary program at a later date. It is certain that many talented minority youth are finding military service to be a very appealing way to gain further education, particularly in "high tech."

At the moment, most of this is hypothetical, but certainly some doubt can be cast on the notion that higher education is an essential part of the American Dream for an increasing number of bright and accomplished students of whatever ethnic background. This is certainly the kind of issue that should begin to draw together the various faculty, administrative and board leadership from schools and colleges to see what can be done to improve access, retention and performance at all educational levels. With a decline of about 5 million in the youth cohort, it would be in everyone's best interest to make the school-college transition easy and productive for the largest number of qualified students.

Lifelong learning is here today for about half of the American adult population—ready or not.

On the other hand, diversity is the American hallmark, and recent successes of the military and business worlds in their educational endeavors suggests a very different postsecondary world. Most institutions with which we are involved, from hospitals and local governments to museums and the workplace, today have an educational arm. Lifelong learning is here today for about half of the American adult population—ready or not. Colleges and universities are a part of this picture, but only a part (12 million of about 40 million people being educated past high school). Given the demography plus the disaggregation of the providers of educational services, the portion of the total pie for colleges and universities will continue to decline—they will have a relatively constant place in a rapidly expanding universe. At the moment, ten million workers are taking eighteen million courses a year, most of them offered "in-house" by the company's own education staff. This is a minimum figure.

The Baby Boom is now in the peak middle years of earning and learning. Adult education is the only growth component possible in postsecondary education. This universe will continue to expand until the Baby Boom begins to retire in 2000, but higher education will only develop a limited share of this area, which is appropriate in an increasingly diverse world of education producers and consumers.

Part Four: Retention to College Graduation

Studies done over the last twenty years affirm a central truth: of 100 students admitted to a four-year bachelors program, less than 50 (about 46) would graduate, on time, from the institution they entered. If one extends the time to seven years, about 70 of our original 100 would have graduated from SOME institution by that time. It seems important to point out that the "template" for undergraduate education (eight semesters of instruction straight through to graduation) has not been the path taken by even a simple majority of students over the years. Our response has tended to be criticizing part-time and older students with family and job responsibilities rather than revising the template so that the length of a student's education is variable. Often we show a fierce dedication to the *TIME* of an education while appearing confused about its *CONTENT* or *OUTCOMES*. But less than half of the undergraduate students seem to agree with the "straight through" principle.

We also know that unlike the high school drop-out, the college drop-out who is not a flunk-out tends to have as good a grade average as those who stay, often even better. Major reasons students give for dropping out of college are heavily financial, but this is sometimes the easiest explanation for what may be a very complex issue. It would appear that many, if not most, drop-outs are in reality *STOP*-outs who simply have to do something else before resuming their studies.

Often we show a fierce dedication to the TIME of an education while appearing confused about its CONTENT or OUTCOMES.

Yet they are often treated by the college or university as persons who have left higher education forever. At the moment, we have no effective and economical system to routinely track students who move from one campus to another, making the effectiveness of "retention" efforts difficult to assess if retention is taken to mean graduation from another institution than that in which the student originally enrolled. Some students *SHOULD* transfer, others *SHOULD* stop out for awhile, yet they are currently recorded as casualties.

The issue of retention to college graduation has focussed as an important one in the last several years, as institutions come to realize that even with a smaller freshman class, an improved retention rate can mean that the total student enrollment need not shrink, if a higher percentage of students stay for four years. (Indeed, one can raise some real questions about an institution with 1,000 freshmen, 500 sophomores, 200 juniors and 100 seniors, in the sense of community and solidarity, especially if the senior seminar of eight students is subsidized by the required freshman lecture

course of 800.) Such systems seem designed to increase attrition, both due to the "sink-or-swim" attitude for freshmen and the over-indulged senior. One answer to this problem is to "front-load" the curriculum—provide more resources in the first year than the next three, in four-year programs, as recommended in the National Institute of Education report, "Involvement in Learning: Realizing the Potential of American Higher Education."²

... most potential drop-outs in academic difficulty are sending signals which no one can hear. This is because there is no standard faculty examination until the MIDDLE of the first term ...

The largest number of drop-outs occur in the freshman year—very early in the first term, most potential drop-outs in academic difficulty are sending signals which no one can hear. This is because there is no standard faculty examination until the *MIDDLE* of the first term, by which time behaviors which impede proper study are already firmly in place. Some institutions are now using "early warning systems"—several small tests or written work required in the first two weeks for entering students. In this way, students who are having trouble will be told while there is still time to modify their study and classroom behavior. Some institutions have increased their retention considerably after developing such programs. Many drop-outs and flunk-outs are bright enough to do good college work, but have never learned how to study effectively, nor how to take tests and do good written work.

Given the realities of student mobility, and the fact that less than half of them do the "correct" thing of graduating "on time," it might be useful to consider an alternative strategy—converting drop-outs to stop-outs. In the stop-out strategy, the student is not seen as a total failure, but rather as someone who has some additional tasks to complete before the college program is completed. The goal is the development of a set of decision rules which guide the student into readiness to return to some college at some future time. In a carefully drawn program of this sort, the institution benefits by the student who may return at a later date to complete the work, and also by the kind of word-of-mouth praise for the college that this program can develop. (Many community colleges do this kind of program very well.)

Surprisingly, many standard indicators do not predict dropping out. High school rank in class and GPA

²A Final Report of the Study Group on the Conditions of Excellence in American Higher Education. Sponsored by the NIE. Presented to the Secretary of Education and the Director of the National Institute of Education. October 1984.

only predict about half the cases, and those mainly in the first college year. SAT scores have a small ability to predict college grades, and no ability to predict drop-outs. Having clear educational and vocational goals helps the college GPA prediction but doesn't tell us who will drop out. There are several good ones:

We are just entering an era in which youth will be in short supply in America.

students with good study habits stay in college; those whose needs are compatible with what the campus environment encourages also tend to stay.

Our earlier discussions would suggest that even more entry level students in the future will be in need of both financial and academic assistance. Although over 80% of institutions now report offering "remediation" courses and programs for entry level students, it is not clear what the level of financial and intellectual commitment to these programs is. In many cases, a teacher who works in the developmental area is not eligible for promotions and tenure, even though success in this role can be crucial to hundreds of students who can become successful college students with some support. Higher education may have to put additional human and dollar resources, as well as intellectual commitment, into this area in the future just to stay even on enrollments.

The task will be not to lower the standards but to increase the effort.

We are just entering an era in which youth will be in short supply in America. Fast food restaurants are one indicator of the future—virtually every one has a 'now hiring' sign in front. We are not fully used to having an excess of young people in America. If a new 19 year-old employee doesn't work out, fire him/her and get another, if a freshman doesn't work out, replace him/her with another, if the army recruit doesn't adapt, replace him/her, etc. For the next fifteen years at least, we will have to work harder with the limited number of young people we have to work with, whether we are in higher education, business or the military. If a young person fails the first time, we may have to help them succeed the second time rather than summarily replacing them. They will be scarce for a long time—as long as we live, there will be more people over 65 than teen-agers in America. How do we balance the interests of both?

The Bottom Line:

The rapid increase in minorities among the youth population is here to stay. We need to make a major commitment, as educators, to see that all our students in higher education have the opportunity to perform academically at a high level. There will be barriers of color, language, culture, attitude that will be greater than any we have faced before, as Spanish-speaking students are joined by those from Thailand and Vietnam. The task will be not to lower the standards but to increase the effort. To do so will be to the direct benefit of all Americans, as a new generation of people become a part of our fabric, adding the high level of energy and creativity that has always been characteristic of groups who are making their way in America. Their numbers are now so large that if they do not succeed, all of us will have diminished futures. **That is the new reality.**

PRELIMINARY PROGRAM

89th CONFERENCE
Truckee Meadows Community College
Reno, NV 89512
December 6 - 7, 1985

Marjorie Gardner: "Windows on the World of International Chemistry"
Doug Bond: "The General Chemistry/Organic Chemistry Interface"
Alison McPherson: "Fitting Chemistry into the Allied Health Curriculum"
David Brooks: "Laser Videodisks in Chemistry"
Elizabeth Singleton: "3-Way Cooperative Education"
Jim Bradford: "Public Understanding of Science"
Leonard Grotz: "Humor in Chemistry: Chemistry Professor Jokes"
Bill Mooney: "Issues in Two-Year College Chemistry"

OTHER TOPICS: "Classroom Catalysis," "Teaching Thermodynamics at the Gaming Tables," "Off-the-Shelf Lab Interfacing," "Simulation Instrumentation in the Chem Lab," "MACcing Chemistry Clear," . . .

FORUM: This interactive session will center on key questions/issues facing two-year college chemistry faculty. Please submit forum suggestions to the Program Chair.

CATALYST COLLECTION: There will be an exhibit area set aside for books, cartoons, anecdotes, pictures, demonstration, computer programs, handouts, cassettes, mugs, t-shirts, etc., which could be used to spark humor, interest or understanding in chemistry classroom. Please send suggestions to the Program Chair.

EXCURSIONS: Trips to Lake Tahoe, historic Virginia City, Ski Packages and Casino/Show packets are being considered. Please indicate your interests and direct questions to the Local Arrangements Chair.

1985

DECEMBER 6 - 7

The 89th CONFERENCE, Truckee Meadows Community College, 7000 Dandini Blvd., Reno Nevada 89512

Program Chair: Carolyn Collins, Clark County Community College, Las Vegas, NV. (702) 643-5060

Local Arrangements Chair: John Clevenger, Truckee Meadows Community College, Reno NV (702) 7221

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APRIL 11 - 12

The 90th CONFERENCE Westchester Community College, Valhalla, NY

Local Arrangements Chair:

Program Chair: Patricia Flath, Paul Smith's College, Paul Smith's, New York 12970

APRIL 25 - 26

The 91st CONFERENCE William Rainey Harper College, Palatine, IL 60067

Program Chair - William Mooney Jr. ElCamino College, Via Torrance, CA 90506

Local Arrangements Chair: Joseph Bauer, William Rainey Harper College, Palatine, IL

JULY 27 - AUGUST 1

The 92nd CONFERENCE Montana State University, Bozeman Montana, in conjunction with the 9th Biennial Conference on Chemical Education

Program Chair: Ed Heath, Southwest Texas Junior College, Uvalde, Texas 78801

OCTOBER 17 - 18

The 93rd CONFERENCE Greenville Technical College, Box 5616, Station B, Greenville, SC 29606

Program Chair: Leo Klin, III, Tri-Counties Technical College

Local Arrangements Chair: Alan Day, Greenville Technical College, Greenville SC

NOVEMBER 14 - 15

The 94th CONFERENCE Sinclair Community College, Dayton, Ohio 45402

Program Chairs: Richard Jones, Sinclair Community College, Dayton, OH

Local Arrangements Chair: Richard Jones, Sinclair Community College, Dayton, OH

1987

APRIL 3 - 4

The 95th CONFERENCE, Community College of Denver, Denver, Colorado

Chair: Martin Van Dyke, CC of Denver North Campus,

3645 W. 112th Avenue, Westminster, CO 80030

MAY 22 - 23

The 96th CONFERENCE, Montgomery Community College, Rockville, MD 20850

Chair: Margot Schumm, Montgomery College, Rockville, MD 20850