

CALTECH NEWS

PUBLISHED FOR ALUMNI AND FRIENDS OF THE CALIFORNIA INSTITUTE OF TECHNOLOGY

Prufrock House on the move



Prufrock House is destined for a new location at 373 South Wilson Avenue. The graduate student residence is one of three houses at the northwest corner of Wilson and San Pasqual that have yielded to the impending construction of the new Braun Laboratories of Cell Biology and Chemistry, scheduled to begin in November. Another of the houses — former site of the public relations offices — has been relocated on Lura Street, while the third — the Caltech coffee house — was torn down (a new coffee house will open at 300 South Holliston and public relations is in new quarters at 315 South Hill). November also will mark the start of construction of the Thomas J. Watson, Sr., Laboratories of Applied Physics, just north of Steele Laboratory.

Robert Gray, Sechler die

Two Caltech faculty members — Robert D. Gray, professor of economics, emeritus, and Ernest E. Sechler, professor of aeronautics, emeritus — died this summer after extended illnesses.

Gray, 69, served 39 years on the Caltech faculty and was director of the Industrial Relations Center from 1941 until 1977. He came to Caltech in 1940 as associate professor of economics and industrial relations, becoming a full professor in 1942. During World War II, he served as an adviser to the Railway Labor Emergency Panel, and then organized a massive program as supervisor of the engineering, science, and management war training classes in production engineering and industrial relations at Caltech.

As director of the Industrial Relations Center, he was widely recognized as an authority on wage and salary administration, managerial compensation, management development surveys of employee opinions, and employee benefit plans. Active as a leader or consultant in several governmental agencies, he was twice president of the California State Personnel Board and was chosen to be on the Governor's Advisory Council in the Department of Employment.

A leader in numerous service and civic groups and professional societies, he received awards including the Thomas P. Pike Industry Award of the Alcoholism Council of Greater Los Angeles and the Phil-

Carroll Award of the Society for the Advancement of Management.

Sechler, 73, devoted his professional life to teaching and research on the design of safe, lightweight structures, including aeroplane fuselages and the thin shells of rockets and boosters. He had been a faculty member at the Institute since 1930 and was executive officer for aeronautics from 1966 to 1971. In 1976 he retired as emeritus professor.

A consultant in the field of aerospace structures throughout the aerospace industry, Sechler also served as member and chairman of various national advisory committees for the Air Force and NASA. He was active in recent years in promoting the development of windmills as a power source.

Sechler was a member of the National Academy of Engineering, the American Association for the Advancement of Science, California Academy of Sciences, and National Defense Preparedness Association.

Born in Pueblo, Colorado, Sechler entered Caltech as a freshman in 1924, and was the first person to receive its MS degree in aeronautics. He also held a BS in engineering (1928), an MS in mechanical engineering (1929), and a PhD in aeronautics (1934) from Caltech.

Contributions may be made to the Ernest E. Sechler Memorial Fund, Office of Memorial Funds (1-36), Caltech.

For neuroscience research

\$500,000 grant to Caltech

Caltech has been awarded a grant of \$500,000 from the Pew Memorial Trust in support of its neuroscience research program, according to President Marvin L. Goldberger.

"This magnificent grant will be of tremendous help in allowing Caltech's neuroscientists to continue their efforts to understand the operation of the nervous system and the causes of neurological disorders," Goldberger said. "Their work holds great promise for solving mysteries

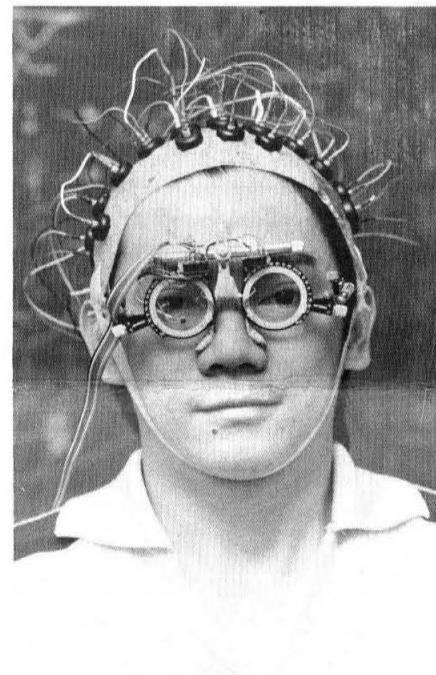
of the brain and for improving our understanding of the causes of diseases of the central nervous system."

Goldberger explained that scientists at Caltech are concentrating on two aspects of neuroscientific research: cellular mechanisms in development and behavior, and sensory processes and perception. Their work can yield insights into the role of hormones in behavior, the transmission of nervous impulses from one nerve to another, and the role of genes in learning. They may also discover more about the function of circadian rhythms — basic regulatory mechanisms of cells that govern the activity of enzymes and neurons — and of protein synthesis.

Caltech neuroscientists are also studying how the central nervous system processes auditory information and how vocal learning develops; how the central nervous system processes sound, and how visual and auditory data are integrated; and how the eyes integrate visual data to produce a three-dimensional world. Work that is improving our understanding of the inner ear may help to prevent or cure deafness, vertigo, and related problems caused by damage to the inner ear's tiny hair cells.

Research on the independent functioning of the two hemispheres of the human brain is helping to provide clues on how brain mechanisms generate conscious experience.

The Pew Memorial Trust, located in Philadelphia, is one of the largest private foundations in the United States. It was founded by Joseph N. Pew, Jr., J. Howard Pew, Mary Ethel Pew, and Mabel Pew Myrin, in memory of their father, Joseph N. Pew, Sr., the founder of Sun Oil Co., and their mother, Mary Anderson Pew.



Caltech graduate student Michael Chen wears an electrode-studded helmet tailored to fit his head, and a pair of infrared photodiode spectacles that trace his eye movements. His goal is to learn whether his eye movements initiate specific responses in the brain's visual cortex. Chen is working with Derek Fender (professor of biology and applied science) in research to understand how the body's system of eye movements and the brain work together to enable an individual to perceive the world as standing still — even though the eyes may be in rapid motion. The work is part of Caltech's Neuroscience Research Program.

Reed: Caltech benefactor

William G. Reed, managing partner of Simpson Reed & Co. in Seattle, has endowed the William G. Reed Graduate Fellowship at Caltech. President Marvin L. Goldberger said income from the endowment will provide tuition and expenses each year for a graduate student. He stressed that the gift meets a vital need for graduate student support.

"Fellowship support from federal agencies has dropped sharply in recent years, and private gifts such as this one are more important than ever in providing educational opportunities for outstanding young scientists," he said.

A native of Shelton, Washington,

Reed earned his AB degree from the University of Washington and studied at the Harvard Graduate School of Business. The son of Mark E. Reed, a pioneer in the lumber industry and an early legislative leader in the Pacific Northwest, he is chairman of the Simlog Corporation and the former chairman of the Crown Simpson Pulp Company, the Simpson Timber Company, and the Simpson Lee Paper Company, the Shelton State Bank, and the Seattle Foundation.

A member of the President's Council at Caltech in 1968-70, he headed the U.S. delegation to the Economic Commission for Europe in 1960.

The Alumni Fund

How to stay on top of the mountain

"Progress in society is made by a handful of men and women — and many of them graduate from Caltech." That's the belief of Caltech alumnus Gordon Weir, BS '40, and the reason he agreed in 1976 to become an area chairman for the Alumni Fund. Weir, who calls his Caltech degree his "14-karat gold diploma," says that helping to finance Caltech is one way he connects with the past — and with the future.

Weir is one of some 3,500 alumni who have volunteered as workers for the Alumni Fund during its seven-year history. And sentiments like his have enabled the Fund to win honors for three straight years in a competition among private universities sponsored by the Council for the Advancement and Support of Education (CASE).

This year the Fund again took first place in the sustained performance category. This award singled out the 1977-78 Fund headed by Ed Foss, BS '32. That year the Fund raised \$796,477 and achieved a 36 percent participation.

Charles F. Thomas, BS '35, national chairman in 1975-76, is not surprised that Caltech was able to win the award three years in a row. "Caltech alumni are very competitive," he says. "Once we get on top, our attitude is, 'You'll have to pull us off the mountain.'"

As a group, Caltech alumni are highly loyal, Thomas observes. Building on this loyalty through personal contacts among graduates was emphasized from the beginning as the key to the Fund's success. Donald D. Davidson, BS '38, national chairman in 1972-73, observed as he announced the Fund's reemergence: "If we can build on the enthusiasm that an alumnus already has for Caltech, then the giving will take care of itself. Caltech alumni have had an extra-special education, and they know this. Caltech doesn't want to produce a lot of number twos. It wants to graduate number ones."

The Alumni Fund as it reemerged in 1972 was guided by 15 members of an Alumni Fund Council. An original alumni solicitation effort had merged for a five-year period with the Science for Mankind development program in 1967. As that campaign drew to a close, the Fund was reorganized as a separate and permanent entity.

"Everyone agreed that we should run the Fund on an annual basis," says Harrison W. Sigworth, BS '44, national chairman in 1973-74. "We wanted to mount a long-range effort to encourage alumni to give regularly."

"We agreed that alumni leadership would be essential, and that the Fund would be run by the volunteers," says Reuben B. Moulton, BS '57, national chairman in 1974-75. "You can't snow Caltech graduates with high-pressure sales techniques. But a high percentage of them have positive feelings about the Institute, and they respond to those feelings when they're contacted by another alumnus."

"The willingness of alumni to help is amazing," according to Martin J.

Poggi, BS '37, national chairman in 1976-77. "Not many Caltech alumni actually enjoy raising money, but when they take on a responsibility, they do an excellent job."

The Fund Council members in 1972 stressed total alumni participation rather than the size of the gift. "We want all alumni to realize that they're part of the Caltech institution — that they have the opportunity to contribute financially and also to communicate their ideas about education and research," Davidson said in 1972. "This will make both the alumni and the Institute stronger."

This kind of communication is evident in personal calls by Fund workers to other alumni, and also in the annual telephone program. Each spring, some 220 workers use Sears Roebuck & Company's WATS line (thanks to Charles H. McDougall, BS '47) to call former classmates throughout the nation. Says Richard K. Smyth, BS '51, national fund chairman in 1978-79, "The workers spend about 10 percent of their time asking for money, and 90 percent exchanging news and information."

At the Sears headquarters, the workers are given a list of prospects — most of them people they knew

as students. "This guy was best man at my wedding," or "I haven't seen Frank since we both lived in Dabney 20 years ago" are typical remarks as workers scan their lists.

Outgoing calls from one alumnus, an attractive young woman who received her graduate degree at Caltech, produced some unique results. Favorably remembered by the individuals she contacted, she was invited out on a couple of dates.

Another caller was due for an even more surprising experience. Warned in advance to expect some rejections from the people on his list, he made his first telephone call. The prospect, an alumnus who had never given to the Fund before, promptly pledged \$7,500.

On other occasions, it has been the Alumni Fund staff that was in for a surprise. The Alumni Fund office once received an envelope indicating a \$25 gift but containing a check for \$2,500. A query revealed that the donor had accidentally added two zeroes when he wrote the check.

Another time, an envelope indicated a \$25 contribution but contained a check for \$683.27. Some detective work on that one showed

that the donor had reconciled his bank balance just after filling out the Fund envelope, and had written the check for the balance in his bank account. He was so pleased when the check was returned that he doubled his contribution.

Sharing a financial commitment to the Institute is one of the most effective ways to strengthen ties among alumni, Moulton believes. "The Fund has tapped people all over the country as Fund raisers," he says, "people who had had no direct contact with Caltech since their graduation. Their backing helps in many ways beyond the financial value of their gifts."

"Through the Alumni Fund, we've developed a group of workers who are attuned to Caltech and its needs and ready to be of assistance. They can give powerful support in our dealings with Congress, for example, or in student recruitment. We're trying to attract more students from outside the western United States. Our alumni are very impressive people, and their contacts with young people in their home areas have a lot of impact."

Sigworth notes that alumni — having become familiar with Caltech programs through involvement in the Fund — have gone on to join The Associates. A total of 138 alumni have become members of The Associates since the Fund was reactivated in 1972, he points out.

The professional successes achieved by Caltech alumni — and the measure of credit they give Caltech for these successes — is one reason why they support the Fund. But many alumni have a more far-reaching and altruistic motive for contributing. "Giving to Caltech isn't like giving to a charity," says Foss. "When you give to a charity you're giving to people who need help. But when you give to Caltech, you're investing in the future of your society, in the continuing growth of knowledge, and in solutions to the world's problems. Knowing this makes you feel a little better when you read the morning newspaper."

A "Thank You" for the President's Circle



Dr. and Mrs. Marvin L. Goldberger and Dr. and Mrs. Henry Lee, Jr., recently welcomed members of the President's Circle of The Associates to a garden luncheon at the president's home, in appreciation for their support for the Institute (members contribute at least \$5,000 a year). One hundred and nine members of the President's Circle, and faculty guests, attended. From left: Vernon Barrett, Mrs. Eaton Ballard, Mrs. Vernon Barrett, Francis S. McComb, and Eaton Ballard—all Life Members of The Associates. Dr. Lee is The Associates' president.

High school students learn in Caltech labs

More than 200 high school students from 80 southern California and 20 out-of-state high schools (including ones in Illinois and Wisconsin) studied at Caltech's 1979 summer secondary school science program this year.

The classes were taught by Cal-

tech upperclassmen and graduate students with faculty members as guest lecturers. Subjects included advanced molecular biology, chemistry, physics, physics/calculus, and pre-engineering. No credit is given by the Institute, but recommendation is made to the school district

that credit be given to students who achieve A or B grades.

There is no admission fee (the program is privately funded) and students are not required to submit transcripts for entry to the program. However, there are prerequisites for each subject.

Bruce Gold Medal to Fowler

William A. Fowler, Institute Professor of Physics at Caltech, has been awarded the 1979 Catherine Wolfe Bruce Gold Medal of the Astronomical Society of the Pacific. The medal is given for distinguished service to astronomy.

Fowler's research has included studies of the origins of the chemical elements, the production of deuterium and helium in the universal fireball and in massive objects,

and the release of gravitational and nuclear energy in massive objects. In 1978, he was awarded the Eddington Medal of the Royal Astronomical Society for his pioneering work in nuclear physics and its impact on astrophysics.

He is a member of the National Academy of Sciences and in 1976 he was president of the American Physical Society and he is recipient of numerous other awards.

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Alumni Fund tops its own record; raises \$924,014 from 4,655 alumni



*Arne Kalm
BS '56, MS '57*

Dear Fellow Caltech Alumni:

The 1978-79 Alumni Fund year, which ended on June 30, was a record year as we received \$924,014 from 4,655 alumni. The willingness of Caltech alumni to continue to support the Institute, as shown by these results, is most gratifying. Dick Smyth and the volunteer workers who participated last year are to be congratulated for the completion of a fine 12-month team effort.

Caltech achievements continue to be recognized on a national level. The Council for the Advancement and Support of Education (CASE) awarded first place in the sustained excellence category to Caltech's 1977-78 Alumni Fund, which was headed by Ed Foss. That drive achieved a 36 percent alumni participation. Joe Farmer, director of annual giving, accepted the award on behalf of Caltech at the CASE National Assembly meeting in New Orleans on July 10. The award, which consists of a Mobius strip and a \$1,000 grant from the United States Steel Foundation, has now been won by Caltech for three consecutive years.

For 1979-80 we are presented with the challenge of maintaining the momentum which the Alumni Fund has developed. Contributions from alumni continue to be an important source of unrestricted funds that support the leading edge of Caltech research programs. For 1979-80 a goal of one million dollars from 5,000 donors has been established for the first time. Both of these targets are going to be difficult to obtain without whole-hearted alumni cooperation.

Efforts have been made this year to reorganize the Alumni Fund so that more alumni will be involved in the solicitation effort, but each individual's activities will be less extensive. We also hope to achieve better volunteer coverage in all areas, especially those more distant from the Institute.

The Alumni Fund is strictly a volunteer effort. It is an attempt by those of us who are involved to recognize that Caltech has played an important role in our lives and plays a similar role in the lives of today's students. As we embark in the next few weeks on recruiting volunteers, I hope that each of you will consider answering in the affirmative when you are asked to participate in the fall solicitation program.

The fall program is a person-to-person effort organized by geographic areas. It isn't really a solicitation as much as an effort to have each of our alumni contacted individually by another alumnus. The message is simple: "Give if you can. I am giving because I think Caltech needs my support."

I urge each of you to join the Caltech Alumni Fund as a volunteer and as a contributor in the coming year, so that our ambitious targets of participation and financial support can be met.

Expectantly yours,

ARNE KALM, BS '56, MS '57
National Chairman
1979-80 Alumni Fund

Honor Roll of Donors 1978/79 Alumni Fund

July 1, 1978, to June 30, 1979

The Alumni Fund serves as the basic channel for all alumni contributions to the Institute. All outright gifts from living alumni for any purpose at Caltech are credited to the Alumni Fund unless the donor gives specific instructions to the contrary. On major gifts from alumni for a purpose other than the Alumni Fund, the first \$10,000 is credited to the Fund. The Fund encourages alumni to make gifts to the Institute for operating funds to support day-to-day costs.

The Honor Roll has been prepared with utmost care, but mistakes may have been made. If you find an error or omission, please accept our apology and help us avoid future mistakes by informing the Alumni Fund Office.

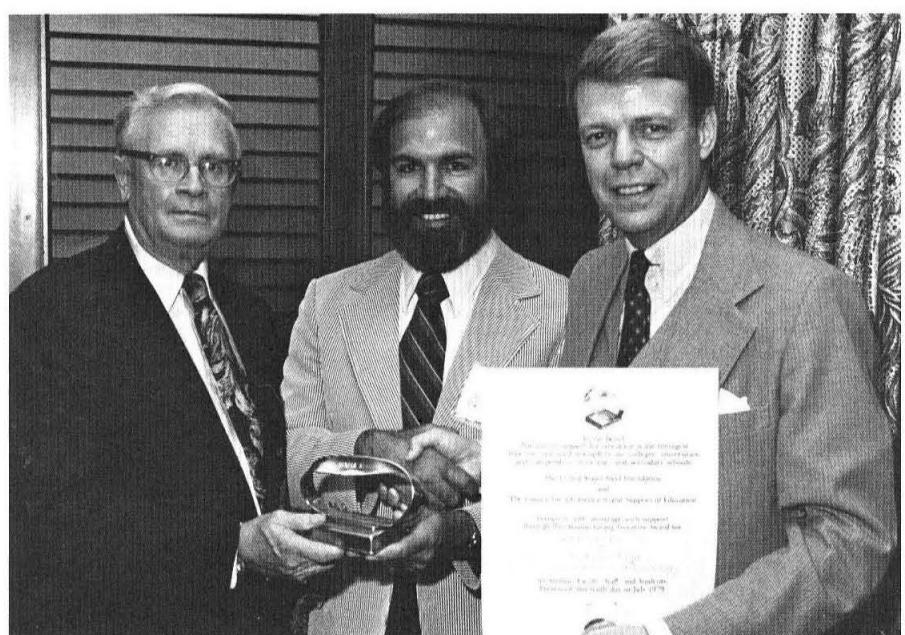
*The number following the name indicates how many years the alumnus has made an Alumni Fund gift since July 1, 1972. BOLD FACE NAMES are alumni who have not only made financial contributions, but also volunteered their time to work on behalf of the Alumni Fund last year.

Honorary Alumni and Other Friends

R. Stanton Avery	2	Olaf M. Frodsham	5
Robert F. Bachar	5	Horace N. Gilbert	7
James B. Black	7	Pedro A. Llach	1
Eric A. Brinkman	4	John W. Long	1

1915		J. C. Burks	5	Elmer L. Smith	7	James Boyd	6	Clyde E. Shields
	Robert S. Ferguson	3	George H. Clever	6	Laurance G. South	4	Edward M. Browder	7
			Donald W. Darnell	6	Lloyd A. Walling	7	Alan E. Capon	6
1916		Whitton P. Davis	3			George F. Collins	4	George F. Taylor
	Tom J. Harris	1	Louis H. Erb	5	1924		Robert Creveling	6
			Bryant Essick	7	Kenneth B. Anderson	6	Mortimer D. Darling	7
1917		Karl A. Ferkel	1	Harold H. Farnham	3	George K. Diamos	4	Karl W. Westlund
	J. P. Youtz	5	Harold R. Harris	6	Hugh B. Freeman	5	C. H. Dix	6
		George C. Henny	7	Morris Goldsmith	5	Richard M. Dodge	7	Fred A. Wheeler
1918		Edward R. Hess	1	Boris A. Gray	7	Harry K. Farrar	7	Frederick R. Wilson
	Clark F. Andrews	7	John Honsaker	7	Frederick J. Groat	7	Ralph E. Winger	5
	Olin L. Armstrong	6	Francis L. Hopper	7	W. L. Hall	6	Charles M. Wolfe	3
	Robert W. Flory	6	James T. Kenney	7	Robert C. Hastings	4		
	G. R. McDonald	4	Jordan Lummis	5	William L. Holladay	7		
	Earl Mendenhall	7	Malcolm Macurda	5	Frederic A. Hough	6		
		Maynard S. Reynolds	5	Emmett M. Irwin	7	Ray I. Hall	4	
1919		George K. Smith	7	Warren B. Leavitt	4	Robert F. Heilbron	6	
	Robert B. Pollock	2	Gerald G. Spencer	6	Theodore C. Losey	5	Vernon P. Jaeger	7
	Paul A. Scherer	6	William T. Taylor	7	Frank R. Lovering	6	1930	
		Charles W. Varney	5	Mitchell C. Lukens	3	Edward P. Jones	6	John E. Anderson
1920		Howard G. Vesper	6	Vincent T. Manchee	4	John B. Forster	6	
	Paul D. Barton	7	Arthur M. Whistler	7	Roy E. Miller	2	Charles L. Gazin	5
	Alfio Bissiri	2			Max W. Moody	1	Thomas L. Gottier	6
	Paul N. Crosby	5	1923		Donald F. Morrell	4	Frank S. Hale	4
	Abraham L. Hollinger	5	C. Donald Adams	5	Lyall A. Pardee	4	J. H. Fisher	7
	Harvey W. House	6	Joseph R. Alcock	7	Robert S. Ridgway	6	John B. Clark	6
	William C. Renshaw	4	Max B. Alcorn	6	Eugene W. Smith	6	Willis Clark	5
	R. C. Smith	7	Willard E. Baier	6	Charles F. Stearns	6	H. R. Crane	6
	Ernest H. Swift	5	William L. Bangham	7	Rolland S. Thomas	7	Ralph K. Day	7
		Roy W. Carlson	5	Edward A. Wilson	7	Edward H. Deardorff	6	
		Harold S. Endicott	5	Howard M. Winegarden	7	Raymond P. Eckis	4	
1921		Philip S. Clarke	6	David Wolochow	7	Rolland A. Philleo	6	Emory L. Ellis
	Edward G. Forgy	6	Ormsby H. Ensign	1	Donald F. Morrell	4	Lee W. Ralston	7
	Arthur L. Klein	6	Alva C. Hall	4	Lyall A. Pardee	4	Engle F. Randolph	3
	Louis E. Korn	4	Robert J. Hammond	6	Robert S. Ridgway	6	Roland W. Reynolds	7
	Lloyd E. Morrison	7	George I. Hickey	7	Eugene W. Smith	6	Eugene H. Riggs	3
	Albert L. Raymond	7	Charles S. Howard	4	Charles F. Stearns	6	Boris N. Sammer	5
	H. I. Scribner	4	Douglas G. Kendall	6	Rolland S. Thomas	7	J. D. Shuster	7
	Charles F. Simpson	4	Forest L. Lynn	2	Edward A. Wilson	7	Thomas S. Southwick	7
	Alfred J. Stamm	7	Lewis M. Mott-Smith	7	Howard M. Winegarden	7	W. L. Stanton	6
		John R. North	7	David Wolochow	7	Charles A. Swartz	5	J. F. Hesse
		Harold R. Preston	7			Donald R. Thompson	3	Thomas T. Hiyama
1922		Hubert A. Reeves	1			Russell E. Thompson	6	Roland F. Hodder
	Ralston E. Bear	7	Robert J. Schonborn	7	Raymond E. Alderman	6	Raymond W. Hoeppel	4
	Charles L. Bigelow	5	Richmond H. Skinner	4	Sydney A. Banks	6	S. E. Howse	6
					Sterling W. Beed	3	E. F. Turner	7
					Norris F. Bravender	3	Ralph M. Watson	4
					Michael C. Brunner	5	C. K. Wells	6
					A. P. Collins	7	Frank H. Wiegand	1
					Robert H. Dalton	7	1928	
					William U. Dent	3	Arnold O. Beckman	7
					Alfred L. Erickson	7	Stratford B. Biddle	5
					Frank M. Foster	5	J. L. Bobo	4

W. C. Nelson	3	Robert V. Carey	6	Clarence G. Schulze	3	Horace W. Davenport	5
Arthur B. Nomann	4	J. D. Cobine	2	Winchell H. Simpson	6	Lind B. Davenport	3
Lawrence C. Nye	4	John L. Cox	5	Nikolas Skaredoff	3	James A. Davies	6
G. W. Read	3	Robert E. Foss	7	Alvin J. Smith	3	Thomas J. Deahl	4
George L. Reynolds	6	A. W. Fraps	5	Hyman Solomon	3	Albert O. Dekker	6
Burt Richardson	3	Robert B. Freeman	7	J. C. Spade	4	Norman B. Dewees	7
George A. Ross	7	Donald B. Graff	7	William E. Stone	4	Gustave Ehrenberg	4
Otto Sasse	6	Jackson Gregory	6	Ferdinand E. Strauss	4	Harry Estes	3
Loren P. Scoville	1	Charles E. Hamlin	6	Robert L. Suggs	3	Arthur N. Etz	5
David Sheftel	7	Charles M. Harsh	7	Frank L. Wattendorf	4	Greer W. Ferwer	4
Theodore F. Stipp	5	Karl E. Hegardt	4	David H. Weinstein	2	Robert G. Fussell	6
Robert L. Stirton	3	Frank J. Hibbs	3	William T. Wheeler	3	Charles J. Gallant	2
Austin W. Strong	5	J. L. Hoard	7	Moses B. Widess	7	Bruce B. Gravitt	3
Jack B. Sturgess	7	Mills S. Hodge	7	Arnold P. Wilking	6	Thomas W. Griffiths	3
Eugene M. Thayer	6	John A. Hutchison	5			Robert J. Hallanger	4
Edward M. Thorndike	7	Tetsuo I. Iwasaki	1			James J. Halloran	7
John W. Towler	5	Charles W. Jones	4			Patrick J. Harney	5
O. F. Van Beveren	6	E. C. Keachie	7			John B. Higley	7
Howard W. Waite	5	Vincent C. Kelley	5			Richard H. Jahns	7
Walter D. Wilkinson	4	William L. Kent	6			James H. Jennison	7
Robert W. Wilson	4	Cecil L. Killgore	5			Wallace J. Johnson	7
Sidney Zipser	6	H. F. Launer	3			Robert G. Jones	6
1931		J. A. Leermakers	6			Robert P. Jones	6
Jack H. Amann	3	Patrick B. Lyons	6			Paul A. Joseph	5
William F. Arndt	7	Donald E. Marshall	4			Elmer L. Leppert	5
William A. Arnold	4	Thomas E. Mathews	4			Chester W. Lindsay	7
Rea A. Axline	7	James P. McLaughlin	6			Francis H. Clauer	7
Russell L. Biddle	5	Thomzs D. Oulton	4			Frank J. Malina	2
J. Carter Biggers	6	Paul G. Parsons	7			Fred V. Maloney	6
Lawrence W. Bolles	7	Robert E. Pelzel	3			Robert A. McRae	4
Perry M. Boothe	7	William H. Pickering	6			Franz N. Merralls	1
Arthur C. Brooks	6	Henry B. Pownall	6			William C. Mosteller	7
C. E. Buffum	6	E. M. Prudames	4			James D. Davis	7
Paul H. Cate	3	William C. Rockefeller	5			Nelson P. Nies	7
Glenn J. Chamberlain	5	Roland C. Ross	4			Charles W. Patrick	3
William M. Cogen	7	Jan G. Schaafsma	5			Frederick Pehoushek	1
Robert P. Coleman	6	Mervin A. Schuhart	4			Donald H. Ricketts	6
Nelson M. Cordes	4	William F. Schultz	5			Robert C. Felt	7
Edward B. Crossman	7	Joseph Sheffet	7			John M. Roehm	6
John S. Detweiler	7	William R. Shuler	3			A. A. Ray	7
W. F. Eberz	7	George O. Shull	6			Howard E. Gulick	7
Lawrence L. Ferguson	3	Brian O. Sparks	5			James S. Russell	7
Theodore R. Folsom	3	Alvin J. Tickner	5			H. T. Holton	6
James M. Gerschler	4	Grant D. Venerable	7			Robert K. Seidel	5
Norman R. Gunderson	6	Guy Waddington	3			Sander D. Sheff	6
William D. Hacker	6	Henry J. Welge	3			Alfred L. Slater	7
Marvin W. Hall	4	M. P. White	5			George W. Housner	7
Joseph C. Harker	2	Chester E. Wilson	7			John C. Stick	7
Rudolf C. Hergenrother	3	George Wofford	6			W. L. Howland	5
Earl S. Hill	7					James B. Stoddard	7
Emmette R. Holman	5					Henry W. Stoll	3
Byron B. Johnson	7	1933				Laurence J. Stuppy	7
Lawrence S. Kennison	7	Harrison S. Backus	4			Charles F. Thomas	7
Edward S. Kinney	7	Dan R. Mathewson	3			Elvin B. Lien	7
Harry A. Kirkpatrick	2	Earl E. Barnett	2			Charles S. Thompson	6
C. E. Kuykendall	5	Gilbert D. McCann	6			George J. Tooby	6
Ray E. Labory	6	William C. McFadden	5			Alfred L. Slater	7
George Langsner	7	Ygnacio Bonillas	7			James B. Stoddard	7
Laverne D. Leeper	5	Lawrence O. Brockway	2			James B. Stoddard	7
Robert M. Lehman	7	Lee T. Carleton	3			Henry W. Stoll	3
Charles K. Lewis	6	Alfred H. Clifford	7			Garth F. Nicolson	5
George E. Lewis	1	Everett F. Cox	5			Henry M. O'Neill	5
George E. Liedholm	7	Philip H. Craig	4			Maurice G. Donnelly	6
John R. McMillan	7	Dennis A. Newcombe	7			Franklin F. Offner	3
John W. Mehl	6	Edgar G. Crawford	6			Raymond H. Booth	4
Ross E. Morris	2	Raymond Cromley	4			Laurence J. Stuppy	7
Louie W. Mosley	4	Harold H. Donnelly	6			Charles F. Thomas	7
Dewolfe Murdock	7	Everett F. Foss	5			Elvin B. Lien	7
H. V. Neher	7	Robert D. Fletcher	5			Charles S. Thompson	6
Carl E. Overhage	7	Laurence K. Gould	6			George J. Tooby	6
Edward S. Peer	7	Robert E. Grossman	6			Alfred L. Slater	7
Sidney B. Pickles	3	Gregory K. Hartmann	5			James B. Stoddard	7
Leland D. Pratt	7	Edward A. Hayes	7			James B. Stoddard	7
George S. Rice	6	Robert G. Herlin	6			Henry W. Stoll	3
Roger T. Robinson	6	Robert G. Kennedy	7			Garth F. Nicolson	5
John T. Sinnette	2	Orin H. Shoemaker	1			Hugh M. O'Neill	5
Robert G. Smith	1	Arnold M. Kueth	2			Maurice G. Donnelly	6
Howard G. Smits	7	Darrell H. Sluder	7			Franklin F. Offner	3
Myer S. Stein	6	Arthur E. Lamel	5			Raymond H. Booth	4
Charles K. Stipp	5	Louis Stevenson	6			Laurence J. Stuppy	7
Thomas V. Tarbet	7	Alfred I. Switzer	2			Charles F. Thomas	7
James B. Taylor	7	Charlton M. Lewis	6			Elvin B. Lien	7
Alfred S. Voak	3	Thomas P. Thayer	6			Charles S. Thompson	6
Charles A. Wilmot	7	A. E. Thompson	5			George J. Tooby	6
George F. Wishnecus	2	Glenn E. Libby	3			Alfred L. Slater	7
David Zabaro	5	Alexander E. Libby	3			James B. Stoddard	7
1932		Robert E. Foss	4			James B. Stoddard	7
William A. Adams	6	Robert E. Foss	4			Henry W. Stoll	3
Thomas F. Anderson	1	Robert E. Foss	4			Garth F. Nicolson	5
Albert W. Atwood	6	Robert E. Foss	4			Hugh M. O'Neill	5
Millard V. Barton	5	Robert E. Foss	4			Maurice G. Donnelly	6
John D. Bascom	6	Robert E. Foss	4			Franklin F. Offner	3
Dean E. Batchelder	5	Robert E. Foss	4			Raymond H. Booth	4
Lewis B. Behlow	4	Robert E. Foss	4			Laurence J. Stuppy	7
Thomas W. Bell	6	Robert E. Foss	4			Charles F. Thomas	7
William R. Bergren	6	Robert E. Foss	4			Elvin B. Lien	7
John E. Blackburn	6	Robert E. Foss	4			Charles S. Thompson	6
William M. Bleakney	7	Robert E. Foss	4			George J. Tooby	6
Henry H. Bruderlin	2	Richard L. Russell	7			Alfred L. Slater	7



Joe Farmer, director of annual giving (center), accepts an award for sustained excellence among major private universities—the third successive award to Caltech in a competition sponsored by CASE. The award included a \$1,000 grant from the U.S. Steel Foundation, Inc. With Farmer are James T. Hosey, vice president and executive director of the U.S. Steel Foundation, Inc. (left), and James L. Fisher, president of CASE (right).

How much was given?

Alumni Fund gifts received directly from 4655 alumni

\$924,014

741 matching grants resulting from alumni gifts

\$108,429

Gifts made by 9 honorary alumni and other individuals

\$ 11,745

Total gifts to the Alumni Fund \$1,044,188

Gifts made by alumni to other institute projects

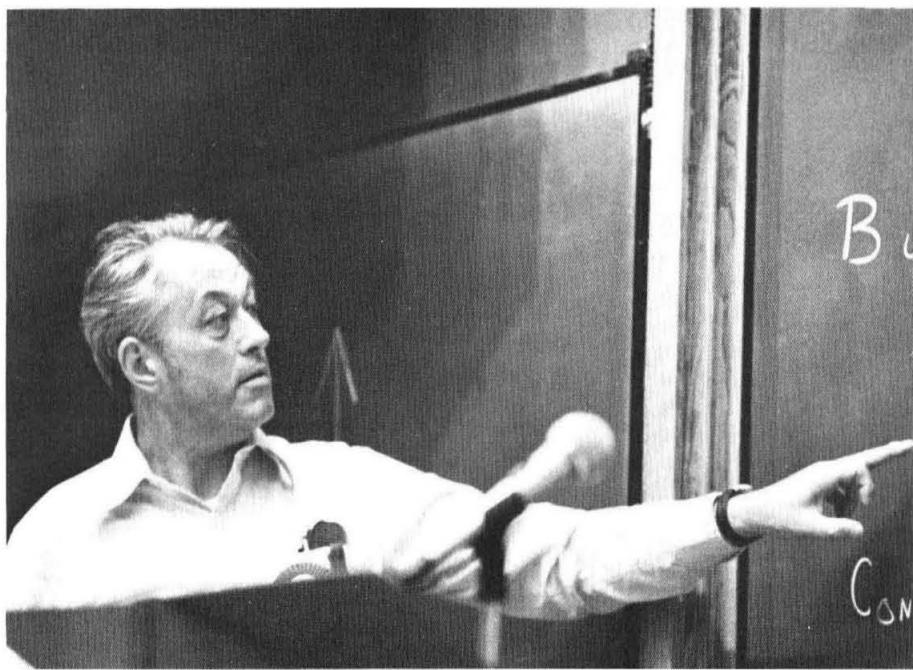
\$1,383,470

Grand Total of 78/79

Alumni Fund Gifts to Caltech

\$2,427,658

Hisayuki Kurihara	3	1938	William R. Cabeen	4	Edward O. Dickerson	6	
Ellsworth La Boyteaux	6	Carl W. Ahlroth	2	Francis L. Carlisle	6	Russell Doolittle	7
Michael M. McMahon	7	John R. Baker	6	Leonidas D. Coates	4	Ludwig I. Epstein	6
William R. Mendenhall	3	Robert J. Barry	7	Ronald B. Connelly			



George J. Gleghorn, BS '48, leads a discussion at the Leadership Conference.

Carl W. Carlmak	1	Richard H. Cox	7	Jackson C. Brownson	5	Kenneth G. Brown	4
Carl A. Carlson	5	Stewart Davis	7	Theodore D. Buetell	6	Robert Brydolf	4
Frank G. Casserly	5	John A. Drake	1	Claude L. Carter	7	Ross A. Buchanan	7
William F. Chapin	7	W. H. Peter Drummond	7	Joseph V. Charyk	5	Joseph S. Buller	7
Frederick W. Clarke	7	Edwin R. Fay	3	Patrick S. Chase	6	H. J. Cabral	5
William H. Corcoran	7	Frederick H. Felberg	6	Charles V. Chenault	3	Frank B. Clandenon	3
Carl E. Damberg	7	Frank A. Fleck	5	Warren L. Christianson	6	Leo R. Coda	4
Walter Z. Davis	7	Joseph B. Franzini	6	Loren W. Crow	3	Charles S. Cox	3
Donald E. Dawson	6	Willard P. Fuller	5	Robert R. Davis	4	Harold V. Curci	2
William L. Deniston	4	Elden R. Geib	7	Mitchell H. Dazey	5	Louis G. Dameson	2
Willis E. Dobbins	7	S. K. Gold	7	Harold S. Dewdney	6	Kenneth R. de Remer	4
Robert W. Durrenberger	3	Robert W. Goldin	6	Clyde A. Dubbs	7	John M. Debevoise	3
Gene L. Edwards	5	Elliott A. Green	6	Stanley A. Dunn	5	Howard H. Dixon	3
Quentin Elliott	7	Allan L. Grossberg	3	Alvin R. Eaton	2	Willard A. Dodge	7
Merritt V. Eusey	6	Arnold L. Grossberg	7	David A. Elmer	7	Joseph B. Earl	7
Paul S. Farrington	7	Robert E. Hall	2	Clarence E. Erickson	2	Raymond L. Ely	7
Paul H. Faust	5	Robert N. Hall	7	Frank W. Ernst	4	Walter R. Filippone	6
Walter E. Fellers	3	Wendell W. Harter	3	William R. Fair	6	Earle K. Fisher	5
Robert E. Fisher	4	Richard M. Head	4	Edgar W. Flavell	7	Maurice E. Ford	4
Sidney K. Gally	7	Oscar A. Heinlein	1	Edward P. Fleischer	4	Albert B. Furier	2
Martin J. Gould	3	Willard J. Hendrickson	7	N. O. Frederick	2	Alvin M. Galbreath	5
Alex E. Green	6	William B. Hicks	7	George C. Frey	3	Ralph L. Geisberg	3
Francis M. Greenhalgh	7	David L. Hill	2	Robert C. Frost	1	Thomas L. Gilbert	6
Edward A. Hall	6	Jack C. Hoagland	2	Jesse B. Graner	6	David R. Golding	1
James T. Harlan	7	George Holzman	4	C. D. Haymond	5	Harry J. Heimer	2
George B. Harr	6	Benjamin F. Howell	7	Albert O. Grote	5	Rudolph W. Hensel	2
Wallace D. Hayes	4	Carter Hunt	5	Harold Gruen	4	Lewis L. Grimm	6
Benjamin W. Helmick	3	Jack H. Irving	7	Robert G. Gustavson	2	Wilbur L. Hall	7
Charles T. Hight	3	Donald K. Jephcott	4	Willard M. Hanger	6	Thomas L. Hudson	5
Kenyon B. Howard	2	Peter H. Kafitz	4	Raymond F. Harless	1	Jay E. Hammel	2
Tom Hudspeth	7	William G. Kennedy	5	C. D. Haymond	5	Richard E. Hamer	2
Myoshi Ikawa	4	Thomas L. Kirtley	1	James B. Hull	7	Rudolph W. Hensel	2
Carol K. Ikeda	2	Emerson L. Kumm	7	Kenneth W. Johnson	7	Horace M. Higgins	3
William L. Ingessoll	5	Ervin R. Larson	6	J. K. Keelaghan	7	Thomas E. Hudson	5
Charles B. Johnson	6	Murray L. Lesser	7	Robert V. Langmuir	4	Winfield H. Hughes	6
Gilbert A. Jones	4	Philip B. Lutz	5	Robert L. Larson	7	Richard E. Kuhns	5
O. K. Jones	3	Francis V. Lyle	5	Herbert A. Lassen	7	Stephen D. Hurst	1
Robert E. Kingsmill	5	Robert E. MacKenzie	4	Theodore G. Lawrence	4	Alvin G. Lockett	5
Joseph P. La Salle	4	Wayne MacRostie	7	Edward B. Lewis	7	Richard H. Lockett	6
Robert B. Leighton	7	Phil T. Mahaffey	6	Richard N. Lewis	3	Franklin H. Knemeyer	4
Lloyd A. Lewis	7	Gershon R. Makepeace	7	Harrison C. Lingle	7	David R. Golding	1
Paul Lieber	1	Howard E. Martens	6	William A. Lobban	2	David R. Golding	1
Frank P. Lockard	5	Adrian S. Mayer	6	Richard E. Marsh	5	Harry J. Heimer	2
Charles L. Moore	6	John F. McClain	6	Mamoru Masaki	6	Rudolph W. Hensel	2
Robert F. Myers	3	Richard W. McCormack	7	Richard E. Marsh	5	Donald T. Greenwood	2
Donald S. Nicholson	7	Paul S. McKibben	5	Doyle F. Mattson	6	Lewis L. Grimm	6
Robert L. Noland	5	James F. Mead	3	Arthur O. McCoubrey	5	Donald S. Johnson	5
John J. Paulson	6	Robert T. Merrick	6	Joseph S. Martin	7	Ronald S. Johnson	5
Livingstone Porter	2	George F. Meyer	6	Charles G. McGee	4	Charles A. Rickard	3
William H. Rempel	1	John W. Miles	6	A. D. McRae	5	A. D. Scarbrough	5
John M. Richardson	2	Walter P. Mitchel	4	Samuel P. Morgan	7	John E. Richter	3
Max T. Rogers	4	Robert L. Moore	2	Richard E. McWethy	5	Harris M. Schurmeier	2
Joseph F. Rominger	7	Peter L. Nichols	3	Melvin L. Merritt	6	Thomas W. Norsworthy	4
Robert P. Routh	3	Meredith M. Nyborg	6	Knox Millsaps	1	Francis E. Odell	2
Claud S. Rupert	2	Carl B. Olsen	2	Franklin L. Knemeyer	4	Robert T. Nahas	6
John J. Rupnik	7	Herbert G. Osborne	3	Raymond F. Harless	1	John B. Nelson	7
George C. Sakai	3	Albert D. Paul	7	Robert L. Larson	7	Stanley F. Newman	5
Alfred Schaff	7	Charles W. Pearson	6	Arthur B. Pardee	3	John E. Pearson	5
Richard S. Shevell	2	Pichel R. Pichel	5	John E. Pearson	5	J. R. Nicholas	2
Richard F. Silberstein	3	Harrison A. Price	1	Kenneth L. Powlesland	7	James C. Nicholson	6
Reuben P. Snodgrass	3	William L. Rogers	4	Lloyd C. Pray	3	Thomas W. Norsworthy	4
Stanley E. Sohler	3	Rolf H. Sabersky	7	Rev. V. Rhoades	5	Francis E. Odell	2
John D. Spikes	5	Carl H. Savit	7	Walter F. Rhoades	6	Owen S. Olds	5
Parke P. Starke	1	Kenneth D. Schureman	2	William F. Rhoades	6	John B. Nelson	7
William B. Stephenson	6	Jean C. Schwarzenbach	7	Lawrence R. Rockwood	4	Stanley F. Newman	5
H. G. Stever	3	Orville E. Scribner	2	Harold J. Sack	4	John E. Pearson	5
Wilton A. Stewart	6	Irvin P. Seegmam	5	Richard Schamberg	7	Eugene W. Peterson	4
Robert F. Strickler	5	Charles M. Seibel	3	Arthur J. Schneider	3	Joseph M. Phelps	7
C. V. Sturdevant	2	Haskell Shapiro	5	Walter A. Schroeder	5	Robert O. Randall	4
Leland G. Swart	7	Jack C. Smith	7	Robert M. Shervin	2	Irving S. Reed	3
Charles H. Terhune	7	Robert R. Staley	3	John R. Rempel	7	John R. Rempel	7
Richard M. Vaughan	5	Leo Stoolman	6	Ralph G. Siu	3	Ralph S. Riffenburgh	4
William J. Wagner	6	Maynard Strader	7	M. C. Smith	4	William F. Roberts	1
Austin L. Wahrhaftig	6	George P. Sutton	3	Stanley C. Snowdon	3	Alfred D. Robinson	2
Clyde A. Wahrhaftig	3	Everett P. Tomlinson	6	William Snyder	7	Ko S. Sameshima	6
Le Roy G. Waigand	1	Kenneth Urbach	7	John R. Spencer	4	Wesley R. Sandell	7
Edwin P. Wald	7	Roy C. Van Orden	5	Shelton E. Steinle	6	Leroy Sanders	5
Dana E. Washburn	6	Carol M. Veronda	7	Jack D. Stephenson	2	Raymond A. Saplis	6
Robert H. Weight	7	Leroy A. Weller	5	Charles P. Strickland	7	George R. Saunders	4
John R. White	5	Gordon K. Woods	7	Ray A. Tedrick	6	Willard R. Scott	5
Lawrence C. Widdoes	7	1943	1	Frederick H. Tenney	7	David R. Shefchik	4
David S. Wood	7	Dewitt C. Allen	4	Oscar D. Terrell	7	George G. Shor	7
Cecil G. Young	5	Ralph G. Allrud	2	Ernest Wade	6	Harrison W. Sigworth	7
Keirn Zebb	6	Leonard S. Alpert	5	Allen D. Weeks	3	George F. Smith	7
1942		Earle R. Atkins	7	David F. Welch	7	Philip H. Smith	6
Jack L. Alford	3	John E. Wissinger	5	Richard J. Soike	7	Richard J. Soike	7
John R. Allan	7	1944	1	Joseph Solomon	7	Harrison W. Sigworth	7
Paul H. Allen	3	Robert H. Bashor	5	Joseph Tuedio	5	George F. Smith	7
George W. Almassy	2	M. W. Beckstead	4	David F. Walker	6	Philip H. Smith	6
Robert D. Altmaier	5	Nicholas A. Begovich	5	Teddy F. Walkowicz	2	Richard J. Soike	7
Robert E. Anderson	6	Arthur D. Belmont	3	Jurg Waser	5	Richard J. Soike	7
Richard A. Andrews	4	Robert L. Bennett	4	Floyd E. Weaver	3	Richard J. Soike	7
Hugh A. Baird	7	Horace L. Bethel	1	Doyle E. Wilcox	2	Robert M. Weidman	1
Dwain B. Bowen	5	Amasa S. Bishop	7	Holt Ashley	4	Paul H. Winter	7
Roger Brandt	6	James A. Blayne	5	John E. Winter	7	Allen E. Wolfe	7
John A. Brockman	7	Leon Blitzer	3	Elvis E. Beauchamp	7	F. O. Booth	4
David H. Brown	4	Glen R. Bracken	2	Barton B. Beck	3	1945	
Victor G. Bruce	6	Robert M. Bragg	5	Grant L. Benson	5	Allan J. Acosta	4
Robert J. Clark	2	Edgar P. Bridgland	2	William H. Bond	5	Kenneth G. Anderson	4
Stanley Corrin	5	Edward I. Brown	6	F. O. Booth	4		

Bruno W. Augenstein	4	**1946**	Orison Wade	4	Robert K. Roney	7

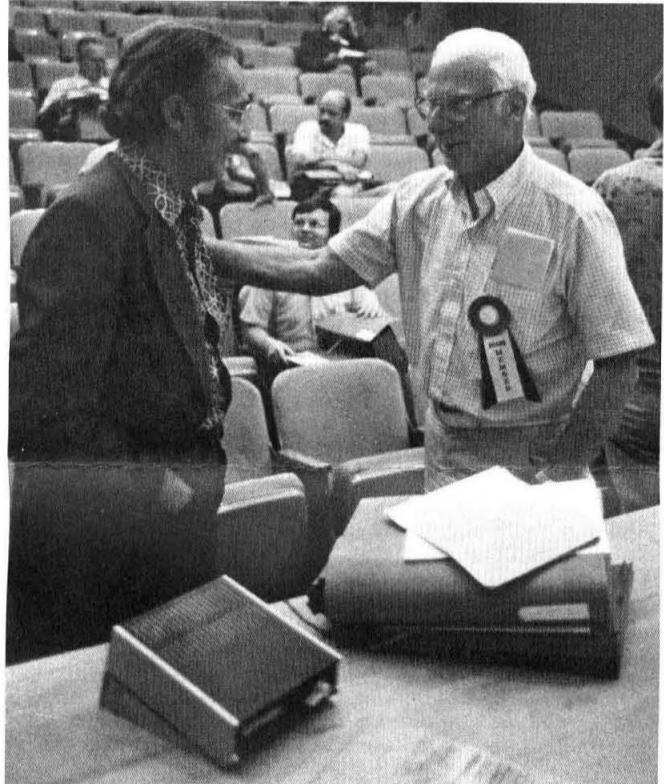
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Chemist Harry Gray demonstrates an ear-splitting catalytic reaction for alumni at the 1978-79 Leadership Conference as he admonishes: "You're the catalysts for the Alumni Fund. You have to catalyze the alumni to want to give." Gray is chairman of the Institute's Division of Chemistry and Chemical Engineering and the William R. Kenan, Jr. professor of chemistry.

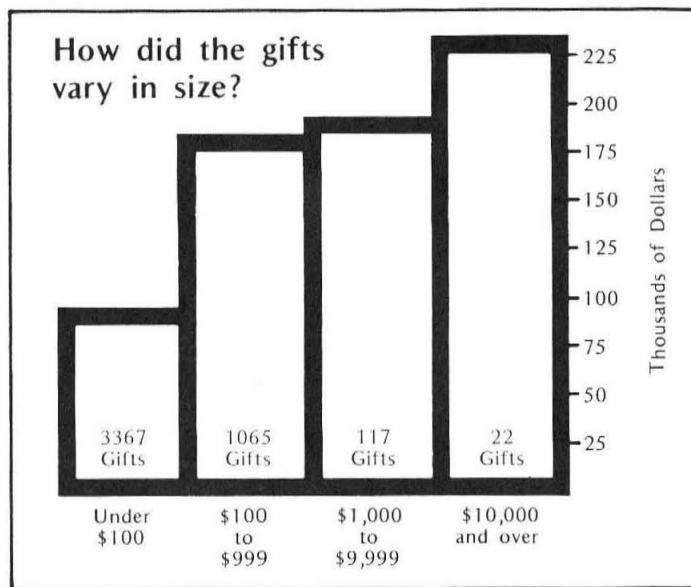
Harvey K. Holm	4	Murray S. Bornstein	5	Robert R. Pilling	5	William C. Bryan	4	Carel Otte	5	Harry A. Begg	2
Vincent R. Honnold	4	Franklyn H. Brady	5	Richard J. Pollak	2	Werner Buchholz	4	Robert E. Parker	3	Richard C. Bemis	5
Robert C. Hopkins	2	Gerald P. Breau	7	Robert L. Pons	5	Richard P. Buck	4	J. H. Pinckard	7	Roland A. Berner	4
H. Martin Hybertsen	7	Davenport Browne	7	David O. Powell	7	Stanley C. Burkett	5	Calvin E. Porcher	1	Robert E. Bible	5
Abner Kaplan	6	Arthur E. Brumington	6	William D. Pyle	7	Phillip G. Cook	5	William H. Proud	7	Dean M. Blanchard	4
Robert I. King	3	Arthur E. Bryson	6	William J. Ramsey	3	Duane H. Cooper	4	M. D. Quigley	4	Joseph R. Bookee	5
Thomas G. Lang	5	Ben Cagle	7	J. F. Renz	5	Fernando J. Corbato	4	Dean A. Rains	5	Eli Botkin	4
Donald M. Lilienthal	2	Hugh C. Carter	7	Theodore W. Rose	7	Henry A. Corriner	3	John W. Reeds	5	Ray D. Bowerman	3
Donald E. Lovelace	5	M. B. Carus	5	William I. Rumer	7	Harry E. Crossley	5	John R. Reese	5	Robert G. Boyer	5
Paul B. MacCready	4	Albert H. Clancy	3	Paul D. Saltman	6	Robert N. Curtis	4	Edward A. Revay	3	John M. Bozajian	5
Irwin L. Markowitz	7	Howard J. Cohen	3	Leland H. Satre	6	Bain Dayman	6	Werner B. Riesenfeld	7	Ellsworth A. Brown	3
Sol Matt	6	Alvin L. Cohen	5	Richard I. Schoen	6	Richard D. de Lauer	7	Glenn D. Robertson	4	Rodney S. Bunker	1
Roger E. Matzdorff	3	James S. Cooley	1	Frederic T. Selleck	5	Cecil W. Drinkward	5	Marco A. Romero	7	Thorne J. Butler	6
Albert H. McEuen	5	Theodore V. Crater	5	Frank H. Shelton	7	Frederick W. Drury	6	Philip Rosten	1	Ronald T. Caldwell	7
David E. Metzler	2	Frederick A. Curtis	6	Harry H. Shibata	7	Vern A. Edwards	7	Dwight C. Schroeder	2	Douglas E. Calley	3
Glen H. Mitchell	7	David H. Cutsforth	3	William H. Simons	6	Leo F. Frick	6	Aren H. Schuyler	5	George S. Campbell	7
Charles C. Moody	2	Warren E. Danielson	7	Don E. Six	4	Carroll L. Friswold	5	John M. Sellen	3	Bert H. Clark	6
Boudre C. Moore	7	Ralph E. Darling	6	George T. Skinner	6	Robert L. Gottier	3	Henry Shapiro	7	George H. Cleland	4
Harry J. Moore	7	Raymond E. Davis	2	William W. Smith	7	John M. Greene	7	John T. Shepherd	7	Robert E. Cobb	1
John K. Muller	5	Herman S. Dichter	5	Arthur O. Spaulding	7	Peter Grossz	7	Virgil J. Sims	7	Robert E. Covey	6
C. G. Murphy	5	Joseph A. Dobrowolski	5	Donald C. Stinson	7	William W. Haefliger	6	Jack W. Smith	4	George C. Dacey	5
Robert Peeler	7	Edward C. Duport	7	Albert Sundsmo	6	Raimo Hakkinen	6	Roland N. Smoot	3	Dean C. Daily	7
Edward V. Phillips	6	Oliver S. Dwire	5	William A. Sylvis	5	C. D. Hale	7	George E. Solomon	7	Edwin G. Dankworth	6
Herbert L. Podell	5	Clayton H. Englar	7	Albert M. Taylor	5	Michael A. Hall	6	Winsor Soule	4	Walter F. Davison	1
Robert W. Poindexter	7	Robert C. Evans	3	William C. Taylor	4	Geoffrey B. Holmes	3	Eugene G. Spencer	6	Aram J. Dervy	7
Arthur W. Reed	1	Gaelen L. Felt	4	Vernon E. Teig	4	J. R. Holmes	6	William T. Staats	4	William A. Drake	7
Wayne E. Rhynard	4	Robert L. Fisher	6	Robert T. Terriere	3	Charles S. Howard	5	Robert T. Stevens	3	John W. Dyer	6
George P. Riggsby	4	Robert B. Funk	6	Kenn M. Terwilliger	6	Peter A. Howell	7	Donald W. Stillman	4	Ernest Dzenedolet	4
Paul S. Rogell	3	James W. Funsten	1	Thomas A. Turner	5	William P. Irwin	7	Bruce B. Stowe	6	Bruce B. Stowe	6
Harold A. Rosen	4	Sidney G. Gibbins	3	Philip A. Vaughan	7	Rodman Jenkins	2	Bernard S. Strauss	7	David G. Elliott	2
Ronald B. Ruddick	3	Myrvan F. Gift	5	William T. Vickrey	3	Donald B. Jennings	5	Henry S. Takemura	5	John G. Elliott	5
Chandos A. Rypinski	6	Joseph M. Green	6	Milton C. Vogel	5	Robert R. Jennings	5	Alvin V. Tolstrup	6	James A. Enslow	7
George R. Schull	5	Ronald C. Greene	5	Thad Vreeland	5	Merle T. Kam	6	S. R. Valluri	1	Erdem I. Ergin	5
George R. Scott	6	Harry Gruenberg	6	Robert L. Walquist	5	John C. Kane	3	Victor A. Van Lint	3	Thomas R. Fahy	2
Wayne E. Sefton	5	John P. Hann	2	William W. Ward	7	Louis Katz	6	John Vrolyk	3	John R. Fee	6
James F. Shiells	4	L. E. Harmon	3	Warren P. Waters	2	Richard H. Knipe	7	William D. Warters	4	Arthur L. Freer	6
William H. Shippee	6	Paul B. Harris	7	Lowell G. Wayne	6	Robert H. Korkegi	7	James H. Watkins	3	Oliver H. Gardner	5
William E. Smyth	5	William N. Harris	6	Robert A. Weatherup	4	Max S. Kreston	5	Warren G. Whiting	4	Walter W. Goeddel	2
Conway W. Snyder	1	David K. Hayward	6	Mitchell Weiss	3	William D. Lansdown	4	Wilbur A. Wikholm	4	Rudolph J. Goerke	4
Richard A. Spellmann	5	Philip Hayward	7	Jack L. White	5	Almon E. Larsh	7	Calvin Wong	3	Raymond H. Greutert	6
Bernard O. Steenson	7	R. W. Heggland	7	Robert N. Willard	2	Robert R. Larson	3	Edsel A. Worrell	6	William T. Guy	1
Thomas H. Stix	6	Wayne M. Herzig	7	William C. Woods	3	David B. MacKenzie	7	Richard B. Wright	6	John V. Hallstrom	7
Robert S. Stone	5	Don B. Hibbard	7			Daniel Markoff	6	Francis A. Haskins	3	Francis B. Hedrick	6
Douglas C. Strain	7	Walter J. Hirschberg	3			Craig Marks	6	Paul F. Helfrey	3	Paul F. Helfrey	3
Charles Susskind	6	David S. Hogness	3	1950		Max V. Mathews	6	George O. Abell	1	Julius Hermann	7
Kenneth K. Tang	5	Paul W. Hubay	6	Jared Abell	4	James O. McCaldin	7	Robert G. Adler	7	Carl-Nils Hildbrand	4
John W. Thomas	7	Neal L. Hurley	6	Robert T. Adams	2	Robert E. McMillan	4	Clarence R. Allen	7	Carl A. Hirsch	5
James R. Thorpe	3	James E. Johnson	4	Harvey J. Amster	7	Ralph L. Merrill	7	Raymond L. Angelo	3	Richard H. Homewood	6
Frank W. Tungler	4	Stanley L. Kameny	5	George M. Arcand	3	Donald A. Montemezzi	6	Paul L. Armstrong	5	Frank L. Hooper	5
Roland W. Ure	4	John C. Kariotis	6	Donald O. Asquith	5	Marco A. Montemezzi	6	Peter L. Auer	2	Richard A. Hoppin	3
J. F. Valle-Riestra	6	Byron C. Karzas	7	Donald R. Baker	7	Donald W. Moore	3	Leo L. Bagley	4	Bradford C. Houser	4
Vincent A. Vis	7	Naomi Kashiwabara	7	Donald S. Barrie	6	Thomas W. Moore	3	Frederick G. Baily	7	Herbert M. Hull	7
Thomas V. Vrebalovich	7	Eli Katz	5	Donald R. Bartz	7	John T. Mosich	1	Mitchell B. Bain	4	James A. Ibers	4
James W. Walters	3	Robert W. Kermeen	5	Leon J. Bass	5	Robert L. Nelson	6	Robert W. Madden	5	Henry Ito	6
Alfred E. Waters	6	Daniel W. King	7	C. J. Blom	5	Gibson Oakes	5	Anthony J. Malanoski	6	John B. Johnston	5
Joseph W. Wechsler	3	Richard G. King	5	Wilson Bradley	3	David C. Oakley	3	David T. Manning	4	Hiroshi Kami	7
Fred M. Wells	7	Charles H. Knight	6	Marvin C. Brooks	7	Irving L. Odgers	2	Harold F. Martin	7	Terry W. Koerner	7
James G. Wendel	2	John F. Kostelac	7					Hugh J. Martin	3	Robert J. Kurland	5
William A. Wenzel	5	Irving L. Krumholz	5					Peter V. Mason	5	Thomas W. Layton	5
Harvey J. White	7	Charles E. Kuchar	7					Edwin A. Matzner	4	Dan B. Lemay	6
Richard S. White	4	Claude A. Lane	3					Howard M. McMahon	5	Carroll R. Lindholm	5
A. G. Whittaker	4	Victor N. Lawford	6					Richard G. Merritt	7	John H. Lobdell	7
John RB Whittlesey	6	P. H. Leiderman	5					Ulrich Merten	7	James T. Luscombe	3
David B. Wilford	7	F. B. Leighton	3					Frederick E. Mickey	3	Robert J. Mackin	7
Donald P. Wilkinson	7	Lionel L. Levy	6					Howard F. Mower	1	Robert W. Madden	5
Donald B. Williams	4	David A. Liberman	6					Robert R. Munro	1	Anthony J. Malanoski	6
William J. Williamson	7	Henry A. Long	4					Ritchey O. Newman	4		
T. A. Wilson	7	Everett E. Love	1					James C. Norris	5		
John K. Wimpiss	4	John R. Love	6					Richard K. Nuno	5		
Robert L. Winchester	5	Frederick A. Machetanz	6					Robert F. O'Connell	3		
William L. Woodson	3	Neil A. Mackinnon	6					Robert E. Odening	2		
F. H. Wright	4	Alexander M. Maisch	2					Max H. Ostrander	2		
Harvey W. Wright	6	Thomas R. Marks	3					John M. Palmer	3		
Byron L. Youtz	4	<									

William F. Sampson	5	Robert E. Rodman	4	Edwin J. Stofel	3
George V. Schliestett	5	John J. Rogers	1	Alfred H. Sturtevant	6
Don W. Schmid	5	James A. Ross	3	George W. Sutton	7
Alfred W. Sereno	1	Martin L. Sandell	7	Terry N. Thomas	7
Richard S. Sharp	7	Edward C. Saunders	2	Lawrence Wallcave	7
Albert Siegel	3	Logan H. Schlif	5	Ronald Watson	6
Raymond A. Sjodin	4	Ronald L. Shreve	7	Rolf D. Weglein	5
Paul E. Skoglund	4	Deane K. Smith	2	Richard D. Welsh	6
George I. Smith	4	Albert R. Snider	6	Ronald H. Willens	5
Robert E. Smith	4	Robert E. Stanaway	4	Robert H. Wood	5
Richard K. Smyth	7	William H. Staten	3		
William R. Smythe	5	Gilbert E. Stegall	4		
Sanford S. Sweet	5	Philip S. Thayer	6	1954	
Jack M. Sweetman	5	Clement J. Todd	2	John L. Abbott	3
Alfred W. Thiele	2	Richard R. Tracy	4	William F. Anderson	3
Bjorn A. Thorstensen	4	Jesse L. Weil	5	Fred C. Anson	7
Woldemar F. Von Jaskowsky	4	Richard S. Winkler	1	Samuel W. Autrey	3
L. R. Vreugde	1	William T. Wolf	1	George A. Baker	1
Robert L. Waid	5	Joseph F. Woods	1	Calvin L. Barker	6
Donald A. Wallace	5	Frank P. Woodward	6	Sidney B. Bellinger	7
William M. Whitney	7	Harold J. Woody	1	Philip W. Birkeland	7
Frederick E. Wood	6	Harry L. Yael	7	Gary D. Boyd	7
Lauren A. Wright	1	Gordon E. Zima	2	Norman H. Brooks	7
William V. Wright	7			G. E. Bryan	6
Alexander Wyly	7			Otto Cardinale	2
Yusuf A. Yoler	7			Thomas K. Caughey	5
	1953			Stephen J. Chamberlin	3
					5
					6
1952					
Paul M. Aagaard	1	Charles E. Benjamin	7	James C. Crosby	6
Berni J. Alder	1	Bert E. Brown	7	Howard L. Croswright	3
Robert B. Altermatt	5	Levi A. Brown	5	Robert D. Darragh	5
Paul D. Arthur	2	Coy R. Cantrell	4	W. B. Davis	4
Fred Barker	2	Paul R. Carter	6	John C. Day	1
Jack L. Becker	7	David J. Clark	3	Robert D. Dikkers	5
Max Bettman	3	George B. Cooke	5	Franklin D. Dryden	6
John A. Boppart	1	Donald C. Curran	7	Laverne G. Eklund	7
Norman Bulman	6	Edward H. Daw	7	Alexander N. Gansa	5
Eliot A. Butler	5	George R. Dubes	7	Frederick W. Garrison	4
Michael J. Callaghan	6	Lester D. Earnest	3	Edward J. Gauss	5
Daniel E. Carney	2	Robert L. Easton	4	Franklin E. Gillespie	1
Ralph S. Carrigan	3	Gordon P. Eaton	6	John G. Goetten	2
Mell D. Cassidy	3	Donald O. Emerson	1	Roger M. Golden	5
Dale W. Cox	4	Thomas F. Emery	3	Richard B. Harty	3



Harold B. Crockett, BS '40, and Ed Foss, BS '32.

Ernest R. Cram	7	Patrick J. Fazio	5	Leonard Hawn	1
Malcolm G. Davis	2	Caesar Fernandez	7	Lee A. Henderson	6
Robert P. Dawson	1	Richard W. Flygare	5	Jerome M. Hershman	6
Alexander Dessler	5	Kenneth E. French	5	James L. Hieatt	6
Ray F. Destabelle	3	William D. Gardner	4	Donald L. Hook	3
Richard R. Dickinson	7	John D. Gee	7	G. N. Huntley	7
George L. Ellman	6	Robert E. Gillingham	4	Weldon H. Jackson	4
George A. Eriksen	4	Alan H. Haber	5	Bruce A. Kaiser	6
Gerald D. Fasman	7	Alan M. Haire	6	Robert Katz	6
Thomas E. Ferington	4	Frederick C. Harshbarger	2	Moses Lerner	5
Richard H. Fuller	6	Rolf C. Hastrup	5	John T. Lloyd	3
Richard Gaibler	7	James A. Hendrickson	3	Arthur E. Miller	3
Waheed K. Ghauri	6	Herbert E. Henrikson	4	Jerry C. Mitchell	7
Ruben C. Gloria	3	Lyle N. Hoag	7	Manuel Morden	1
Richard J. Goldberg	4	H. R. Hunt	2	Bruce H. Morgan	6
Stanley Groner	5	Richard M. Jaffe	6	Hampton E. Mulligan	4
Thomas W. Hamilton	6	Henry R. Jex	4	Joe H. Mullins	4
Sigmund Hammer	1	Gene M. Jordan	4	Joseph J. Murray	2
David L. Hanna	2	Kenneth R. King	7	William A. Nevill	2
Bruno Harris	2	James R. Kliegel	1	William B. Nichols	3
Raymond L. Heacock	7	David E. Knapp	5	Kenneth H. Olsen	2
John L. Howell	7	Robert A. Koster	4	Robert E. Pechacek	5
Harry C. Hoyt	7	Paul E. Langdon	1	Clarence E. Peterson	5
William W. Irwin	7	James T. Latourette	5	Albert R. Pitton	4
Harold L. Jackson	6	Artur Mager	7	Donald B. Potter	5
Alan R. Johnston	5	Warren E. Mathews	3	Robert D. Ratney	3
W. B. Kamb	6	William D. McCormick	7	L. W. Richards	7
Richard Y. Karasawa	7	Dougal H. McRae	7	James D. Richey	6
Roy A. Keir	4	Leon C. Michaelson	7	Benjamin M. Rosen	7
Richard E. Kennon	5	Stanley J. Minton	6	Robert D. Ryan	5
George S. Kenny	5	Robert H. Morrison	5	Allan R. Sanford	3
David S. Koons	7	Forrest S. Mozer	4	Takeshi Sato	7
Francis R. Kramer	5	Kenneth F. Nicholson	3	Robert H. Shennum	6
Toshi Kubota	4	J. M. Ogilvie	4	Neal E. Smith	5
Edwin B. Kurtz	2	Gilbert B. Peppin	1	Robert L. Smith	2
David A. Lee	4	William A. Peterson	2	Quayton R. Stottlemeyer	2
Clinton Lew	6	Irving Rapaport	7	Cornelius V. Sundt	3
John M. McCool	6	Ronald L. Richmond	6	Simon Tamny	5
Charles R. Miller	1	Gerald H. Ross	6	Thomas J. Tyson	2
Randolph G. Moore	5	Sheldon Rubin	6	Gerard Van Hoven	1
Robert E. Oliver	4	Malcolm E. Scherer	4	John K. Wall	2
Robert H. Owens	3	Leon Scrydloff	3	George Wallerstein	1
Robert C. Perpall	7	Theodore D. Sheldon	2	Stuart H. Wemple	6
John C. Porter	2	Wallace D. Short	2	Hans E. Wohlwill	2
Howard G. Preston	4	Robert L. Spencer	6		
Stanley R. Rawns	7	Robert J. Stanton	2		
Arthur Richter	7	Lawrence D. Starr	6	1955	
Denton D. Riggs	3	Neil J. Stefanides	6	James L. Adams	4
William J. Rihm	5	David F. Stevens	5	John P. Andelin	7
Howard M. Robbins	2	Thomas C. Stockebrand	5	Lawrence C. Baldwin	5



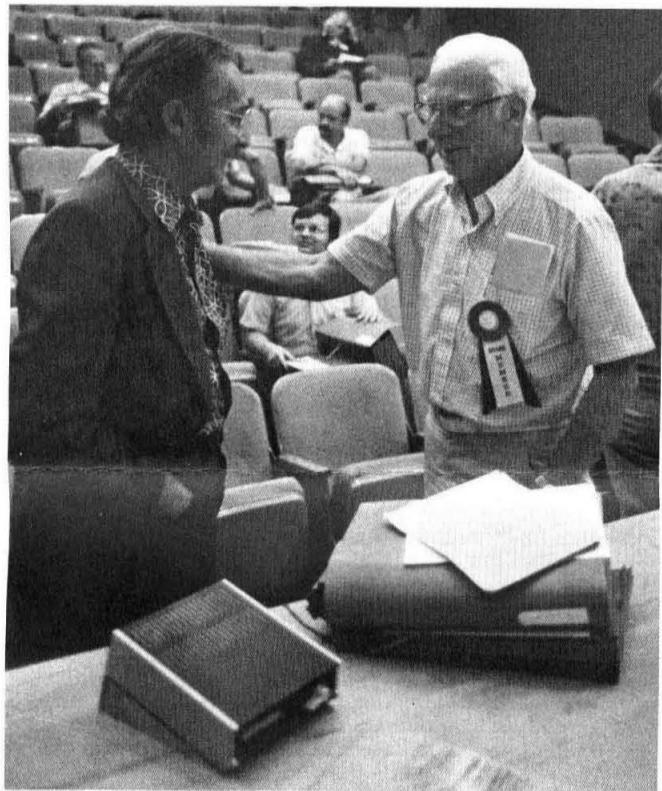
Thomas S. Dodge	5	Terry Cole	4
Michael B. Duke	7	Martin L. Connealy	4
Jerry W. Eggleston	5	John P. Conway	1
Duane D. Erway	7	Richard K. Cooper	2
Henry A. Flertzheim	1	Michael A. Cowan	7
Donald G. Fraasa	2	Richard T. Cowley	7
Charles G. Fullerton	5	Harold D. Culver	3
Albert E. Gaede	6	Serge T. Demetriaides	1
Allan M. Goldberg	7	David S. Dennison	4
James T. Goto	2	John K. Dienes	4
Lawrence S. Griffith	6	Michel A. Ebertin	3
Fred B. Hagedorn	7	Richard W. Ehrhorn	3
Frederick C. Hall	4	Craig T. Elliott	6
Albert L. Harbury	4	Alan S. Emanuel	5
William H. Hecht	6	Harvey M. Endler	7
Neil H. Herman	5	George F. Engelke	3
Herbert E. Hunter	6	Richard W. Fiddler	2
Kirk S. Irwin	3	Hugo B. Fischer	2
Theodore G. Johnson	7	Darrell E. Fleischman	5
Milton Kamins	6	Harold K. Forsen	6
Alexis I. Kaznoff	1	Alan K. Forsythe	6
Gerald Klaz	6	Jerrold Fried	6
Tsao H. Kuo	3	Gordon E. Glattenberg	6
Clarence H. Larson	3	Stuart Goff	4
Truman E. Long	6	Herbert R. Graham	6
Donald S. Lopez	4	William B. Gray	5
Jacob Lubliner	4	David E. Groce	7
Yen-Mow Lynn	4	John T. Harding	1
A. D. MacGillivray	6	Lance G. Hays	4
Daniel R. Mack	5	John L. Hokanson	3
Charles L. Malone	4	William J. Hooker	4
J. H. Marshall	6	Harvey H. Horuchi	6
Robert R. Marshall	2	Robert E. Huffmann	4
Jon Mathews	5	Robert S. Johnstone	2
Arthur F. Messiter	3	Mauritz J. Kallerud	7
Arthur Miller	1	William M. Kern	4
Thomas W. Miller	6	Richard M. Kirk	4
William A. Moeur	2	William J. Klenk	7
Peter M. Moretti	2	Michael W. Konrad	4
S. J. Morizumi	5	George D. Leal	2
Richard L. Morse	1	Frank B. Mallory	7
Charles H. Mosher	3	Keith B. Martin	4
Reuben B. Moulton	7	Harold D. Morris	3
Bernard H. Mueller	4	Lawrence H. Nelson	5
Girair M. Nazarian	3	Richard K. Nelson	1
Edwin D. Nelson			



Chemist Harry Gray demonstrates an ear-splitting catalytic reaction for alumni at the 1978-79 Leadership Conference as he admonishes: "You're the catalysts for the Alumni Fund. You have to catalyze the alumni to want to give." Gray is chairman of the Institute's Division of Chemistry and Chemical Engineering and the William R. Kenan, Jr. professor of chemistry.

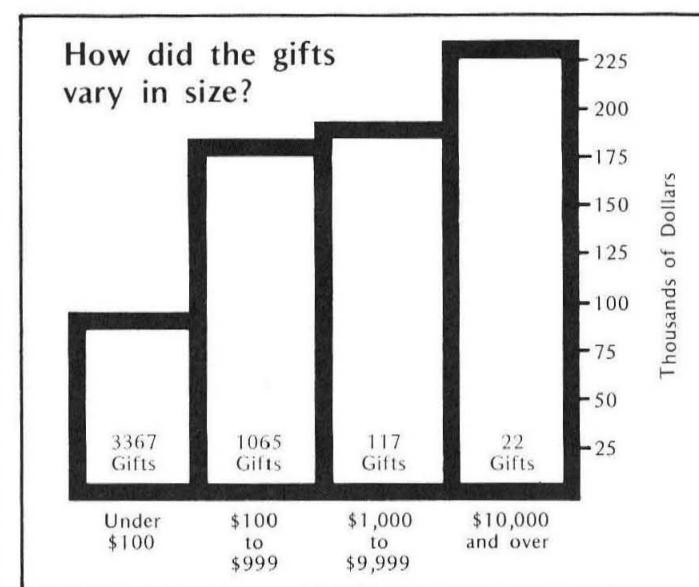
Harvey K. Holm	4	Murray S. Bornstein	5	Robert R. Pilling	5	William C. Bryan	4	Carel Otto	5	Harry A. Begg	2
Vincent R. Honnold	4	Franklyn H. Brady	5	Richard J. Pollak	2	Werner Buchholz	4	Robert E. Parker	3	Richard C. Bemis	5
Robert C. Hopkins	2	Gerald P. Breaux	7	Robert L. Pons	5	Richard P. Buck	4	J. H. Pinckard	7	Roland A. Berner	4
H. Martin Hybertsen	7	Davenport Browne	7	David O. Powell	7	Stanley C. Burkett	5	Calvin E. Porcher	1	Robert E. Bible	5
Abner Kaplan	6	Arthur E. Bruington	6	William D. Pyle	7	Phillip G. Cook	5	William H. Proud	7	Dean M. Blanchard	4
Robert I. King	3	Arthur E. Bryson	6	William J. Ramsey	3	Duane H. Cooper	4	M. D. Quigley	4	Joseph R. Bookee	5
Thomas G. Lang	5	Ben Cagle	7	J. F. Rentz	5	Fernando J. Corbato	4	Dean A. Rains	5	Eli Botkin	4
Donald M. Lilenthal	2	Hugh C. Carter	7	Theodore W. Rose	7	Henry A. Corrider	3	John W. Reeds	5	Ray D. Bowerman	3
Donald E. Lovelace	5	M. B. Carus	5	William I. Rumer	7	Harry E. Crossley	5	John R. Reese	5	Robert G. Boyer	5
Paul B. MacCready	4	Albert H. Clancy	3	Paul D. Saltman	6	Robert N. Curtis	4	Edward A. Revay	3	John M. Bozajian	5
Irwin L. Markowitz	7	Howard J. Cohen	3	Leland H. Satre	6	Bain Dayman	6	Werner B. Riesenfeld	7	Ellsworth A. Brown	3
Sol Matt	6	Alvin L. Cohen	5	Richard I. Schoen	6	Richard D. de Lauer	7	Glenn D. Robertson	4	Rodney S. Bunker	1
Roger E. Matzdorff	3	James S. Cooley	1	Frederic T. Selleck	5	Cecil W. Drinkward	5	Marco A. Romero	7	Thorne J. Butler	6
Albert H. McEuen	5	Theodore V. Crater	5	Frank H. Shelton	7	Frederick W. Drury	6	Philip Rosten	1	Ronald T. Caldwell	7
David E. Metzler	2	Frederick A. Curtis	6	Harry H. Shiba	7	Vern A. Edwards	7	Dwight C. Schroeder	7	Douglas E. Calley	3
Glen H. Mitchel	7	David H. Cutsforth	3	William H. Simons	6	Leo F. Frick	6	Aren H. Schuyler	5	George S. Campbell	7
Charles C. Moody	2	Warren E. Danielson	7	Don E. Six	4	Carroll L. Friswold	5	John M. Sellen	3	Bert H. Clark	6
Boudreux, Moore	7	Ralph E. Darling	6	George T. Skinner	6	Robert L. Gottier	3	Henry Shapiro	7	George H. Cleland	4
Harry J. Moore	7	Raymond E. Davis	2	William W. Smith	7	John M. Greene	7	John T. Shepherd	7	John E. Cobb	1
John K. Muller	5	Herman S. Dichter	5	Arthur O. Spaulding	7	Peter Grosz	7	Virgil J. Sims	7	Robert E. Covey	6
C. G. Murphy	5	Joseph A. Dobrowolski	5	Donald C. Stinson	7	William W. Haefliger	6	Jack W. Smith	4	George C. Dacey	5
Robert Peeler	7	Edward C. Duftort	7	Albert Sundsimo	6	Raimo Hakkinen	6	Roland N. Smoot	3	Dean C. Daily	7
Edward V. Phillips	6	Oliver S. Dwire	5	William A. Sylves	5	C. D. Hale	7	George E. Solomon	7	Edwin G. Dankworth	6
Herbert L. Podell	5	Clayton H. Englar	7	Albert M. Taylor	5	Michael A. Hall	6	Winsor Soule	4	Walter F. Davison	1
Robert W. Poindexter	7	Robert C. Evans	3	William C. Taylor	4	Geoffrey B. Holmes	3	Eugene G. Spencer	6	Aram J. Dervy	7
Arthur W. Reed	1	Gaelen L. Felt	4	Vernon E. Teig	4	J. R. Holmes	6	William T. Staats	4	William A. Drake	7
Wayne E. Rhynard	4	Robert L. Fisher	6	Robert T. Terriere	3	Charles S. Howard	5	Robert T. Stevens	3	John W. Dyer	6
George P. Rigsby	4	Robert B. Funk	6	Kent M. Terwilliger	6	Peter A. Howell	7	Donald W. Stillman	4	Ernest Dzendolet	4
Paul S. Rogell	3	James W. Funsten	1	Thomas A. Turner	5	Thomas A. Irwin	7	Bruce B. Stowe	6	Walter G. Edwards	6
Harold A. Rosen	4	Sidney G. Gibbins	3	Philip A. Vaughan	7	Rodman Jenkins	2	Bernard S. Strauss	7	David G. Elliott	2
Ronald B. Ruddick	3	Myrven F. Gift	5	William T. Vickrey	3	Donald B. Jennings	5	Henry S. Takemura	5	John G. Elliott	6
Chandos A. Rypinski	6	Joseph M. Green	6	Milton C. Vogel	5	Robert R. Jennings	5	Alvin V. Tollesstrup	6	James A. Enslow	7
George R. Schull	5	Ronald C. Greene	5	Thad Vreeland	5	Merle T. Kam	6	S. R. Valluri	1	Erdem I. Ergin	5
George R. Scott	6	Harry Gruenberg	6	Robert L. Walquist	5	John C. Kane	3	Victor A. Van Lint	3	Thomas R. Fahy	2
Wayne E. Sefton	5	John P. Hann	2	William W. Ward	7	Louis Katz	6	John Vrolyk	3	John R. Fee	7
James F. Shiells	4	L. E. Harmon	3	Warren P. Waters	2	Richard H. Knipe	7	William D. Warters	4	Arthur L. Freer	6
William H. Shippee	6	Paul B. Harris	7	Lowell G. Wayne	6	Robert H. Korkegi	7	James H. Watkins	3	Oliver H. Gardner	5
William E. Smyth	5	William N. Harris	6	Paul A. Weatherup	4	Max S. Kreston	5	Warren G. Whiting	4	Walter V. Goeddel	5
Conway W. Snyder	1	David K. Hayward	6	Mitchell Weiss	3	William D. Lansdown	4	Wilbur A. Wikholm	4	Rudolph J. Goerke	7
Richard A. Spellmann	5	Philip Hayward	7	Jack L. White	5	Almon E. Larsh	7	Calvin Wong	3	Raymond H. Greutert	6
Bernard O. Steenson	7	R. W. Heggland	7	Robert N. Willard	2	Robert R. Larson	3	Edsel A. Worrell	6	William T. Guy	1
Thomas H. Stix	6	Wayne M. Herzog	7	William C. Woods	3	David B. MacKenzie	7	Richard B. Wright	6	John V. Hallstrom	7
Robert S. Stone	5	Don E. Hibbard	7	Daniel Markoff	6	Craig Marks	6	Francis A. Haskins	3	Bruce B. Hedrick	6
Douglas C. Strain	7	Walter J. Hirschberg	3	1950	6	Max V. Mathews	6	Paul F. Helfrey	3	Paul F. Helfrey	3
Charles Susskind	6	David S. Hogness	3			1951		Julius Hermann	7	Delano Brouillet	1
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Joseph W. Wechsler	3	Richard G. King	5	Wilson Bradley	3	David C. Oakley	3	Hiroshi Kamei	7	Terry W. Koerner	7
Fred M. Wells	7	Charles H. Knight	6	Marvin C. Brooks	7	Irving L. Odgers	2	Robert J. Kurland	5	Robert Thomas Layton	5
James G. Wendel	2	John F. Kostelac	7					Thomas A. Van Lint	3	Dan B. Lemay	6
William A. Wenzel	5	Irving L. Krumholz	5					John H. Lindholm	5	Carroll R. Lindholm	5
Harvey J. White	5	Charles E. Kuchar	7					James T. Luscombe	3	John A. Mackin	7
Richard S. White	4	Claude A. Lane	3					Anthony J. Malanoski	6	Robert W. Madden	5
A. G. Whittaker	4	Victor N. Lawford	6					David T. Manning	4	Placement Assistance To Caltech Alumni	
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John K. Wimpess	4	John R. Love	6					Ulrich Merten	3	Please send me: (Check one)	
Robert L. Winchester	5	Frederick A. Machetanz	6					Frederick E. Mickey	3	<input type="checkbox"/> An application for placement assistance.	
William L. Woodson	3	Neil A. Mackinnon	6								

William F. Sampson	5	Robert E. Rodman	4	Edwin J. Stofel	3
George V. Schliestett	5	John J. Rogers	1	Alfred H. Sturtevant	6
Don W. Schmid	5	James A. Ross	3	George W. Sutton	7
Alfred W. Sereno	1	Martin L. Sandell	7	Terry N. Thomas	7
Richard S. Sharp	7	Edward C. Saunders	2	Lawrence Wallcave	7
Albert Siegel	3	Logan H. Schlipf	5	Ronald Watson	6
Raymond A. Sjodin	4	Ronald L. Shreve	7	Rolf D. Weglein	5
Paul E. Skoglund	4	Deane K. Smith	2	Richard D. Welsh	6
George L. Smith	4	Albert R. Snider	6	Ronald H. Willens	5
Robert E. Smith	4	Robert E. Stanaway	4	Robert H. Wood	5
Richard K. Smyth	7	William H. Staten	3		
William R. Smythe	5	Gilbert E. Stegall	4		
Sanford S. Sweet	5	Philip S. Thayer	6		
Jack M. Sweetman	5	Clement J. Todd	2	John L. Abbott	3
Alfred W. Thiele	2	Richard R. Tracy	4	William F. Anderson	3
Bjorn A. Thorstensen	4	Jesse L. Weil	5	Fred C. Anson	7
Woldemar F. Von Jaskowsky	4	Richard S. Winkler	1	Samuel W. Autrey	3
L. R. Vreugde	1	William T. Wolf	1	George A. Baker	1
Robert L. Waid	5	Edgar Y. Wong	3	Calvin L. Barker	6
Donald A. Wallace	5	Joseph F. Woods	1	Sidney B. Bellinger	7
William M. Whitney	7	Frank A. Woodward	6	Philip W. Birkeland	7
Frederick E. Wood	6	Harold J. Woody	1	Gary D. Boyd	7
Lauren A. Wright	1	Harry L. Yakel	7	Norman H. Brooks	7
William V. Wright	7	Gordon E. Zima	2	G. E. Bryan	6
Alexander Wyly	7			Otto Cardinale	2
Yusuf A. Yoler	7			Thomas K. Caughey	5
	1953			Stephen J. Chamberlin	3
		Robert H. Alexander	6		
		R. K. Bardin	4		
		William T. Beale	6		
		Donald G. Crosby	6		
1952					
Paul M. Aagaard	1	Charles E. Benjamin	7	James C. Crosby	6
Berni J. Alder	1	Bert E. Brown	7	Howard L. Croswright	6
Robert B. Altermatt	5	Levi A. Brown	5	Robert D. Darragh	5
Paul D. Arthur	2	Coy R. Cantrell	4	W. B. Davis	4
Fred Barker	2	Paul R. Carter	6	John C. Day	6
Jack L. Becker	7	David J. Clark	3	Robert D. Dikkens	5
Max Bettman	3	George B. Cooke	5	Franklin D. Dryden	6
John A. Boppart	1	Donald C. Curran	7	Laverne G. Eklund	7
Norman Bulman	6	Edward H. Daw	7	Alexander N. Gansa	5
Eliot A. Butler	5	George R. Dubes	7	Frederick W. Garrison	5
Michael J. Callaghan	6	Lester D. Earnest	3	Edward J. Gauss	5
Daniel E. Carney	2	Robert L. Easton	4	Franklin E. Gillespie	5
Ralph S. Carrigan	3	Gordon P. Eaton	6	John G. Goetten	5
Mell D. Cassidy	3	Donald O. Emerson	1	Roger M. Golden	5
Dale W. Cox	4	Thomas F. Emery	3	Richard B. Harty	5

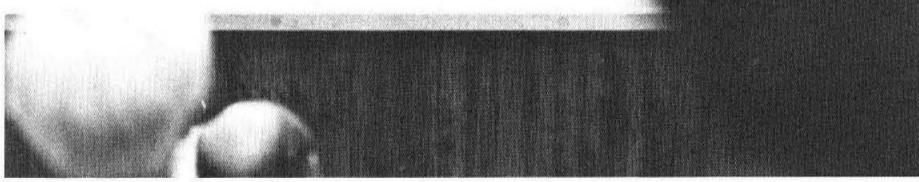
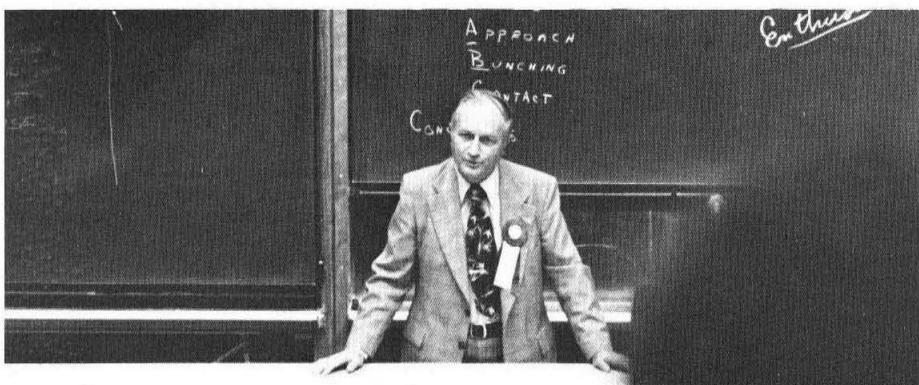


Harold B. Crockett, BS '40, and Ed Foss, BS '32.

Ernest R. Cram	7	Patrick J. Fazio	5	Leonard Hawn	1
Malcolm G. Davis	2	Caesar Fernandez	7	Lee A. Henderson	6
Robert P. Dawson	1	Richard W. Flygare	5	Jerome M. Hershman	5
Alexander Dessler	5	Kenneth E. French	5	James L. Hieatt	6
Ray F. Destabelle	3	William D. Gardner	4	Donald L. Hook	6
Richard R. Dickinson	7	John D. Gee	7	G. N. Huntley	7
George L. Ellman	6	Robert E. Gillingham	4	Weldon H. Jackson	4
George A. Eriksen	4	Alan H. Haber	5	Bruce A. Kaiser	3
Gerald D. Fasman	7	Alain M. Haire	6	Robert Katz	5
Thomas E. Ferington	4	Frederick C. Harshbarger	2	Moses Lerner	5
Richard H. Fuller	6	Rolf C. Hastrup	5	John T. Lloyd	3
Richard Gaibler	7	James A. Hendrickson	3	Arthur E. Miller	3
Waheed K. Ghauri	6	Herbert E. Henrikson	4	Jerry C. Mitchell	7
Ruben C. Gloria	3	Lyle N. Hoag	7	Manuel Morden	1
Richard J. Goldberg	4	H. R. Hunt	2	Bruce H. Morgan	5
Stanley Groner	5	Richard M. Jaffe	6	Hampton E. Mulligan	6
Thomas W. Hamilton	6	Henry R. Jex	4	Joe H. Mullins	4
Sigmund Hammer	1	Gene M. Jordan	4	Joseph J. Murray	5
David L. Hanna	2	Kenneth R. King	7	William A. Nevill	2
Bruno Harris	2	James R. Kliegel	1	William B. Nichols	3
Raymond L. Heacock	7	David E. Knapp	5	Kenneth H. Olsen	2
John L. Howell	7	Robert A. Koster	4	Robert E. Pechacek	5
Harry C. Hoyt	7	Paul E. Langdon	1	Clarence E. Peterson	5
William W. Irwin	7	James T. Latourette	5	Albert R. Pitton	4
Harold L. Jackson	6	Artur Mager	7	Donald B. Potter	5
Alan R. Johnston	5	Warren E. Mathews	3	Ronald S. Ratney	3
W. B. Kamb	6	William D. McCormick	7	L. W. Richards	7
Richard Y. Karasawa	7	Dougal H. McRae	7	James D. Richey	6
Roy A. Keir	4	Leon C. Michaelsen	7	Benjamin M. Rosen	7
Richard E. Kennon	5	Stanley J. Minton	6	Robert D. Ryan	5
George S. Kenny	5	Robert H. Morrison	5	Allan R. Sanford	3
David S. Koons	7	Forrest S. Mozer	4	Takeshi Sato	7
Francis R. Kramer	5	Kenneth F. Nicholson	3	Robert H. Shennum	6
Toshi Kubota	4	J. M. Ogilvie	4	Neale E. Smith	5
Edwin B. Kurtz	2	Gilbert B. Peppin	1	Robert L. Smith	2
David A. Lee	4	William A. Peterson	2	Quayton R. Stottlemeyer	2
Clinton Lew	6	Irving Rappaport	7	Cornelius V. Sundt	3
John M. McCool	6	Ronald L. Richmond	6	Simon Tamny	5
Charles R. Miller	1	Gerald H. Ross	6	Thomas J. Tyson	2
Randolph G. Moore	5	Sheldon Rubin	6	Gerard Van Hoven	1
Robert E. Oliver	4	Malcolm E. Scharer	4	John K. Wall	2
Robert H. Owens	3	Leon Scrydloff	3	George Wallerstein	1
Robert C. Perpall	7	Theodore D. Sheldon	2	Stuart H. Wemple	6
John C. Porter	2	Wallace W. Short	2	Hans E. Wohlwill	2
Howard G. Preston	4	Robert L. Spencer	6		
Stanley R. Rawn	7	Robert J. Stanton	2		
Arthur Richter	7	Lawrence D. Starr	6		
Denton D. Riggs	3	Neil J. Stefanides	6		
William J. Rihn	5	David F. Stevens	5		
Howard M. Robbins	2	Thomas C. Stockebrand	5		



Thomas S. Dodge	5	Terry Cole	4
Michael B. Duke	7	Martin L. Connelly	4
Jerry W. Eggleston	5	John P. Conway	1
Duane D. Erway	7	Richard K. Cooper	2
Henry A. Flertzheim	1	Michael A. Cowan	7
Donald G. Fraasa	2	Richard T. Cowley	7
Charles G. Fullerton	5	Harold D. Culver	3
Albert E. Gaede	6	Sterge T. Demetria	1
Allan M. Goldberg	7	David S. Dennison	4
James T. Goto	2	John K. Dienes	4
Lawrence S. Griffith	6	Michel A. Ebertin	3
Fred B. Hagedorn	7	Richard W. Ehrhorn	3
Frederick C. Hall	4	Craig T. Elliott	6
Albert L. Harbury	4	Alan S. Emanuel	5
William H. Hecht	6	Harvey M. Endler	7
Neil H. Herman	5	George F. Engelke	3
Herbert E. Hunter	6	Richard W. Fiddler	2
Kirk S. Irwin	3	Hugo B. Fischer	2
Theodore G. Johnson	7	Darrell E. Fleischman	5
Milton Kamins	6	Harold K. Forsen	6
Alexis I. Kaznoff	1	Alan K. Forsythe	6
Gerald Klaz	6	Jerrold Fried	6
Tsao H. Kuo	3	Gordon E. Glattenberg	6
Clarence H. Larson	3	Stuart Goff	4
Truman E. Long	6	Herbert R. Graham	6
Donald S. Lopez	4	William B. Gray	5
Jacob Lubliner	4	David E. Groce	7
Yen-Mow Lynn	4	John T. Harding	1
A. D. MacGillivray	6	Lance G. Hays	4
Daniel R. Mack	5	John L. Hokanson	3
		William J. Hooker	4
		Harvey H. Horuchi	6
		Robert E. Huffman	4
		Robert S. Johnstone	2
		Mauritz J. Kallerud	7
		Arthur Miller	1
		William M. Kern	4
		Richard M. Kirk	4
		William J. Klenk	7
		Michael W. Konrad	4
		Peter M. Moretti	2
		S. J. Morizumi	5
		George D. Leal	2
		Frank B. Mallory	7
		Keith B. Martin	4
		Harold D. Morris	



Ernest Wade, BS '43, MS '47, shares information with alumni at the Leadership Conference.



Don E. McFaddin, BS '28, talks about presenting Caltech's needs to other alumni.

Stanley R. Rawn, Jr., BS '52, MS '53, delivers the Leadership Conference keynote address.

Robert H. Bond	7	Jain-Ming Wu	7
Walter K. Bonsack	7	Robert E. Zartman	2
J. P. Bromberg	4	Jonas S. Zmuidzinis	5
William D. Burnett	2		
Robert E. Chandos	3		
Frank W. Childs	2	1960	
Douglas R. Christman	7	Eric G. Adelberger	4
Joseph M. Colucci	7	Donald W. Anderson	1
Ritchie B. Coryell	1	William L. Anderson	4
Mert Cramer	2	Dean W. Anschultz	2
Walter J. Cribbs	2	Charles E. Antoniak	3
John I. Dick-Peddie	6	John A. Bard	2
Richard D. Dietz	3	Carl S. Benson	5
Eugene R. Doering	7	Harry H. Bingham	2
Rolf Engleman	7	Thomas K. Bjorklund	6
Richard M. Goldstein	5	Graeme A. Blake	3
William R. Graham	5	David J. Blakemore	5
L. D. Green	3	Billy R. Blanchard	4
Joel D. Greenberg	4	Thomas E. Bowman	4
David Handel	1	Lowell E. Clark	7
H. J. Hansen	4	Frank H. Cormia	3
Philip D. Harriman	4	William K. Davis	2
Timothy M. Harrington	7	Kendall L. Dinwiddie	4
Robert H. Hertel	2	Bruce R. Doe	6
David K. Himrod	3	Douglas J. Dunham	3
W. N. Huse	7	Robert B. Eglington	2
Edgar T. Irons	2	Donald H. Voet	6
C. R. Johnson	6	William F. Wagner	4
R. M. Jones	6	Howard C. Evans	6
John J. Kalvinskas	6	Gustav N. Wassel	6
H. J. Keisler	2	Donald C. Wilson	4
Donald J. Ketter	4	Edward A. Flinn	4
Gerhard J. Klose	1	Jonathan Francis	1
Murray A. Koerner	7	Samuel Ginsburg	4
Kalman I. Krakow	6	Robert Goldstein	7
Norman B. Kramer	3	Walter C. Gottschall	5
Wayne C. Kreger	4	Egbert Graeve	5
Dennis W. Kuli	6	William F. Greenman	3
Robert J. Kwik	2	Jerry D. Griffith	4
Dewitt Landis	7	Alfred W. Hales	6
James D. Larson	4	Roger W. Harder	2
Kaye D. Lathrop	3	Herman G. Hartung	6
Anthony Leonard	7	Kenneth E. Harwell	5
Lewis M. Linson	3	Henry H. Hilton	1
Richard F. Long	2	Melvin E. Holland	4
David G. Luenberger	5	Leroy E. Hood	6
Richard B. MacAnally	5	Theodore A. Jacobs	6
Gary L. Marlotte	6	Gerald R. Jantscher	3
Gail A. Massey	5	Paul C. Jennings	7
Robert J. McElvain	4	Peter A. Johanson	3
Francis C. McMichael	6	Anthony E. Johnson	3
Harvey J. Meyer	4	Gordon Kramer	5
Richard C. Montgomery	2	Allan Lademan	3
Andrew R. Nasser	4	Marshall Lapp	1
Gordon C. Oates	1	Ronald G. Lawler	4
Ralph B. Owen	6	Erick L. Lindman	6
Robert M. Paithorp	6	D. M. Lindquist	4
Dennis L. Paull	4	Hans D. Linhardt	1
Michael W. Peters	4	Gordon D. Long	7
James S. Petty	6	Norman E. MacLean	1
Kirk A. Polson	7	Jacob V. Maizel	2
Allan R. Porush	7	Leonard A. Maley	3
John C. Price	6	Donald M. Malone	3
Donald O. Rasmussen	5	Richard L. Mauger	4
Michael H. Rusin	3	Douglas R. McLane	1
Robert M. Schmidt	4	Karl L. Meier	1
Alan Soler	5	Jean C. Meuris	6
Ivo Tammaru	6	Carleton B. Moore	7
Terry O. Teigen	2	Gerry Neugebauer	7
Lawrence F. Tenn	3	Robert L. Norton	3
Frank L. Vernon	4	Peter E. Oettinger	4
Joseph L. Vogl	3	Daniel B. Olfe	4
Willard H. Wells	4	Jerald V. Parker	4
John W. Wesner	6	William W. Porterfield	4
Donald M. Viberg	6	David F. Rearick	6
William Y. Wong	4	Roy E. Reichenbach	7

David W. Kendle	7	Hugh Kendrick	2	Richard E. Sears	1	William E. Schoknecht	3
Edgar F. Kiefer	1	Philip R. Kennicott	6	Truman L. Seely	6	John R. Schuster	6
Hugh H. Kiefer	5	Joseph Kohler	5	James F. Shaw	6	George L. Scott	6
Ronald A. Kleban	6	Robert G. Langsner	2	Yun-Yuan Shi	1	Richard A. Scott	7
Stanley A. Klein	3	Roy N. Levitch	2	Jon H. Shirley	6	Lionel S. Senhouse	1
Donald H. Lamb	3	Thomas J. Little	6	Jay Smith	2	Leroy E. Sievers	4
Donald R. Lampre	4	Chung C. Liu	6	William Studier	7	Ralph V. Skarda	1
Delano R. Lawin	3	Orval G. Lorimer	6	Ivar H. Tombach	5	William C. Stwalley	5
David S. Loebba	3	Gerald Marxman	6	Pin Tong	4	Don W. Terwilliger	2
John E. Lohman	7	John F. McCarthy	7	Harris E. Ulery	5	Volkmer M. Vogt	4
Ivo Lucchitta	3	Stanley B. Mellsen	1	James G. Williams	7	Janusz Warszawski	4
Henry Luming	6	Hugh T. Millard	4	Ying-Chu L. Wu	7	Michael T. Wauk	4
Robert E. Lushene	3	Edward S. Miller	4	Louise G. Young	6	Wilkes H. Weber	6
Hayden B. Macurda	4	Gary F. Mitchell	7	1964		Dennis R. White	6
Wayne A. Massey	3	Ralph C. Moore	2	Curtis L. Atkin	3	P. F. Winkler	6
William B. Mather	1	William J. Moore	1	Donald Baganoff	7	Thomas H. Wirth	1
Peter C. Mayer	2	P. D. O'Riordan	2	Peter Bain	3	Alvin B. Young	3
Howard C. Merchant	2	David J. Osias	4	Bruce R. Beegly	5		
David B. Morse	1	Michael T. Palmer	2	Michael W. Blasgen	1		
Robert D. Nason	6	Julian F. Prince	6	Richard R. Burgess	5		
Richard S. Norman	3	Charles H. Raddy	1	Richard R. Burgess	6		
William W. Parker	5	Marc L. Renard	2	John R. Burke	6		
Elliot N. Pinson	7	Robert L. Rosenfeld	7	George R. Cannon	5		
Charles A. Ray	7	Carl M. Rovainen	7	Herbert H. Chen	3		
William C. Ripka	3	Peter T. Rux	7	John E. Clauser	4		
Oliver Seely	7	Spicer V. Conant	2	Spicer V. Conant	7		
Charles J. Siegel	7	John C. Stansel	2	Wayne R. Cooper	6		
Warren L. Simmons	2	Millard Susman	1	Albert E. Cosand	6		
Stephen D. Slobin	4	Raynold A. Svenson	7	Elton D. Bellinger	3		
Laurence J. Sloss	7	Robert J. Tait	1	J. G. Blackinton	3		
John R. Smith	4	Joel Tenenbaum	4	Donald L. Blumenthal	5		
Frank T. Snively	1	Kip S. Thorne	6	Robert C. Burkett	5		
Frank W. Spaid	4	Michael J. Townsend	4	I-Lok Chang	3		
Howard M. Stainer	2	John C. Alleman	2	Thomas S. Chapman	4		
Harold M. Stark	3	William J. Anderson	5	Phillip J. Chase	5		
John P. Stenbit	3	Brian C. Belanger	6	Elton D. Bellinger	3		
Douglas K. Stewart	3	Frederic A. Wallace	1	George R. Cannon	5		
Gary W. Stupian	2	Francis W. Wang	4	Elton D. Bellinger	3		
Kaytar G. Sugahara	6	William H. Wood	7	Maxwell C. Cheung	4		
Samuel R. Sutt	6	Victor L. Yen	4	Donald R. Chivens	5		
Henry A. Thiessen	3	Robert C. Yost	2	Stanley A. Christman	7		
Gary G. Tibbets	4	Clyde S. Zaidins	7	Jules B. Cohen	5		
John A. Todoroff	6			Barry W. Crabtree	5		
John B. Trenholme	6			Asadour H. Hadjian	6		
David P. Turner	4			Steven D. Hall	3		
S. R. Varanasi	1			Robert D. Hanson	1		
Gary O. Walla	6			William M. Hardam	3		
R. C. Brosi	3			John B. L. Harkness	6		
Stephen W. Bruenn	2			John C. Dalton	6		
Robert B. Bump	5			Roger C. Davison	7		
Richard G. Burke	1			Raymond K. de Long	5		
James E. Ceddis	3			Walter J. Deal	3		
John C. Gershwin	5			Peter N. Demopoulos	3		
William H. Bettes	2			Barry W. Dinius	1		
Reginald W. Clemens	6			Nicholas I. Djeu	4		
Donald H. Close	3			Asadour H. Hadjian	6		
James E. Cordes	6			Steven D. Hall	3		
John D. Curtis	2			Robert D. Hanson	1		
Donald P. Du Bois	1			William M. Hardam	3		
Fred J. Hameetman	5			John B. L. Harkness	6		
Carl W. Hamilton	4			John C. Dalton	6		
Lyndon M. Hardy	7			Roger C. Davison	7		
John L. Kleiderer	4			Raymond K. de Long	5		
Michael D. Krieger	3			Walter J. Deal	3		
Alvin L. Kwiram	2			Peter N. Demopoulos	3		
Charles F. Leonard	5			Barry W. Dinius	1		
Mark Levinson							

Peter M. Ryan	6	Philip J. Laipis	7	John R. Eyler	5	James E. Burns	5
William F. Satterthwaite	4	Michael J. Laughlin	1	Roger A. Fajman	2	Robert D. Campbell	2
John C. Simpson	5	George T. Lengyel	6	Michael G. Foley	3	Daniel P. Chang	4
Terry R. Simpson	6	John V. Levy	5	John B. Foster	2	Edward J. Chapyak	6
Zoltan G. Soos	1	Alston C. Lundgren	4	Dennis M. Furukawa	7	Barry M. Cohen	4
Edwin P. Swatek	3	R. P. Lynch	4	Kimberly R. Gleason	3	Erno S. Daniel	1
Robert M. Sweet	5	Ernest S. Ma	1	Michael G. Hauser	5	Charles N. David	2
Richard K. Teague	7	Julius M. Maday	5	Arnold H. Henderson	3	Henry K. de Witt	2
A. Frederick Thompson	4	Joseph Maserjian	5	Terrill W. Hendrickson	5	Dennis J. Diestler	3
Nien-Chien Tsai	6	David B. McCarroll	6	James R. Ipser	3	Paul E. Dimotakis	6
John J. Turecek	4	Tom R. Miller	3	Susan W. Kieffer	4	Robert G. Dunlap	5
Sachio Uehara	1	Thomas B. McCord	1	Ralph Y. Komai	3	Joseph D. Duplak	3
Athanassios D. Varvatsis	6	Donald C. Morgan	5	John L. Lam	5	Denis A. Elliott	5
S. S. Watson	4	Gordon E. Myers	3	Frederick K. Lamb	2	Leonard A. Erickson	3
Donald H. Webb	4	Louis G. Newman	6	Richard A. Landy	2	Leslie G. Fishbone	6
I-Min Yang	2	Richard C. Nielsen	7	Gary W. Little	6	Kirby W. Fong	4
1966		Thomas E. Oberjet	1	Reagan W. Moore	1	Philip W. Garrison	1
John R. Adams	5	Wallace L. Oliver	4	Francis G. Moses	3	Stuart R. Goodgold	1
Walter J. Arabasz	2	Jay S. Pearlman	2	Stephen A. Muscato	5	Edward J. Groth	4
Michael G. Aschbacher	3	David B. Posner	5	Richard S. Naylor	3	Roy W. Harding	6
Richard H. Ault	6	Howard T. Powell	2	John D. Norgard	6	Ryuji Hasegawa	1
James L. Blue	6	Charles Y. Prescott	7	Douglas D. Osherooff	2	John A. Hoef	7
William G. Bounds	5	Richard A. Quint	3	Edward J. Patula	6	Frederick J. Hollander	4
James W. Brooks	7	Donald W. Radcliffe	2	Arlin R. Peters	5	Joel A. Huberman	2
Jonathan F. Callender	4	Gary A. Ratner	1	Joram P. Piatigorsky	4	Harry L. Hyndman	4
Richard B. Chapman	6	Donald S. Remer	6	Michael Plouf	2	Ronald H. Knapp	2
Delo K. Chun	5	Arthur D. Riggs	6	Michael S. Pollock	7	David A. Kolb	6
George R. Clark	5	Edward L. Robertson	1	Alan L. Porter	7	Gregory N. Kourilsky	6
Milton J. Clauer	5	John D. Rouse	6	Franklin G. Potter	1	Mitsuru Kurokawa	1
Dean N. Clay	7	Carl J. Scandella	6	Bernard T. Sander	6	Theodore W. Laetsch	2
Philip L. Coleman	6	Henry G. Schwartz	6	Mark A. Satterthwaite	1	Ernest H. Lam	2
E. W. Colglazier	3	Richard N. Silver	2	Samuel M. Savin	5	Richard B. Larson	7
Ronald L. Constable	7	Sean C. Solomon	6	Donald E. Schmidt	6	Allen D. Lee	5
Larry Cooper	5	Reiner L. Stenzel	4	Constantine G.	1	Jeffrey S. Leon	1
Rex A. Couture	1	Joseph P. Tymczyszyn	4	Sebastopoulos	2	Barry R. Lieberman	1
Michael A. Cunningham	2	Norman M. Uyeda	3	James M. Seybold	6	Kau-U Lu	3
L. C. Davis	5	Chiu-Sen Wang	6	Martin L. Smith	4	James A. Maiorana	2
Charles D. de Boer	4	Douglas C. White	2	James M. Soha	7	Willard G. Manning	1
John D. Ditzm	2	Thomas C. Williams	3	Robert G. Stokstad	2	Craig J. McAllister	2
Ronald S. Douglass	7	Larry D. Wittie	1	James H. Strauss	6	Earl G. Whitehead	2
James A. Doubt	4	Richard A. Wolf	7	Henry H. Suzukawa	4	Eric Wickstrom	5
Shaukat M. Feroz	3			Harold F. McFarlane	6	Karl R. Blasius	1
Leonard A. Fisher	1			Thomas R. McGethin	7	David R. Bauer	3
Jeffrey L. Friedberg	2			David B. McKay	3	W. S. Woodward	1
Douglas W. Gage	3			John W. McKenzie	2	William A. Wright	6
Ralph R. Gajewski	4			Ralph E. Miller	3	Charles P. Zeller	4
Stuart W. Galley	7			John D. Moore	2		
Robert Gordon	3			Paul D. Patent	6		
Jeffrey A. Gorman	7			Edward G. Trachman	5		
Alan W. Harris	6			David C. Van Essen	5		
William G. Herkstroeter	7			Phillip R. Pfaffman	1		
A. D. Holtorf	2			Steven E. Pollock	2		
Lincoln S. Hollister	1			Roger J. Radloff	3		
Albert V. Holm	6			Edward A. Rinderle	6		
Lane R. Johnson	3			Wally E. Rippel	3		
Eric M. Jones	5			James E. Rumbough	3		
Andrew J. Kampe	2			Thomas P. Santoro	3		
Susan E. Kayser	5			Warren L. McBride	2		
Stewart M. Kohler	5			Steven R. Boettcher	4		
Kenneth Kosai	6			Garth G. Brown	7		
Douglas C. Kubler	3			Thomas G. Burton	3		
1967				John M. Coyle	3		
Terry G. Allen	6			Daniel M. Curtis	4		
Robert C. Ashenfelter	7			Wu-Sun Chia	4		
Mary Baker	6			Ronald W. Davis	1		
Richard J. Williams	2			Peter W. Day	2		
Elton T. Young	4			John C. Dill	5		
Tse-Fou Zien	3			Jean-Pierre Dolait	5		
1968				Stephen T. Hall	5		
Richard W. Bild	3			Raymond K. Fisher	5		
Peter S. Bloomfield	6			Steven D. Flanagan	1		
George W. Bluman	2			Kenneth T. Fong	7		
Norman J. Schofield	7			Donald E. Joiner	4		
Jacques G. Bourque	2			Gene T. Fujimoto	6		
Allen J. Schwenk	3			Richard I. Giombra	4		
Christopher D. Henry	6			Seymour E. Goodman	3		
Cornelius O. Hogan	2			James E. Justiss	4		
Derek C. Hensley	3			James L. Gould	3		
Murray K. Hill	6			David A. Grano	3		
John W. Hockert	3			Jack D. Griffith	1		
David L. Huestis	4			David P. Hermeyer	7		
Lawrence A. Hunt	5			Daniel F. Higgins	5		
Martin H. Israel	6			William C. Hocker	1		
Douglas A. Keeley	7			Donald R. Hoffman	5		
Scott W. Jennings	6			Cornelius O. Hogan	2		
Navin Jerath	3			Derry P. Hornbuckle	3		
Frank R. Johnson	2			Stephen M. Horner	5		
Kenneth S. Kamm	5			Elwyn Y. Loh	5		
Larry L. Keshodel	5			James E. Malinak	4		
Jeffrey C. Hecht	5			Charles C. Matthews	6		
Christopher D. Henry	6			Steven A. Johnson	6		
Gary E. Horgan	2			Craig W. McCluskey	3		
Garth G. Brown	7			Edison R. McCord	6		
Thomas G. Burton	3			Frederick W. Klein	1		
John M. Coyle	3			Stephen D. Kraus	1		
Daniel M. Curtis	4			Pui Kuan	1		
Wu-Sun Chia	4			Jiun J. Lee	1		
Ronald W. Davis	1			Menachem Levanoni	4		
Peter W. Day	2			Stanley P. Levy	2		
John C. Dill	5			Michael J. Lindenfeld	4		
Jean-Pierre Dolait	5			Robert G. Lindgren	2		
Stephen T. Hall	5			Lesley B. Orr	4		
Raymond K. Fisher	5			Stanley M. Parsons	3		
Steven D. Flanagan	1			Raymond Pong	3		
Kenneth T. Fong	7			Donald L. Smith	5		
Donald E. Joiner	4			Harold M. Spinke	5		
Gene T. Fujimoto	6			Sankaran Srinivas	3		
Richard I. Giombra	4			James P. Simmons	3		
Seymour E. Goodman	3			John A. Sinema	2		
James E. Justiss	4			David L. Strange	5		
James L. Gould	3			John S. Sheffield	2		
David A. Grano	3			J. M. Shull	5		
Jack D. Griffith	1			David A. Sibley	5		
David P. Hermeyer	7			James P. Simmons	3		
Daniel F. Higgins	5			John A. Sinema	2		
William C. Hocker	1			Donald L. Strange	5		
Donald R. Hoffman	5			John S. Sheffield	2		
Cornelius O. Hogan	2			John E. Lupton	6		
Derry P. Hornbuckle	3			David M. Mantrom	5		
Stephen M. Horner	5			Thomas K. Matto	6		
Elwyn Y. Loh	5			Gary W. McLeod	7		
James E. Malinak	4			John R. Myers	5		
Charles C. Matthews	6			X. X. Newhall	6		
William A. McCluskey	3			Joseph E. Pendegast	3		
Edison R. McCord	6			Paul A. Rappolt	2		
Frederick W. Klein	1			Paul B. Re	1		
Stephen D. Kraus	1			Gary K. Reedy	2		
Pui Kuan	1			Phil J. Roberts	4		
Jiun J. Lee	1			Paul E. Scheffler	7		</

PERSONALS

1931

S. C. EASTMAN recently toured Europe, pursuing the less-traveled, small-town route through Iceland, the British Isles, France, southern Germany, Switzerland, and Austria. He invites alumni who want more information about touring the "undiscovered" parts of Europe to write him at 2000 N. Cypress, La Habra Hills, California 90631.

1938

JOHN L. MERRIAM retired in August 1978 from his position as professor of agricultural engineering at Cal Poly, San Luis Obispo, after teaching soil and water classes for twenty years. He also was an irrigation consultant in the Middle East, North Africa, the Far East, and Central America. He plans to continue with some consulting work and writing.

1939

EDWIN F. SULLIVAN and his wife, Jo, have returned from a year in Colombo, Sri Lanka, where Sullivan served as project implementation advisor to the Mahaweli Development Board. The Sullivans were joined by JOHN L. MERRIAM, BS '38, and his wife, Sally, during part of their stay.

1940

GEORGE R. BROWN writes, "After three and a half years of a very interesting tour of duty in Nigeria as manager of Texaco Overseas Petroleum Company, we are coming home to Texas to retire. It is somewhat ironic that, after working for 40 years in the production of oil, we may not find enough fuel available to permit our long planned traveling. While I was an undergraduate, Dr. Beckman said we would run out of oil, but I didn't think oil and I would retire at the same time."

JEROME KOHL, a nuclear engineering extension specialist at North Carolina State University has received the Outstanding Extension Service Award and the Alumni Outstanding Extension Award from NCSU. And, for the second year in a row, he has had a photograph accepted for the North Carolina Art Museum's annual artists' competition.

W. BERTRAM SCARBOROUGH, MS '41, is project manager for Standard Oil Co. of California in San Francisco. He and his wife, Beatrice, who live in Lafayette, California, celebrated their 37th wedding anniversary in June.

1942

HUGH A. BAIRD, MS '46, has been elected president of C F Braun & Co in Alhambra, California, succeeding CLIFFORD C. BURTON, BS '40. Baird joined Braun in 1946

and was elected vice president of engineering in 1971 and executive vice president in 1974.

1948

VICTOR SCHOCKEN, PhD, has been elected to the International Academy of Aviation and Space Medicine. Schocken, who received an MD from George Washington University in 1956, is the area medical director for American Airlines in Flushing, New York.

1955

SHANKAR LAL, PhD, was named director of the Indian Institute of Technology in Kharagpur in 1978. Lal was formerly a professor at the University of Roorkee and head of the department of mechanical engineering there.

1960

L. CAMERON MOSHER has left the geological research staff of Phillips Petroleum Company in Bartlesville, Oklahoma, and is now in business for himself in Pleasant Grove, Utah.

1965

ROGER L. HOOKE, PhD, associate professor of geology at the University of Minnesota, writes, "Heading for Baffin Island in May for eleventh field season on the Barnes Ice Cap studying ice rheology. Have also been doing some diving in the Bahamas. Fun."

LAWRENCE K. OLIVER sends the following from Sepulveda, California: "I've just recently [May] returned from six months in Japan, where I was setting up a joint venture laboratory for Bio-Science Enterprises. Japan is an interesting country, but coffee at \$2/cup, ground beef at \$6.50/lb and movies at \$8/person demands a rather drastic change in life style for any but the most wealthy westerner. I'm glad to be back in Los Angeles—gas shortage and all (\$2.40/gal in Tokyo)."

1969

SEBASTIEN M. CANDEL, MS, is professor of aeronautics and fluid mechanics at Ecole Centrale des Artes et Manufactures, near Paris, where he is heading aeronautical and space studies. His second son, Manuel, was born on May 14, 1979.

1970

ARDEN L. STEINBACH is halfway through a two-year appointment as a research fellow in electron microscopy at the Fritz Haber Institut für Elektronen Mikroskopie in Berlin. His wife, Suzanne, is a pediatrician at the U.S. Army hospital there.

1971

MICHAEL D. TEENER, who worked for Technology Service Corporation for seven and a half years, has joined California Computer

Products, Inc., in Santa Ana, California, as a principal engineer. He writes, "No, I don't know what a 'principal engineer' is. What I do is design the controllers for a new product line. Incidentally, my little part of Calcomp is

just like TSC in that many of the technical staff are Techers . . . Only in this case, *everyone* is a Tech, except for the engineering manager . . . and he was my roommate just after I moved away from Pasadena."

OBITUARIES

1902

KIRK W. DYER on June 28 at Cromwell Crest, Connecticut. Dyer, who at 97 was Caltech's oldest living alumnus, began his business career as a chemist and chemical engineer in California and served as a city treasurer and tax collector for Pasadena. In 1910 he became the secretary-treasurer of the Frisbie Motor Company of Middletown, Connecticut, assuming the post of president in 1920. From 1934 until his retirement in 1954, he was associated with the A. N. Pierson Company of Cromwell, Connecticut. He held many civic posts during this time, including serving as a representative to the State Legislature. As a student at Caltech, Dyer organized the Institute's first band, which was also the first marching band to play in the Tournament of Roses. He attended his 70th reunion at Caltech in 1972. He is survived by two daughters, Esther Eckersley and Margaret Norris; four granddaughters, and ten great-grandchildren.

1924

CARLTON H. ECKERMAN on June 20 in Arcadia, California. Eckermann was an employee of Pacific Telephone Co. for 43 years, serving as executive planning engineer before his 1966 retirement. Active in community activities, he was recognized in 1954 for his service to the San Gabriel Council of Boy Scouts through scouting's highest honor, the Silver

Beaver award. Eckermann was a member of one of the pioneer families of Covina, California; two of the town's streets are named Carlton and Eckermann. He is survived by his wife, E. Marie, a son, Gerald, a daughter, Judith Bellows, two sisters, and five grandchildren.

1937

DONALD P. GRAUL, MS, on April 3. Graul, a retired Air Force major general, is survived by his wife, who lives in Albuquerque, New Mexico.

1950

JOHN P. MOFFAT, JR., on June 2 in Los Altos, California. A founder and chairman of the board of ILC Technology of Sunnyvale, California, he was a leading authority on arc lamps for lasers. Survivors include his wife, Mary Jane, and two sons, Michael and Peter.

1975

JOHN S. STEMPLE on July 9, 1978, in an automobile accident near Gorman, California. Stemple, from Falls Church, Virginia, was a PhD candidate in nuclear physics. Contributions may be sent to the Falls Church Presbyterian Church for the Jack Stemple Caltech Memorial Scholarship, 225 East Broad St., Falls Church, Virginia, 22046.

ALUMNI ACTIVITIES

October 9

Houston chapter meeting, the Houston Oaks Hotel, Westheimer Road at Post Oak in Houston. Social hour, 6 p.m., dinner, 7 p.m. Ned Munger, professor of geography, just back from a trip to Africa, will discuss, "What's Really Happening in Africa?" Price: \$15 per person.

October 10

Dallas/Fort Worth chapter meeting,

Lowe's Anatole Hotel, 2201 Stemmons Freeway, Dallas. Social hour, 6 p.m., dinner, 7 p.m. Ned Munger will speak on "What's Really Happening in Africa?" Price: \$15 per person.

October 18

Fortieth reunion celebration for Caltech's Industrial Relations Center. All alumni who have taken courses from the IRC are invited to attend.

William Beranek	3	Gerald A. Navratil	2	John P. Cannady	4	Shelia M. Tuler	1	John F. Land	3	Raymond R. Cosner	4	John J. Barnard	2	Erna W. Wong	1
Prem Bhatia	6	Philip M. Neches	6	Wai K. Cheng	4	Lee W. Vibber	2	Henry H. Laxen	2	Jeanne M. Courval	1	Jacqueline O. Berg	3	Jim L. Wong	2
Russell T. Bock	5	Ting S. Ng	1	Jean-Yves Chevalier	4	Janet C. Wainwright	4	Roland R. Lee	4	Edward A. Cuellar	3	Dennis D. Bicker	1	Steven J. Wright	2
James L. Bonomo	6	Lawrence S. Niren	1	Ming T. Chong	3	Steven J. Warling	5	Tsu-Wei F. Lee	2	Deno P. Dialynas	2	Duane K. Boman	1		
David F. Bremmer	3	Laurence J. November	2	Thomas C. Clarke	5	Thomas V. Weaver	5	Alexander Lidow	2	Daniel M. Dobkin	2	Douglas A. Bourne	1		
Lee D. Britton	2	Masayuki Ono	4	Andrew F. Cockburn	3	Andrew B. White	2	Frederick M. Mann	4	Marc D. Donner	2	Daniel T. Brown	2	1978	
John L. Brown	3	Alexander D. Petruncola	5	Richard E. Cofield	2	Robert D. Wieting	5	Pamela S. McMurry	2	David J. Ekpenyong	2	Nancy M. Childs	2	Gary A. Anwyl	1
David C. Bryant	6	Christopher J. Platt	2	Mark W. Elgroth	2	Brian S. Yandell	2	Ted Z. Michon	3	K. J. Erikson	3	Stephen M. Comens	2	Lee C. Aydelotte	1
Felix A. Carroll	5	Gary W. Pope	1	Louis D. Fielder	5	Ross M. Miller	2	Ross M. Miller	2	David Eskinazi	1	Deborah A. Cowan	1	Michael J. Aziz	1
Louise T. Chow	2	Joseph C. Rayhawk	3	Gertrude Fila	4	Richard N. Mitchell	4	Richard N. Mitchell	4	Margaret M. Evans	2	Kilian Dill	3	Ray H. Bartlett	2
Edward N. Colonna	6	Daniel G. Reichel	6	Robert B. Fisher	5	Carol L. Moore	3	Carol L. Moore	3	Harry O. Finklea	3	Peter K. Edberg	2	Steven V. Beckwith	1
James E. Craig	2	Bruce A. Reznick	6	Lawrence C. Ford	5	Oren A. Mosher	2	Oren A. Mosher	2	Wayne M. Flicker	2	John B. Ernest	2	William I. Behen	1
Cliff I. Davidson	1	George C. Rinker	1	Jon E. Ahlquist	4	David L. Nelson	4	David L. Nelson	4	Wolfgang O. Franzen	3	Thomas J. Estes	2	David M. Cannon	1
Geoffrey F. Davies	2	John B. Rose	4	Steven N. Frank	6	William F. O'Meara	4	William F. O'Meara	4	James M. Fujitaki	3	Jeffrey A. Holmes	3	David Faulkner	2
Peggy L. Dyer	1	Theodore L. Rose	3	John M. Garth	4	Mary B. Ogilvie	2	Mary B. Ogilvie	2	Paul H. Gailus	3	John L. Horn	3	Johnny K. Chan	1
John J. Dykla	2	Gary S. Rubenstein	6	John M. Garth	4	Glenn S. Orton	4	Glenn S. Orton	4	Glenn A. Galau	2	Richard K. Feldman	2	Michael G. Chong	1
Dean B. Edwards	3	Bruce Rugar	1	Lawrence J. Grubka	3	David W. Palmer	2	David W. Palmer	2	Donald W. Miklovic	2	Douglas A. Foutch	2	Jonathan H. Elas	1
Robert L. Elgin	5	Paul S. Schluter	4	Debra D. Hall	1	Lloyd H. Smith	4	Lloyd H. Smith	4	Philip A. Naeker	2	Richard Laura	2	Stephen E. Kellogg	1
Walter B. Farrell	3	Bruce R. Seaman	1	John T. Meadow	5	Anthony A. Stark	4	Anthony A. Stark	4	Thomas E. Orlowski	1	Peter W. Lew	2	Brian K. Lamb	1
William R. Frensky	6	Alex Y. Seita	1	David J. Larwood	4	Thomas Stevens	3	Thomas Stevens	3	William M. Owen	3	Robert R. Linderman	2	Kerry A. Laprade	1
Robert J. Geller	5	Arthur W. Selly	4	David L. Lee	2	Bruce R. Tasker	3	Bruce R. Tasker	3	Robert S. Pfeiffer	1	John H. Loo	2	Margaret A. Marshall	1
Brian C. Gibson	2	Richard L. Short	3	James M. Loddengaard	2	Julius Uradnitscheck	4	Julius Uradnitscheck	4	Monty Krieger	2	Jewell C. Maxwell	2	Antonio A. Martinez	1
Edward C. Graf	3	Frank S. Shuri	4	Rhonda L. MacDonald	5	Eric N. Vella	1	Eric N. Vella	1	Richard E. Purucker	2	Bruce A. McLaughlin	1	Thomas J. McDonnell	2
Leonard J. Gray	3	Stephen K. Skedziewski	5	Douglas B. McElroy	2	Diane C. Vogel	2	Diane C. Vogel	2	Michael V. Warlick	2	Brian M. Murata	1	Kevin J. Meaney	1
Thomas R. Greenlee	1	Michael E. Stoll	5	John E. Dutra	3	Willard R. Wadt	5	Willard R. Wadt	5	John S. Winterle	3	Bun D. Nguyen	2	Jay D. Murray	1
Thomas A. Hecht	2	John R. Stonesifer	4	David J. Larwood	4	Helen E. Wheeck	4	Helen E. Wheeck	4	Richard M. Pietrasz	1	Richard M. Pietrasz	1	Joel R. Okazaki	1
Norman L. Helgeson	3	Brian Storrie	5	David J. Larwood	4	Kenneth Wiener	2	Kenneth Wiener	2	Winston R. Shu	3	Edward C. Rea	1	Robert K. Ouzounian	1
Bruce M. Herman	1	Richard F. Sunseri	4	David J. Larwood	4	David R. Witwer	3	David R. Witwer	3	Barry E. Turnrose	1	Audrey S. Roe	2	Pamela J. Pearce	1
David E. Holland															

Jessica Tuchman Mathews

Needed: More scientists in Washington

by Winifred Veronda

Jessica Tuchman Mathews's quarters in the Old Executive Office Building in Washington, D.C., overlooked the west wing of the White House, center of executive policy-making for the nation. Her vantage point was in some ways symbolic of her responsibilities: Her job as head of the Office of Global Issues of the National Security Council gave her an extraordinary overview of the foreign affairs of the United States.

In July she began to apply that overview in a new role. She left the National Security Council to join the editorial board of the Washington Post, where she will write about science and resource issues. She was one of at least seven National Security Council aides who recently decided to leave. *Science* magazine suggested the exhausting pace of the work and "mid-term blues" as reasons for their exodus.

Mathews, 33, was one of three or four women in key foreign policy roles in the Carter administration. She reported to Zbigniew Brzezinski, assistant to President Carter for national security affairs, and she dealt with issues ranging from arms sales and nuclear waste management to the international environment and human rights.

She presented papers on such topics as "Technology and the Diffusion of Power," "Human Rights and U.S. Foreign Policy," and "Non-Proliferation: Successes and Setbacks." The nuclear power plant crisis at Three Mile Island had her sitting up nights for a week, assembling facts, figures, and projections for the President.

All this is a far cry from the career in a scientific research laboratory that she envisioned when she was a Caltech student (PhD '74), but neither those dreams nor today's realities are particularly surprising. Mathews grew up in a New York City family with interests well balanced between the humanities and the sciences and with complete acceptance of the idea of both parents having satisfying careers. Her mother, Barbara Tuchman, is the two-time Pulitzer Prize-winning author of such historical works as *A Distant Mirror* and *The Guns of August*, and her father, Lester Tuchman, is a distinguished physician.

Choosing Caltech

Mathews decided in high school to become a scientist. She made up her mind to go on to graduate school when she was a student at Radcliffe, choosing Caltech for her work in biochemistry and biophysics because of its reputation and "because the East was all I knew, and I liked the idea of going to school in another part of the country."

At the Institute she conducted her research on development in the cellular slime mold, *Dictyostelium discoideum*, completing her work under the supervision of Caltech biologist James Bonner.

"I loved Caltech," she says. "My years there were wonderful, both educationally and personally. There

was so much science to soak up. Caltech's small size is a tremendous advantage, too, because you get to know almost everyone in your division. You learn about their research, and you gain a much broader view of your field than you would at a bigger institution."

As she was completing her PhD, Mathews thought about applying for a postdoctoral appointment that might eventually lead to an academic career. "But first," she says, "I decided to give myself a year in Washington."

Interested in the world of politics ever since she worked for eight months in the 1967-68 McCarthy-for-President campaign, she (and 89 other young people) applied for a one-year fellowship in Congress offered by the American Association for the Advancement of Science. Mathews got the nod. She chose to work on the staff of Congressman Morris K. Udall, then chairman of the Subcommittee on Energy and the Environment of the House Interior Committee and, after the fellowship terminated, she continued as a professional staff member of the committee. As one of only a dozen or so scientists in staff positions on the Hill, she worked on legislation ranging from national energy conservation to nuclear waste disposal and breeder reactor authorization.

Mathews's absence from academia was to have lasted only a year or so, but she postponed her return when Udall decided to run for president and asked her to become his campaign director for issues and research. She accepted ("He is a very impressive man and a real pleasure to work for") and soon found herself immersed in the job "almost 20 hours a day."



Jessica Tuchman Mathews as a Caltech graduate student.

The campaign turned out to be "a tremendous learning experience. By the time it ended, we had prepared about 3,000 pages of position papers on everything from tax reform to energy policy to farm price supports — and I wrote about 90 percent of those pages. It was the best general education I could have had."

What gave Mathews an education also gave her visibility, and her performance did not go unnoticed among political observers. For her work with Udall, the Capitol Hill Women's Political Caucus chose her as the most influential woman in the

1976 presidential campaign. By that time, the year she had given herself in Washington had stretched to almost three, but when she was offered a position with the National Security Council, she couldn't refuse. She stepped into it two weeks before President Carter's inauguration — and her transition from academic science to government policy was complete.

Was the bridge difficult to cross? "No. Working on the Hill before the campaign, I learned that I had something of a natural feeling for policy questions," she says. "But I do miss science, and I know that the bridge the other way — the bridge back to research — would be much, much harder to cross. Knowledge in science builds up so fast that unless you keep up with it, you're soon obsolete. Working on the Udall campaign was a wonderful experience, one I wouldn't have missed, but when it was over, it was almost already too late to go back."

But despite a few lingering regrets, Mathews has been well satisfied with the way her career has evolved. "Being on the National Security Council staff is being in one of the most exciting places in Washington," she says. "Because its staff members sit outside the governmental bureaucracy, they have a unique perspective on all the agencies — and especially on the executive branch and how it functions. One develops a special feeling for the magnitude of the President's job and for the problems he faces."

Science and Government

Mathews was only 31 when she started to work in the Old Executive Office Building. Brzezinski's idea in creating the Office of Global Issues was to find a resting place for all issues that could not be solved on a regional basis. With one colleague, Mathews found herself in charge of preparing national policy on nuclear nonproliferation; chemical, biological, and radiological warfare; human rights; international environment; international organizations; and Africa.

In all this, she found her scientific training useful, and she would like to see more technically trained people in government. When she and five other young people came to Congress as science fellows in 1973, "there were about 10,000 professional staff members on the Hill, and we six fellows just about doubled the percentage who were scientists. The proportion of scientists in Congress has gone up since then, but it's still very small, and the need for them is tremendous. Technical issues are becoming more important every day, so science has an enormous impact on both domestic and foreign policy. But there are still many fields of government where scientists play no role at all."

"The traditional line of thinking has been that scientists are too specialized in their training and unable to work in ways that are helpful to a congressman, and to some degree this is true. More and more, legislators are adding scientists to

their staffs, but the process of increasing their influence in government is a slow one."

For those scientists who cross the bridge into government policy making, Mathews says the most essential — and probably the most difficult — thing to learn is "to make decisions in the face of uncertainty. The amount of uncertainty involved in a research project is quantifiable, and you work to eliminate it. But politicians constantly have to make final decisions in the face of large uncertainties. Many scientists find this foreign and distasteful, and those who can't adjust don't cope well in Washington."

Mathews represented two minorities in government policy — scientists as well as women. She was certainly one of the highest ranking women in foreign policy in Washington, although she considers exaggerated a newspaper article terming her "one of the most important women in the Carter administration." She does appreciate the fact that she was well accepted in her role. "People here are quite willing to expand their attitudes about you in proportion to the quality of your achievements," she says.

Mathews left the National Security Council because she wanted to get into resource management and materials policy. "I think these are really key issues," she said. "Another reason is that I wanted to deal with issues in depth. My personal view is that no one in government contemplates — it just isn't possible. The time to do contemplative thinking is outside government."

In spite of the long hours she has devoted to her work — sometimes 80 hours a week when she first joined the National Security Council — she finds time for a full personal life, including marriage early in 1978 to Colin D. Mathews, an assistant general counsel for legislation in the Department of Energy. She met him when she was a staff member in

"Politicians constantly have to make decisions in the face of large uncertainties. Many scientists find this distasteful, and those who can't adjust don't cope well in Washington."

Congress, and the relationship blossomed as they both worked for the Udall campaign.

The Mathews live in a home in the northwest section of Washington. When she's relaxing, she likes to work in the garden there, and she also likes to ski and jog.

On the Caltech campus, Jessica Tuchman Mathews is remembered as intelligent and hard working as well as attractive, vivacious, and personable. "It was obvious that she had a bright future," says James Bonner as he recalls her as a graduate student. The focus of that future may have changed, but it's certainly no less bright. After all, politicians and newspapers in Washington are as able as scientists to appreciate a good thing when they find it.

Class of '83: Diversity is the spice

by Phyllis Brewster

Here they are again — 217 young men and women entering the classrooms of Caltech for the first time — this year bearing the distinctive label of The Class of 1983.

What makes one Caltech freshman class differ from the last? Statistics vary, of course, but only slightly. SAT scores and academic records reach the same high-level marks; dedication to science remains relatively constant. Geographic distribution doesn't change much — this year 45 percent of the class is from California, 13 students are U.S. citizens born overseas, 10 are foreign students, and the rest are from 33 states in the U.S.

The number of women increases slightly each year — up from 32 to 34 this year, as do the number of minorities — eight Hispanic, eight blacks, and two American Indians in the freshman class. And the distribution between science and engineering hasn't changed significantly from the freshman class of 1978 — 66 percent say they will opt for science, 32 percent for engineering, and 2 percent are undecided. (In 1977, however, 68 percent indicated science, 17 percent engineering, and 15 percent were undecided.)

More important differences are in the individuals — their personalities, their passions, their backgrounds, their adventures, and their expectations.

Because it would be impossible in these pages to sketch each of the 217 entering freshmen, we have chosen to introduce you to a random few — examples of the diversity of interests and energies and enthusiasms throughout the entire class.

John Garvey came to campus with an extraordinary knowledge of cardio-pulmonary resuscitation operations. To qualify for his Eagle Scout award, Garvey cooperated with the local fire department to set up a community education program in CPR. As a result of the project, 3 percent of the people in Bonita (Cal.) can now do CPR.

Beverly Robertson is entering Caltech a year later than she had intended. After high school graduation, Beverly was invited to go to the Yukon to help set up a daily newspaper in Whitehorse. (All of Beverly's letters to Caltech were printed in offset.)

Before he came to Caltech, Anthony Harjo was attending three schools — two of them full time — and working a 40-hour week as a relay system assembler. Anthony had been disappointed in his high school classes, but in his junior year he discovered, in the community college system, the excitement and challenge he had been looking for. While he was required to continue his regular high school program, he enrolled in one college full time, took several classes at another, and supported himself financially.

Rusty (Russell) Schweikart came to Caltech without his twin, Randy — the first time they have been separated in their 18 years. Randy is enrolled at MIT because the brothers decided a coast-to-coast split would help them move toward more separate lives.

In her letter of acceptance to Caltech, Sonia Balcer wrote that she would be late for registration. The reason: she would be on Pitcairn Island. For the past three years Sonia has been one of the project leaders on a team of high school students who designed and built the world's largest solar-thermal-electric generator of its particular type, in the parking lot of JPL, under the guidance of free-lance inventor Frank Broyles. The group is planning to deliver the 25-ton Sunfire — via a U.S. Navy ship — to Pitcairn

and to set it up for the islanders. (Recently Caltech learned that Sonia will defer her Caltech entrance until 1980, because the Pitcairn adventure will extend into January.)

Before he came to Caltech, David Durham was designing, building, and testing his own aircraft.

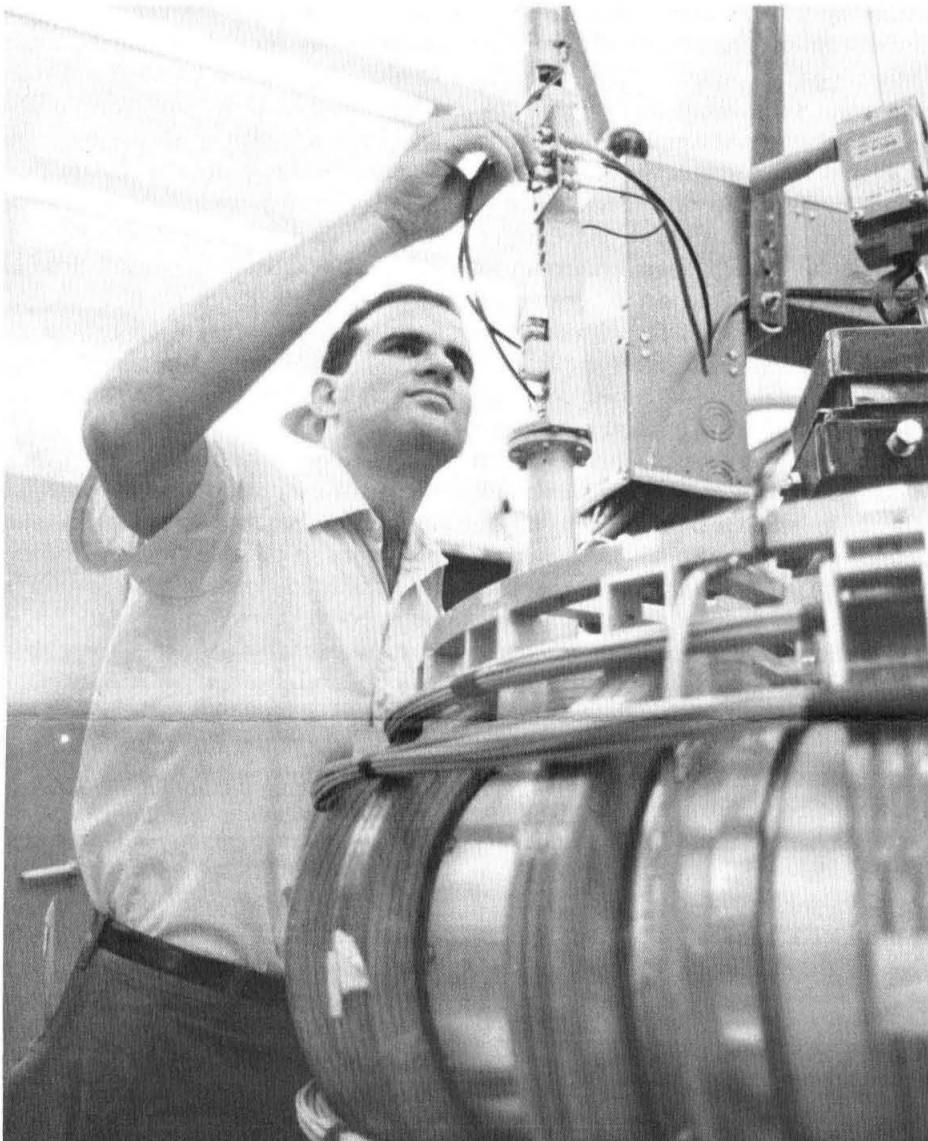
Wendy Rasmussen, who plans to be an aerospace engineer, took her private pilot's license test last January when she was 17.

Charles Lindsey, of Merritt Island, Florida, is attending Caltech for the second time. As a fifth grader,

Charles learned about carbon-14 dating from Dr. Gerald Wasserburg under a special elementary school Talented Students Program.

And so it goes, one provocative interest after another, as well as a wide variety of more common ones. Chess, tennis, cycling — track, jogging, backpacking — science fiction, war games, music — these are some of the pastimes and pursuits of the Class of 1983. And all in addition to their top scholastic achievements and devotion to science.

A boost for fusion research



Paul Bellan gives the finishing touches to his tokamak — a type of device viewed as the most likely candidate to become the first commercial energy-producing fusion reactor. Tokamaks use intense magnetic fields to contain superhot plasma gases. The goal is to hold the plasmas long enough and at high enough temperatures and densities to allow fusion of the plasma particles to occur, releasing energy in the process. Bellan's tokamak is an experimental one that should make substantial contributions to fusion research by yielding information about how plasmas behave. He is an assistant professor of applied physics.

Seminar Day in San Francisco

Alumni who live in the Bay Area and could not attend Seminar Day on the Caltech campus this spring will have an opportunity to hear about some of the current research on campus by attending the second annual Mini Seminar Day on Saturday, October 20, sponsored by the San Francisco alumni chapter.

Africanist Ned Munger, professor of geography, will be the luncheon speaker at the one-day program in the Dunfey Hotel, 1770 South Amphlett Boulevard (at the intersection of the Bayshore Freeway and Highway 92) in Burlingame.

Events will begin with coffee at 9 a.m. in the Lancelot Room and an opening seminar at 9:30. A reception from 3:30 to 5 p.m. for faculty, alumni, and their guests will conclude activities.

Describing their research will be: Jenijoy La Belle, associate professor of English, "Dark Visions of the Fallen World: William Blake's Color Printed Drawings of 1795"; Edward C. Stone, professor of physics, "Voyager 1 at Jupiter: An Encounter with a Giant"; Karen C. McNally, senior research fellow in geophysics, "Prophecy and Fact: The Oaxaca, Mexico, Earthquake of November 29, 1978"; and Fred E. C. Culick, professor of applied physics and jet propulsion, "Learning to Fly in 1903 — The Origins of the First Airplane." Munger will speak at noon on "What's Really Happening in Africa."

Cost of the program, including coffee, lunch, and reception, is \$19.50 per person. Reservations can be made through the Alumni Office, it has been announced.

New football coach on board

Robert B. Davies has been named head football and wrestling coach at Caltech. Davies comes to the Institute from Springfield College in Massachusetts where, as a graduate assistant, he coached varsity football and wrestling. He holds an MEd in guidance and physical education from Springfield College and a BS in health and physical education from Rutgers University where he played varsity football for four years and participated in varsity wrestling his senior year.

Immediately after graduating from Rutgers, Davies coached football and wrestling and taught physical education at Cresskill High School in New Jersey. After two years there he went on to graduate school and coaching at Springfield.

Grand Canyon hike for alumni

Caltech geologists Eugene Shoemaker and Leon Silver will be the guides next April 17-21 on a hike to the bottom of the Grand Canyon and back.

Forty participants, including alumni and guests, will leave Pasadena for the canyon by bus early on April 17, accompanied by their geologist guides. En route, Silver and Shoemaker will describe the geology of the surrounding terrain. The group will spend the evening on the canyon's south rim at the El Tovar Hotel. There, after a social hour and dinner, Shoemaker and Silver will show slides about the canyon's geology and history.

Next morning, the alumni will hike down the Kaibab Trail to Phantom Ranch and spend the night. The following day will feature a hike around the bottom of the canyon (with plenty of opportunities to stop along the trail for geological discussion) and a second night at Phantom Ranch. Then the group will hike up Bright Angel Trail for dinner and a final night at El Tovar before returning to Pasadena by bus the next morning.

Five mules will accompany the caravan into the canyon, in case anyone needs an emergency ride, and to help carry supplies. Reservations can be made through the Alumni Association on a first-come basis at approximately \$425 per person.