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CALTECH NEWS

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Alumni laud Beckman at class reunion

Every year when the time has come to choose candidates for Distinguished Alumni Awards, one name has kept cropping up. But that person — distinguished though he is — can't be given this particular award. He is ineligible under the rules of the selection committee because he is a Life Trustee.

So this year, on the 50th anniversary of the year Arnold Beckman received his PhD from the Institute, the Caltech Alumni Association Board of Directors paid special tribute to this outstanding alumnus and former faculty member, trustee, and chairman of the Board of Trustees. At the 1928 class reunion, Beckman, now chairman emeritus of the Board of Trustees, was presented with a plaque acknowledging his long years of service and devotion.

John R. Fee, BS '51, 1978-79 president of the Alumni Association, read aloud the tribute to the man who has played such an essential role in Caltech's history over the past 50 years:

WHEREAS, Arnold O. Beckman has won an enduring place in the annals of the Institute as a graduate student, as a faculty member, as a trustee, as chairman of the Board of Trustees, and as chairman emeritus of the Board of Trustees, and

WHEREAS, his charitable spirit as benefactor, as shown by the campus buildings bearing his name and that of his wife, Mabel, has earned the grateful recognition of the Institute; and

WHEREAS, he has distinguished himself in the business world as

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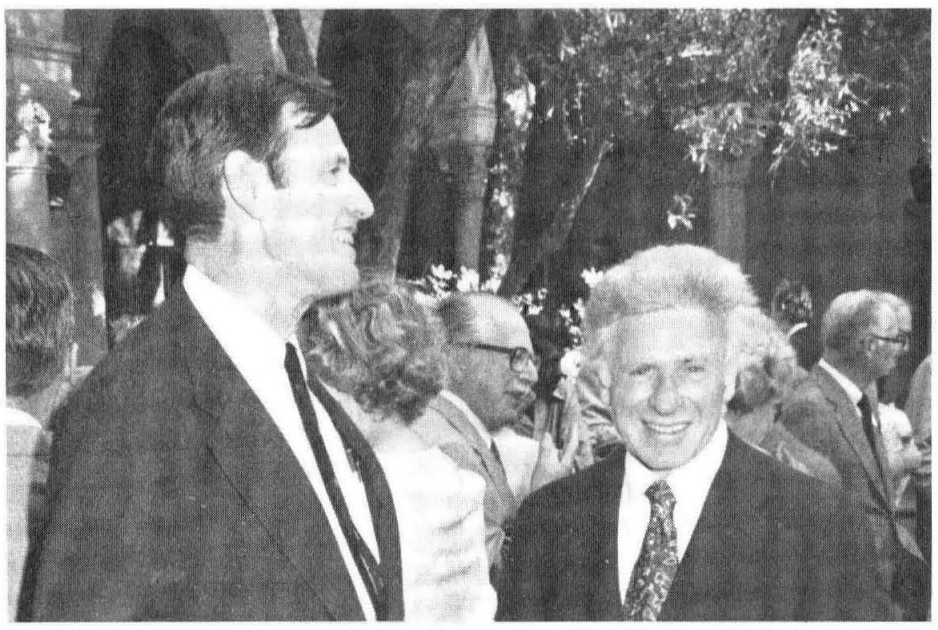

Vice President and Provost Robert F. Christy with Caltech President Marvin L. Goldberger at a faculty reception in the Goldbergers' honor.

Marvin Goldberger

Caltech's new president moves into Millikan

Dr. and Mrs. Marvin L. Goldberger, Caltech's new president and his lady, moved into the Hill Avenue house on June 28. Subsequently Goldberger settled in third-floor Millikan, taking up his duties in the presidential office with its view overlooking Pasadena, Altadena, and the foothills.

The Goldbergers have visited the Institute several times since his March appointment as president. The big kitchen in the presidential house has been of special interest to them because they both enjoy cooking. They attended parties in their honor in May — a faculty reception and a dinner party at the home of R. Stanton Avery, chairman of the Board of Trustees, and Mrs. Avery.

As part of his duties at the Institute, Goldberger hopes to be able to teach undergraduates. He says, "The first year I wouldn't even try it, but I haven't given up the idea if it's technically possible. Whether I can meet a class regularly or whether it will have to be something rather specialized, I still want to do it."

All Caltech alumni and members of The Associates will receive personal invitations to Goldberger's inauguration on October 27. Members of the Faculty Convocations Committee are planning the event, scheduled for 10:30 a.m. in the Court of Man. Marching in the inaugural procession will be trustees, faculty members, distinguished alumni, and representatives from learned societies and universities throughout the country.

New endowed chair honors Simon Ramo

Caltech has received gifts and pledges of $1 million to endow the Simon Ramo Professorship of Engineering, President Marvin L. Goldberger and Dr. R. F. Mettler, chairman of TRW Inc., have jointly announced.

The new professorship will honor Simon Ramo, PhD '36, who retired in June as vice chairman of the Board of Directors and chairman of the Executive Committee of TRW Inc. He continues as a member of TRW's Board of Directors and chairman of TRW's Science and Technology Committee.

Ramo, who received his PhD magna cum laude from Caltech at age 23, is a member of the Institute's Board of Trustees, chairman of the Visiting Committee of the Division of Engineering and Applied Science, and a Life Member of The Associates. A research associate at Caltech from 1946 to 1974, he became a visiting associate in engineering in 1974 and a visiting professor of management science in 1977.

Simon Ramo

Endowment of the professorship was made possible by gifts from Ramo and the TRW Foundation. A distinguished engineer will soon be named as the first Ramo Professor, Goldberger said.

"Dr. Ramo has given abundantly to Caltech of his intellectual and material resources," Dr. Goldberger said. "His dedication to the caliber of our research, concern for our students and the quality of their education, and keen intellectual abilities have made him one of our most outstanding and valued leaders. We are particularly pleased that the Ramo Professorship will continue to honor him and his contributions through the work of the person who holds the Ramo chair."

Among past gifts of Dr. and Mrs. Ramo to Caltech were funds for Ramo Auditorium. The auditorium

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Dr. and Mrs. Arnold O. Beckman and John R. Fee, Alumni Association president, display a plaque, presented to Beckman on behalf of the Caltech Alumni Association Board of Directors, and honoring him for his years of service.

Hinrichs Award

Albert L. (Bert) Wells, Jr., BS, MS '78, was awarded the 1978 Frederic W. Hinrichs, Jr., Memorial Award for outstanding services to the Institute. The award, including a certificate and $500, was announced at graduation ceremonies. Wells was selected by the undergraduate deans on the basis of leadership in student government, musical ability, and academic excellence.

Wells was president of ASCIT in 1977, and before that was director for academic affairs. In the latter position he was instrumental in establishing ASCIT's Awards for Excellence in Teaching.

He graduated with a 4.0 average and won several mathematics awards, including the Eric Temple Bell Undergraduate Mathematics Research Prize in 1976 and the Morgan Ward Prize in 1975. He was president of the Caltech Mathematics Club.

At commencement:

Delbrück on time and the limits of science

Time and its various meanings, now and in the past — for the scientist, the historian, and the average human being — were the themes of Max Delbrück's commencement address, "The Arrow of Time — Beginning and End." Nobel Laureate Delbrück is Caltech's Board of Trustees Professor of Biology, Emeritus, and has been a member of its faculty for 41 years.

Science is limited in the way it deals with time and thus in its ability to satisfy all human needs and values, Delbrück said as he stressed the importance of a balance between the sciences and the liberal arts.

He noted that science deals with time "simply as a fourth dimension along which you move forward or backward at will." This view leaves no room for poetry and myth, for paradox and ambiguity, and for qualitative human experience — or for tolerance of spiritual beliefs from earlier ages that have constituted powerful forces in human history.

"The question is not what science can do for us," said Delbrück, "because it can do a lot. But the more important question is, 'What can science *not* do for us?'

"Science orders our external world in a marvelously coherent way. But by the nature of its methods, the aims of science are always partial methods. For example, if science can't extrapolate the state of the universe backward beyond the Big Bang, then it refuses to extrapolate backward, or it does so in only the most tentative way.

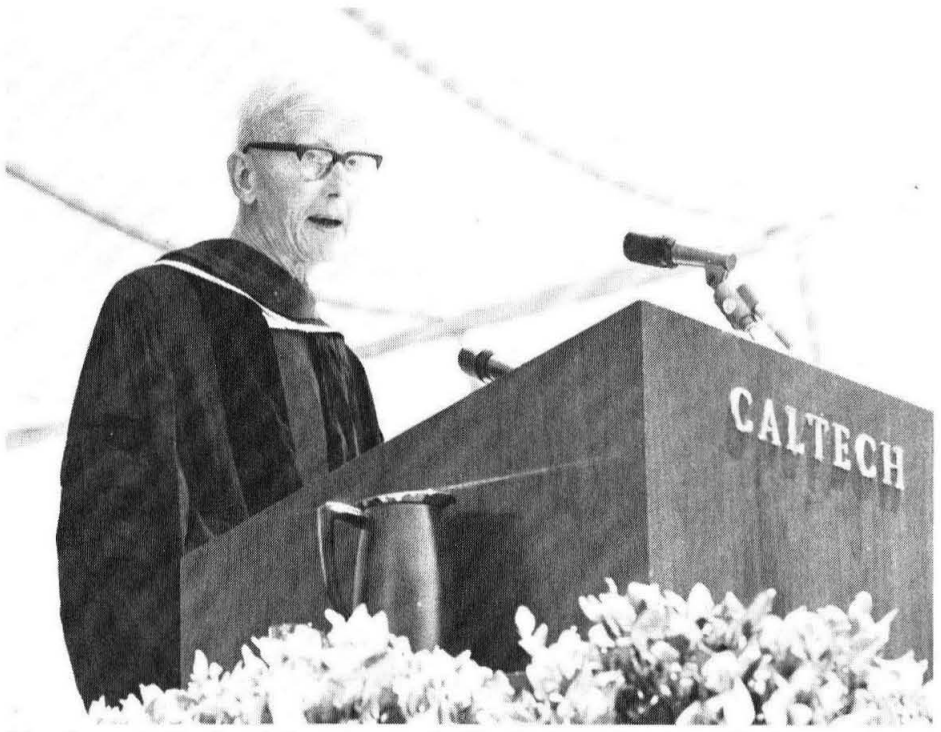
Cognition filters reality

"Moreover, science has recognized that the objective world isn't that objective. The observer and the observed cohere in a bizarre way that limits the clean separation between actor and observer. And biology has taught us that we the observers are products of our evolution and that our cognition filters reality in a massive way."

This acknowledgement of the limits of science is relatively new, Delbrück said. He noted that "many intellectuals of Robert A. Millikan's generation believed that science would outpace and largely displace all other intellectual and spiritual endeavors, as it has done.

"They also believed it would lead us to a better world, and most of them believed that it would displace religion by the end of the century. But we know that our age is not a golden age and that scientific culture has in no way eliminated the strength and intensity of religious needs. Indeed, we can take it for granted that science is intrinsically incapable of coping with the recurrent questions of death, love, moral decision, greed, anger, and aggression. These are the forces that determine man's values and shape man's destiny.

"The essence of Caltech has been to be excellent *and* small — small enough to avoid in large measure a schism between the two cultures [humanistic and scientific] upon which education was based when universities first came into being in the Middle Ages. The great Court of Man, where we hold this ceremony, flanked by buildings of behavioral biology on one side and the humanities and social sciences on the other, is the symbol for the direction in which Caltech ought to continue its greatest thrust. Let us hope," he concluded, "that the momentum will not get lost."



Education must strive for a balance between the liberal arts and the sciences if it is to meet human needs adequately, Nobel Laureate Max Delbrück tells Caltech graduates.

As he finished his talk, several members of the Caltech faculty, seated on the podium behind him, hoisted a huge sign bearing the words ***"MAXIMUS EST,"*** Latin for "He is the greatest."

Chairman of the Board of Trustees R. Stanton Avery welcomed the guests to Caltech's 84th Commencement and introduced Delbrück. Acting President Robert F. Christy conferred a total of 426 degrees: 168 BS, 138 MS, 4 Engineer, and 116 PhD degrees. Of these students, 53 had received previous degrees from the Institute. Eleven seniors received both BS and MS degrees. Christy noted that 81, or 48 percent, of the seniors were graduating with honors (B+ or better).

Among the undergraduates, 83 majored in engineering, 81 in science, 3 in the humanities, and 1 in independent studies. Two of those receiving degrees in engineering or science had a second major in the humanities or social sciences and 9 majored in two fields of science or engineering.

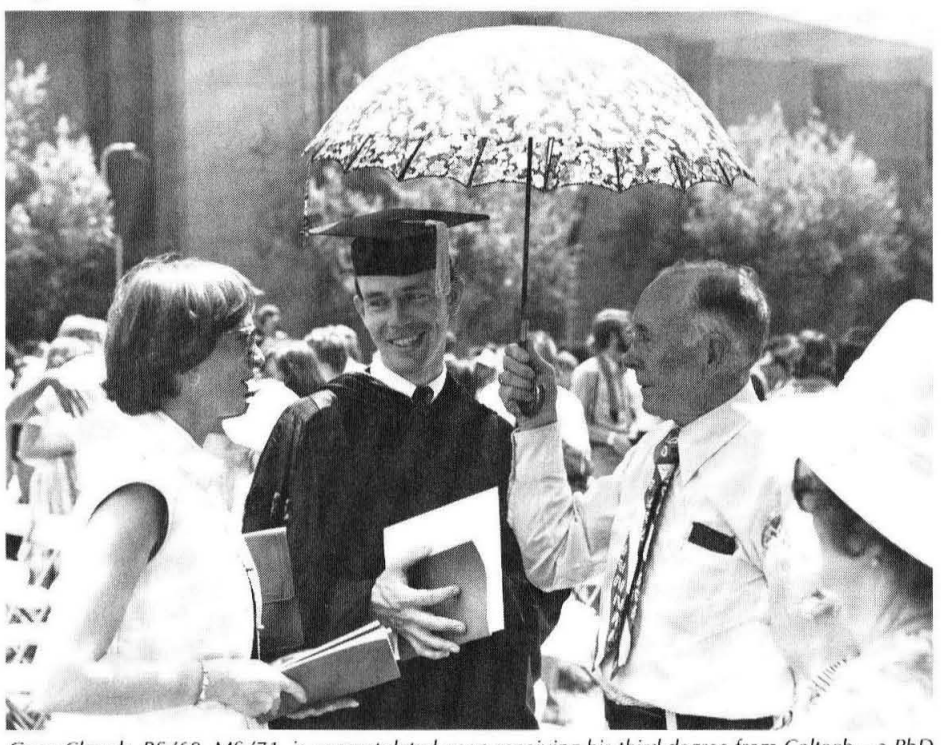
Of those receiving degrees, 42 were women — the same number as last year. These included 18 BS, 12 MS, and 12 PhD degree recipients.

PhD's in the social sciences

Among the master's degrees awarded, 102 were for options in engineering, 33 in science, and 3 in social science. Of the PhD degree candidates, 31 were in engineering and 82 in science, Christy said. This year marked a first at Caltech, as the Institute awarded 3 PhD's to students in the social sciences.

Noting that he would relinquish his duties as acting president of Caltech in July, Christy said, "I've enjoyed serving the entire Caltech community. There have been some important changes during my 18 months as acting president, including substantial progress in the planning and funding of the Braun Building of Cell Biology and the Watson Building of Applied Physics." He said that he anticipates groundbreaking for one or both of the new buildings in the next year.

Meanwhile, he said that Caltech will be inviting all of its graduates, including those who just received their degrees, to Caltech's next big celebration, the inauguration of Marvin L. Goldberger as president on October 27.



Gene Clough, BS '69, MS '71, is congratulated upon receiving his third degree from Caltech – a PhD from the Division of Engineering and Applied Science. With Clough are his sister, Elaine Clough, and his father, Everett Clough.

Beckman honored

Continued from first page

founder and presiding genius of Beckman Instruments and has also served as international and national business leader; and

WHEREAS, in spite of retirement from his official duties as chairman of the Board of Trustees of the California Institute of Technology, in which capacity he gave faithful and exemplary service from 1964 until 1974, he has continued in many constructive activities for that Institution in which his knowledge, experience, and judgment are of inestimable value; and

WHEREAS, he will celebrate the fiftieth anniversary of his graduation in June 1978.

NOW THEREFORE, Be it resolved that the Alumni Association of the California Institute of Technology extends its warmest felicitations to Arnold O. Beckman and joins the entire Caltech community in expressing praise and appreciation on this happy occasion.

As Fee read the final words, the audience of classmates, friends, and colleagues gave the recipient a standing ovation.

Beckman responded with pleasure and appreciation to the presentation — one that came as a surprise to him.

"I feel very fortunate in having spent the bulk of my life — more than 50 years — associated with Caltech in one way or another," he said. "I hope the relationship will continue for many years."

Beckman first came to Caltech in 1923 to work on his doctorate in photochemistry. He served on the Caltech chemistry faculty until 1940 when he left the teaching profession to devote full time to the development and manufacture of scientific instruments.

Beckman was the first alumnus to be named to Caltech's Board of Trustees (1953), and he served as board chairman from 1964 until 1974 when he was elected chairman emeritus. Dr. and Mrs. Beckman's generous gifts to the campus are marked in part by buildings bearing their names: Beckman Auditorium (1964) and The Mabel and Arnold Beckman Laboratories of Behavioral Biology (1974).

Chairman of the Board of Directors of Beckman Instruments, Inc., Beckman is recognized internationally for his contributions to science, education, industry, and environmental technology.

Beckman is a member of the National Academy of Engineering, an honorary member of the American Institute of Chemists, a Fellow in the American Association for the Advancement of Science, and a Benjamin Franklin Fellow of Great Britain's Royal Society of Arts.

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Dick Smyth

His business life is a family affair

by Phyllis Brewster

Dick Smyth's business life — as well as his private life — is definitely a family affair.

Smyth, who has just been named national chairman of the Caltech Alumni Fund for 1978-79, is also founder and president of two manufacturing companies in Huntington Beach and, along with his wife, Emilie, the co-head of a family of

The Dick Smyths aboard the family sloop, Pleiades.

five adult children. If the amount of family involvement in those businesses and in joint leisure activities is any indication, the Caltech Alumni Fund may benefit from the energies of more than one Smyth.

For a starter, in the Smyth companies — Milco International, Inc., which designs avionics systems for NASA and other aeronautical weapons systems for aerospace industries, and Computerm Corporation, which develops accounting and word-processing computer packages for small businesses — Emilie Smyth is receptionist, secretary, and security officer. (She also teaches elementary school, as she has for 17 years. But her after-school hours, vacations, and some weekends are spent with Milco and Computerm).

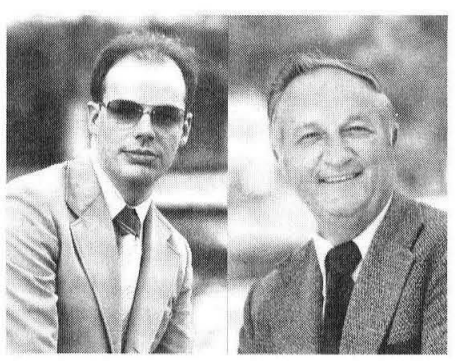
The oldest of the Smyth children, Gretl, 25, does the company accounting. Randy, 23, a catamaranist with the second best Olympic tryout racing record in the country, makes sails in the back half of the company building. Daughter-in-law Helen (married to David, 22) helps design the computer programs, and 17-year-old Dawn wraps wires on computer boards after school. (Ernie, 19, a Spanish major at USC, hasn't a niche yet.)

The Smyth's recreational involvements have also been familial. When their 36-foot sloop, *Pleiades* (named for the seven stars in the constellation and the seven in the family), raced to Honolulu, the crew enjoyed a good working relationship that enhanced the family ties. The *Pleiades* placed third in its class in two out of the three years that the Smyths entered it.

All of this family activity has its roots in a chance meeting during Dick Smyth's senior year in college. Smyth, who graduated from the Institute in 1951 with a major in physics, met Emilie that year at a Ricketts House dance. A sign on a bulletin board at Occidental College, inviting young women there to attend the dance, brought long-term results.

Smyth's regard for his education, and his commitment to helping maintain Caltech as a first-class institution, explains his role in Alumni Fund activities. He has been involved in the Fund since 1972, and has been an area chairman for four years — two years in Long Beach and two in Newport Beach. He and Mrs. Smyth are members of The As-

Paul Armstrong *Arne Kalm*



Paul Levin *Ernest Wade*

William Williamson *John Fee*

sociates. As national fund chairman he has solid expectations for meeting the 1978-79 goals.

"With Caltech alumni," he says, "giving is internalized. It's built into them."

Supporting Smyth this year in his efforts, as new members of the Alumni Fund Council effective July 1, are: Paul L. Armstrong, BS '51, MS '55, Orinda, California; Arne Kalm, BS '56, MS '57, Arcadia, California; Paul A. Levin, BS '72, Manhattan Beach, California; Ernest Wade, BS '43, MS '47, Rancho Palos Verdes, California; and William J. Williamson, BS '48, MS '49, Eng '55, Sherman Oaks, California. Also on the council will be John R. Fee, BS '51, Arcadia, California, 1978-79 president of the Caltech Alumni Association.

Alumni Fund tops its own dollar record

Caltech's Alumni Fund had raised more money than ever before in its history when the 1977-78 Fund year concluded on July 1, according to Ed Foss, BS '32, national fund chairman. As the campaign wound to a conclusion, workers had raised $796,746 from 4,532 donors, compared with $703,722 from 4,369 contributors in 1976-1977.

The Fund officially closed its books on July 1. A complete report, including a list of donors, will appear in the September issue of *Caltech News*.

Foss gave the credit for the Fund's steady growth to the efforts of the area chairmen and their many workers, who have relied heavily on contacts with the alumni in their areas to achieve their goals. "Our alumni body is small enough and we have enough workers to reach many of our graduates individually," Foss said. "These personal contacts have been important in giving us a steadily growing number of donors."

Foss said that Fund leaders have accepted goals for 1978-79 of 12 percent above this year's total in dollars from 4,800 donors.

Seminar Day in the Bay Area

Northern California alumni will have an opportunity to attend an off-campus version of Seminar Day when a San Francisco Mini-Seminar Day is held Saturday, October 14, at the Claremont Hotel in Berkeley.

Organized by the San Francisco chapter of the Alumni Association, the event will feature four Caltech faculty members who will talk about their research during the all-day program: J. Kent Clark, professor of English, "The Search for Goodwin Wharton"; Francis H. Clauser, the Clark Blanchard Millikan Professor of Engineering, "Is All This Smog Necessary?"; William H. Corcoran, vice president for Institute relations and professor of chemical engineering, "Our Lives Get Better — Progress in Artificial Heart Valves"; and Kerry Sieh, assistant professor of geology, "Pre-Historic Large Earthquakes on the San Andreas Fault in Southern California."

Registration will begin at 9 a.m. and the first session will start at 9:30. There will be a no-host reception at the close of the afternoon sessions, from 4 to 5:30 p.m.

The cost is $19 per person, including lunch. Formal invitations to all northern California alumni will be mailed in September.

Clark Award winners named

Isabella (Izzy) Lewis and Leslie Ann Paxton are the winners of the 1978 Donald S. Clark Memorial Awards at Caltech. Lewis is a sophomore majoring in chemical engineering and Paxton is a junior majoring in engineering. Each receives $500.

Clark Awards are given annually to students showing outstanding qualities of leadership and scholarship. They are in honor of the late Donald S. Clark, BS '29, MS '30, PhD '34, who was professor of physical metallurgy and secretary for 23 years of the Alumni Association.

Lewis has been vice president and president of Page House, a member of the cast of the ASCIT musical, a member of the ASCIT Educational Policies Committee, and a member of the faculty-student Undergraduate Academic Standards and Honors Committee. She has been conducting research in multiple steady-state reactions and she designed a solar energy collection laboratory.

A cheerleader at Caltech, Paxton is a member of the faculty-student Health Committee. She has been involved in numerous projects concerning the Health Center and its services for students. This summer she is conducting research on waste water pollution for a firm in Longview, Washington.

Ford Fund grant

Caltech is one of eight engineering schools in the country selected to receive a $100,000 grant from the Ford Motor Company Fund as part of a $1.6 million Henry Ford II Scholar Awards program.

Income from the $100,000 endowment fund established in each school is expected to provide a scholar with an annual cash award of up to $5,000 to help complete an educational program already under way or to help launch a career, according to Ray C. Kooi, director of the Ford Motor Company Fund.

The Honorary Alumni Dinner marked a double occasion for John Fee—his installation as president of the Caltech Alumni Association and his 27th wedding anniversary. To help them celebrate, the Alumni Association Board surprised the Fees with a cake and wine–one to be shared immediately, the other to be taken home. Richard Van Kirk, at right, presents the gifts.

Robert Christy accepts his certificate as an honorary alumnus from Richard Van Kirk.

Robert Gray receives his certificate as an honorary alumnus from Van Kirk.

Fee installed as Alumni Association president

John R. Fee, BS '51, was installed as 1977-78 president of the Caltech Alumni Association during the Honorary Alumni Dinner in the Athenaeum. Fee received the gavel from outgoing president Richard L. Van Kirk, BS '58, who was presented with a gavel engraved with his name.

A resident of Arcadia, Fee is executive vice president of James M. Montgomery Consulting Engineers, Inc., of Pasadena. A member of the board of the association from 1956-1969, he served as treasurer for many years and was named treasurer emeritus in 1969. He was elected vice president of the association in 1977.

Other officers for the coming year include: vice president, Carel Otte, Jr., MS '50, PhD '54; secretary, Philip L. Reynolds, BS '58, MS '59; and treasurer, James W. Workman, BS '57, MS '58.

Two new honorary alumni were recognized for their contributions to the Caltech community: Robert F. Christy, vice president and provost, professor of theoretical physics, and former acting president; and Robert D. Gray, professor of economics and industrial relations and former director of the Industrial Relations Center.

Directors elected for three-year terms were: Stanley A. Christman, BS '65; Munson W. Dowd, BS '38, MS '46; Steven D. Hall, BS '65, MS '66; and Steve Sheffield, BS '72. Thomas Tisch, BS '61, president of the San Francisco chapter, was elected to a one-year term. Richard Smyth, BS '51, national chairman of the 1978-79 Alumni Fund, will also serve for one year.

Continuing as board members for the coming year will be Clarence R. Allen, MS '51, PhD '54; Cydnor M. Biddison, BS '40; James R. Davis, BS '48, MS '49; Hiroshi Kamei, BS '51, MS '52; James King, Jr., MS '55, PhD '58; and Louise Kirkbride, BS '75, MS '76.

During the evening, plaques were presented to outgoing board members Joseph A. Dobrowolski, BS '49; Oliver H. Gardner, BS '51; John D. Gee, BS '53; Rolf C. Hastrup, BS '53, MS '54, Eng '58; William L. Martin III, BS '69, MS '70; Howell N. Tyson, Jr., BS '50; Peter M. Wilzbach, BS '70; and Robert E. Foss, BS '32, national chairman of the 1977-78 Alumni Fund.

Gould sets new track record

Many fine individual performances marked the Caltech track season this year, even though the team managed only a 1-6 record in dual meets and a sixth-place finish in the SCIAC All-Conference meet.

Sophomore Bill Gould set a new school record in the steeplechase. He ended the year with a best of 10:20.1 in the 3,000-meter event to place sixth in the SCIAC finals. Gould seems certain to break his own record several more times in the two years before he graduates.

Junior Robert Bourret also sparkled in the middle distances, managing to best most of his SCIAC foes in dual meets. He managed a seasonal and lifetime best of 4:06.0 in the 1,500-meter run and earned a fourth-place finish in the SCIAC finals. Bourret also placed seventh in the NAIA District 3 finals at Biola.

Norm Murray, also a junior, continued to be one of the most versatile point-getters at Caltech in recent years. In dual meets he often scored points in the shot put, high hurdles, intermediate hurdles, both sprints, and both relays. Sometimes he also scored in the javelin and long jump.

Murray finished the season with a 10.1 in the 100-yard dash, 15.7 in the high hurdles, and 22.8 in the 220-yard dash. He earned All-Conference and All-District honors with a fourth-place finish in both meets.

Bryan Sutula provided another bright spot. Always a high scorer, he participated in his first decathlon, scoring 4,754 points. Later he improved on this performance, setting a new school record with 4,852 points and a tenth place in the NAIA District-3 finals.

A highlight of the season was the performance of freshman Celia Peterson. Celia inaugurated a women's program by winning the SCIAC women's crown in cross country, capturing the two-mile title, and placing fourth in the mile. She further distinguished herself by being the first woman across the finish line in the Los Alamitos Marathon last March with a time of 2 hours, 47 minutes, ranking her among the world's top 10 women marathoners.

Golf

The 1978 varsity golf team finished the season with more victories than any team in recent years. In conference play the golfers defeated La Verne twice and were victorious over Claremont, Occidental, and Whittier. The conference championship resulted in a tie between Pomona and Redlands; Caltech finished fourth. Special honors went to Robert Chess, who won the 1978 J. B. Earl Award as Caltech's most outstanding player. Chess also was a co-winner of the Jesse Clark Memorial Trophy, given to a conference player nominated by the coaches for sportsmanship and good humor as well as golfing ability.

Tennis

Thanks to a split in league matches with La Verne, the Caltech tennis team finished one notch higher this year than last in the SCIAC final standings. Redlands again dominated the conference with Claremont-Mudd a close second. Pomona-Pitzer and Occidental were next in order, followed by Whittier, Caltech, and La Verne. Caltech also scored two wins over Ambassador College and lost several close matches to non-league opponents.

Baseball

Heavy spring rains failed to dampen the spirits of the Caltech baseball team. Fortunes improved considerably over last year despite the postponement and cancellation of several games. In all, the engineers won six games and were shut out only once during the season. The team showed more authority with the bat this year than in about ten years, hitting 8 homers, 14 doubles, and 5 triples. Pitching plus the offensive and defensive strengths of Steve Eckmann proved to be the highlights of the season. In league competition Tech came in last after being edged out by Pomona-Pitzer in the last inning of the rubber game. La Verne again won the SCIAC championship, followed by Claremont-Harvey Mudd, Whittier, Redlands, Occidental, Pomona-Pitzer, and Caltech.

Martha Wayne retires

Martha Wayne's official position is secretary in the athletics department, but her sympathetic nature and her genuine interest in young people have carried her influence well beyond her administrative duties. She's earned the affection of a generation of students because she was always willing to listen to someone who just needed a friend to talk to. In July, after 24 years in the department, Mrs. Wayne will retire.

During these years it's been her job to maintain records on all interhouse and intercollegiate competitions, prepare and distribute schedules for athletic events, and keep watch over students' athletic eligibility. She says she's never found this record-keeping a chore because "to me, the grades are people."

Many students received a boost via her personal interest in their grades, because she has kept tabs on those who might qualify for NAIA or NCAA scholarship awards, usually noting their eligibility before it came to the coaches' attention. Once she spotted a potential winner, she became a strong advocate for the athlete as she prepared the nomination.

Richard Van Kirk

"A fellow alumnus equals a friend"

If someone gave a prize for receiving the most unusual wedding present, Richard Van Kirk, BS '58, might well be the winner. On the eve of his wedding in 1959, Van Kirk, the 1977-78 president of the Alumni Association, was presented with the coveted Ricketts House brake drum by several of his alumni colleagues. For many years, freshmen and sophomores in Ricketts House had competed for possession of the drum — an heirloom from a 1920's-vintage automobile — through a series of annual melees popularly termed "brake drum riots." How his friends obtained possession of the drum has never been revealed.

"I passed on the drum to the next Ricketts House alumnus who married," says Van Kirk, who is director of management services for Arthur Young & Company, a CPA firm with headquarters in Los Angeles. "He passed it on to the next of our group who married, who passed it on in turn. I think it's back on the East Coast now. We were afraid to keep it permanently because we might have become the focus of a brake drum riot ourselves."

The Ricketts students, meanwhile, found a replacement for the original trophy, and they continue to stage brake drum riots to this day.

Van Kirk's wedding gift from his Ricketts House friends was only one of a series of shocks that marked his Caltech career. He says the first occurred when he looked over his initial freshman math test. Another and more pleasant surprise happened at commencement when Caltech President Lee A. DuBridge announced that Van Kirk had won the Hinrichs Award for contributions to the student body and for outstanding leadership and character.

"My parents came out from Phoenix and were in the audience," Van Kirk recalls. "I could hear my mother scream when Dr. DuBridge made the announcement."

In the intervening years he found the time (in addition to mastering Caltech math) to letter three years in track and football and two years in basketball. He was named SCIAC All-Conference quarterback and voted the most valuable player in both football and track. In track he set a Tech long-jump record that still stands. He also edited the *California Tech* sports pages and was active in campus politics — as a freshman class officer and a member of the ASCIT Board of Directors.

A return to campus

Van Kirk left Caltech after graduating with a degree in mechanical engineering to work for Procter & Gamble but he returned to campus five years later for a development position, contacting heads of corporations to seek support for the Institute.

"Caltech made two special contributions to my career, beyond my technical training," he says. "First it gave me the chance to get involved as a student in activities that I couldn't have been involved in on a larger campus. The second contribution was working with corporate leaders through the Development office. Both experiences broadened my outlook and eventually they motivated me to go into management."

Because of his appreciation for his Caltech association, it was natural for Van Kirk to become active in the Alumni Association. As an alumnus he has been a member of the Seminar Day Committee for six years and of the Board of Directors for four years. Also an Alumni Fund worker, he is a member of its council and has been the Arcadia-Sierra Madre area chairman.

As he evaluates the Alumni Association's accomplishments this year, he stresses the continuing growth of the secondary school program. Its goal is to increase the number of highly qualified young people who are applying to Caltech. Almost 100 alumni contacted high school counselors, science and mathematics teachers, principals, and students in 225 high schools throughout the U.S. that have produced high numbers of National Merit Scholar semi-finalists over the past seven years. First-hand knowledge of Caltech programs and student life make its graduates especially effective as advocates for the Institute, Van Kirk believes.

Richard Van Kirk

Rewarding self improvement is a venerable tradition, and one that the Alumni Association decided to follow this year when its Student-Alumni Relations Committee sponsored an improvement contest among the undergraduate houses. Ruddock House won a $1,500 first prize for paneling a wall, facing a fireplace and adding a hearth in the lounge, and building a barbecue in the courtyard. Ricketts House took second place and won $1,000 for relandscaping its courtyard and renovating an interior area. Pictured at the awards luncheon with students from the winning houses are members of the Student-Alumni Relations Committee: James W. Workman, BS '57, John R. Fee, BS '51, Russell Reder of Ricketts House, Ernest Lewis of Ruddock House, Paul Magliocco of Ricketts House, and Clarence Allen, MS '51, PhD '54.

"Applications to Caltech were up by 7 percent this year — a substantially higher rate of increase than at MIT," he says. "We in the Alumni Association believe we can take some of the credit. Besides helping the Admissions Committee, the program offers a special opportunity for alumni around the country to do something for Caltech. Most of them appreciate the chance."

In other student-oriented projects, the association contributed $3,000 again this year to help make it possible to hold Freshman Camp on Catalina Island. The association also helps to support ASCIT, the Graduate Student Council, the Caltech Glee Club, the ASCIT Musical, Interhouse Dance, *Big T*, and various projects in the student houses. Athletic awards and banquets for intercollegiate sports participants also receive funding.

House improvement contest

As an innovation this year, the association's Student-Faculty-Alumni Relations Committee, under the chairmanship of Clarence Allen, MS '51, PhD '54, sponsored an improvement contest in the undergraduate houses. First and second prizes of $1,500 and $1,000 were awarded to Ruddock and Ricketts Houses for relandscaping and renovation projects.

Broadening the impact of the Alumni Scholarship Program, the association this year funded three partial scholarships and four full scholarships. The alumni donors and their firms included Mihran Agbabian, MS '48, of Agbabian Associates; Cydnor Biddison, BS '40, of Hillman, Biddison and Loevenguth; James R. Davis, BS '48, MS '49, of Converse Davis Dixon Associates; William J. Carroll, BS '48, MS '49, president, James M. Montgomery Consulting Engineers, Inc.; Carl B. Johnson, BS '37, MS '44, Eng '46, of Johnson & Nielsen Associates; Ralph S. McLean, BS '30, of McLean & Schultz, consultants; Albert A. Erkel, BS '45, of Erkel, Greenfield & Associates; and Return Moore, BS '47, MS '48, president, Moore & Taber.

Students who won scholarships were David Crane, James Gerdes, Scott Hochwald, Jeffrey Carpenter, Javier del Valle, and David Shenton. Eric Kaler was recipient of the 1977-78 Donald S. Clark award.

Adding a special dimension to student-alumni relations, several alumni invited seniors to their homes for dinner this year. About one-third of the senior class were guests of alumni, according to Van Kirk.

Programs that renew old times and stimulate new interests by bringing alumni together have been especially successful in 1977-78, Van Kirk believes. Some of these included the outing to the Dryden Space Center at Edwards Air Force Base, the Open House at JPL which attracted 600 alumni and their guests and about 200 students, the wine tastings — sellouts again — and the Rose Parade Special. Class reunions continued to grow in attendance. Dinners combined with the chance to hear Watson lectures were popular, and Alumni Seminar Day exceeded all attendance records, attracting 1,900 people to the campus. Four graduates were honored as recipients of the Distinguished Alumni Award: William F. Ballhaus, president of Beckman Instruments; Donald Knuth, the Fletcher Jones Professor of Computer Science at Stanford University; Paul MacCready, who recently won the Kremer Prize for man-powered flight; and Henry William Menard, the new director of the United States Geological Survey.

To provide a permanent on-campus recognition for these and other graduates who have been so honored, the Alumni Association installed a plaque in Dabney Hall, engraved with the names of everyone who has received the Distinguished Alumni Award.

Many alumni who can't travel to the campus for programs can attend chapter meetings in their home areas, Van Kirk notes. This year, 16 chapter meetings were held in 11 locations. In November and April, Clarence Allen, professor of geology and geophysics, and Henry Lester, associate professor of biology, traveled to Paris, France, to speak before Caltech graduates who attended meetings of this chapter, now in its second year.

Van Kirk doesn't find it surprising that these programs have achieved such popularity. "Being an alumnus of Caltech is like being a member of a 14,000-member fraternity," he says. "Wherever you travel throughout the world, when you meet another alumnus you feel you've met a friend. It's this special bond that draws us together and makes us want to work for Caltech and its programs. I'm proud to have been a leader for these programs this year."

More Fansome facts

The April Caltech News *issue published a story on the antics of the elusive Aluvial O. Fansome, an alleged resident of Fleming House. New material on Fansome's roots is available via this letter from Gordon F. Hughes, BS '59, MS '60, PhD '64, a computer scientist with Xerox.*

Fleming's Alluvial O. Fanson is a lot older than the eight years claimed for him in your April issue. Al's first appearance in Fleming was in 1957 or 1958 when he appeared out of nowhere to solve a sticky problem: We wanted to send for a mail-order booklet which was alleged to explain "the Secret of Cosmic Consciousness," but we didn't want to get on any freaky mailing lists.

Al volunteered his name for this purpose and he did indeed get on a lot of mailing lists. Around 1959, Al got into some trouble over a "bill me later" magazine subscription and received several dunning letters.

It's a pleasure to see that Al is prospering, although his name seems to have been transmuted into Aluvial O. Fansome (perhaps because of a bad credit rating over the unpaid subscription?).

PERSONALS

1933

JOHN R. PIERCE, MS '34, PhD '36, was awarded an honorary doctor of science degree by USC at its 95th commencement on June 8. The professor of engineering at Caltech is best known for his work with the Echo and Telstar satellites. USC cited Pierce for his "extraordinary scientific and engineering contributions and his leadership in bringing distant nations within immediate sight and sound and for enhancing many-fold our awareness and understanding of kindred beings everywhere."

1935

LOUIS T. RADER, MS, PhD '38, is one of 16 members appointed to President Carter's administrative services reorganization committee. The advisory committee is charged with giving critiques on improvements in the organization, management, and delivery of administrative services within the federal government. Rader is the Alice M. and Guy A. Wilson Professor of Electrical Engineering and professor of business administration at the University of Virginia. The former vice president of General Electric is also executive director of the Center for the Study of Applied Ethics, an affiliate of The Colgate Darden Graduate School of Business Administration.

1936

WILLIAM A. FOWLER, PhD, Institute Professor of Physics at Caltech, received an honorary doctor of science degree from The Ohio State University on June 9. He was granted his B.Eng. from OSU in 1933.

1937

ROLAND A. BUDENHOLZER, MS, PhD '39, was recently named the first John T. Rettaliata Institute Professor of Mechanical Engineering at the Illinois Institute of Technology in Chicago. He lives in Clarendon Hills.

1938

Members of the Class of 1938 held their 40th reunion last May 12. Of course, not everyone could attend, but some former Techers sent along notes to update their classmates on their current activities:

ARTHUR C. (CLIFF) DOWNING had to miss his 40th because of a trip to Tokyo. He writes, "I am still working at General Electric in Ontario where I have been for 36 years. I have always enjoyed this work and the last few years have been especially enjoyable with many opportunities for foreign travel. This trip will include Tokyo, Taipei, Kaohsiung, Hong Kong and Singapore. Marie and I are both in excellent health and frequently make these trips together."

ARMAND DU FRESNE says that the Matrix Communicator he developed for speechless handicapped people is really taking off. He also serves as president of the Community Services District in Cambria, California.

BOYNE GRAINGER writes, "I am a professional specialist with Getty Oil Company in Bakersfield, now directing the planning phase of a major oil mining project and holding off retirement until my time runs out or the job gets boring, whichever comes first."

JOHN L. MERRIAM spent the first 20 years of his career as an engineer, and in 1956 went to Saudi Arabia with the Ralph M. Parsons Co. as part of the first water resources team in the Ministry of Agriculture. In 1958 he came to San Luis Obispo to begin a new career in teaching irrigation, drainage, hydraulics, and other water related courses in the agricultural engineering department of California Polytechnic State University. His retirement party from the University was the same night as his 40th reunion.

FREDRIC H. MOORE writes that he has been with Texaco for 40 years and plans to retire next year, leave Houston, and return to California, "preferably southern California."

HENRY T. NAGAMATSU, BS, MS '40, PhD '49, assumed the title of Research Professor at Rensselaer Polytechnic Institute at Troy, N.Y., as of February 1.

1941

GRICE AXTMAN, a native of South Pasadena, has been appointed executive manager of that city's Chamber of Commerce. Axtman has centered his career on the management of associations and non-profit organizations throughout the United States.

FRANKLIN S. HARRIS, JR., PhD, retired from Old Dominion University, Norfolk, Virginia, where he was Research Professor of Physics, Geophysical Sciences, and Oceanography for the last seven years, during which time he also worked with NASA Langley Research Center in atmospheric optics. He plans to live in Rockville, Utah, five miles from the entrance to Zion National Park.

1942

ROBERT N. HALL, PhD '48, a physicist at the General Electric Research and Development Center, has been elected a scientific member of the Bohmische Physical Society, an international society that selects its scientific members for their accomplishments in the field of particle-solid interactions by independent original research. Hall was cited for "contributions to the development of high purity germanium for gamma ray spectrometers."

1946

DANSY T. WILLIAMS, MS, retired on February 25 after more than 36 years of government service. He served his last 13 years as principal research meteorologist at the Southern Forest Fire Laboratory, U.S. Forest Service, Macon, Georgia. He and his wife, Marie, will continue to live at 1725 Waverland Circle, Macon, Georgia 31211.

1947

FRANK R. BOWERMAN, MS '48, has been appointed senior vice president of Engineering-Science, Inc., of Arcadia, California. He has served as a consultant, member, and officer of more than a dozen special advisory committees at the national, state, and regional level, including the President's Office of Science and Technology. In addition to 25 years of private consulting practice, he served five years as a department chairman, professor, and director of environmental engineering programs for USC. He is past president of the American Academy of Environmental Engineers and a Fellow of the American Society of Civil Engineers.

1948

JAMES C. FLETCHER, PhD, delivered the address at Lehigh University's 110th commencement on May 28. Fletcher, who headed NASA from 1971-1977, and served as the president of the University of Utah from 1964-1971, is currently director of the Energy Resources Program at the University of Pittsburgh and is a consultant for the President's Science Advisory Committee.

1949

HOWARD J. COHAN, chief of the division of research at Reclamation's Engineering and Research Center in Denver, was recently presented the Department of the Interior's highest honor, the Distinguished Service Award, by Secretary Cecil B. Andrus. Cohan was recognized for his achievements in engineering, technical administration, and management. Under his leadership, the research division has widened its area of expertise in ecological and environmental research, desalting technology, water quality, and polymer concretes and plastic piping, and has made major advances in electric power generation and distribution.

1950

DONALD S. BARRIE is the primary author of *Professional Construction Management*, published by McGraw-Hill. The book is a graduate-level text with wide appeal to engineers and architects employed in the construction industry. Barrie lives in Danville, California, with his wife, Audrey.

LOUIS KATZ remarried Kathryn T. Katz on March 5. He continues as president of Electrac, Inc., of Anaheim, California, and lives in Downey.

THE REV. DONALD P. MERRIFIELD, S.J., president of Loyola-Marymount University, has been elected president of the Association of Independent California Colleges and Universities. He is a former recipient of a Caltech Distinguished Alumni Award.

1953

BRUCE N. AMES, PhD, professor and chairman of the department of biochemistry at UC Berkeley, was named the recipient of the first Simon M. Shubitz Cancer Prize and Lectureship offered by the University of Chicago's Division of the Biological Sciences and The Pritzer School of Medicine. He gave his lecture May 2 in Chicago. The prize and lectureship were created to bring to the campus an internationally respected scientist who has made significant contributions to the solution of the cancer problem. Ames is a recipient of Caltech's Distinguished Alumni Award.

DAVID JOHNSTON recently moved to Houston, Texas. He writes, "I am still working with Western Geophysical Company, currently as senior programmer in charge of a variety of R&D projects. After 12 and a half years in England with all of its scenic variety, Texas seems to offer little of interest. But it is nice to be within vacation reach of the mountains and desert areas of the Southwest again."

ARTUR MAGER, PhD, has been elected a group vice president of The Aerospace Corporation. He will head the firm's engineering group. Mager is living in Los Angeles.

1956

EDWARD M. DAVIS, MS, writes, "I have been recently promoted by IBM to vice president of the General Technology Division and site general manager, Burlington, Vermont. Just before this occurred, I was elected to the Board of Directors of the University of Vermont (UVM). I'm the first full member of the board of directors of UVM who never attended the University."

MYRON R. SZOLD, Ex, purchased — with others — Harris Associates a few years ago — an investment counseling firm. He says, "I remarried an Israeli national last year and acquired two additional lovely daughters as a bonus." They live in Chicago.

JACK L. KERREBROCK, PhD, widely known for his work in the development of propulsion systems for aircraft and spacecraft, was named head of the department of aeronautics and astronautics at MIT, effective July 1. He is also director of the department's Gas Turbine and Plasma Dynamics Laboratory, and has been a faculty member at MIT since 1960. Kerrebrock has occupied the Richard Cockburn Maclaurin Chair in Aeronautics and Astronautics since 1975.

1957

ROBERT L. WILDEY, MS '58, PhD '62, was selected by the Northern Arizona University chapter of the Phi Kappa Phi honor society as Faculty Scholar of the Year. A member of the NAU faculty since 1971, he has done research in modern infrared astronomy, as well as stellar, galactic, and solar system astronomy.

1958

ROBERT C. TAUSWORTHE, MS, PhD '63, was recently elected a Fellow of the Institute of Electrical and Electronics Engineers (IEEE) for his "contributions to communication theory in deep space and radio navigation systems." He is manager of the Deep Space Network Programming Systems Project at JPL in Pasadena. One of his accomplishments was the development of an advanced planetary ranging system — the Tausworthe Ranging System — that was used on many planetary missions, the first being Mariner V in 1967.

1965

JOHN D. CHIDLEY writes "Since leaving Tech I have acquired a PhD (1971, University of Utah), a wife, the former Judy Kay McArley of Martinsville, Virginia (1973), and a son, Matthew (1976). I've been with du Pont since 1971 in various R&D & Process Development assignments in the nylon division, and in October 1977 was transferred from Martinsville to Seaford, Delaware, to assume my current job of process supervisor — nylon textiles."

1966

HERBERT SCHILLER, MS, recently joined Datalog Division of Litton Systems, Inc. as their computer systems manager. He lives in Wheatley Heights, N.Y.

HENRY G. SCHWARTZ, JR., PhD, vice president and manager of the Environmental Division of Sverdrup & Parcel & Associates, Inc., St. Louis, was appointed corporate principal-environmental of the corporation. He assumes responsibility for long-range planning, marketing and overall direction of environmental studies and activities throughout the Sverdrup Corporation.

1967

RICHARD A. LANDY received his MD degree in 1972 from St. Louis University, took his residency training in anatomic and clinical pathology at the University of Minnesota, and was board certified in 1976. He is now in private practice in St. Louis; he is married and the father of Brian, 10, and Molly, 5.

ARVEL B. WITTE, PhD, was recently awarded a U.S. patent for a fluid injection trip device used to enhance mixing in a chemical laser cavity. Preliminary tests showed that laser power was increased in excess of 60 percent through use of the device. A resident of Rolling Hills, California, Witte has been at TRW since 1967.

1968

DAVID C. ERLICH writes, "My wife, Marta, and I are delighted to announce the birth of our son, Rigel, born at our home in Palo Alto, Calif., on March 8. I am still doing shock wave physics research at Stanford Research Institute and have become a serious student of the martial art of Aikido."

THOMAS R. McGETCHIN, PhD, moved in June 1977 from Los Alamos Scientific Laboratory to Houston, where he is director of the Lunar & Planetary Institute.

ERIC WICKSTROM, assistant professor of chemistry at the University of Denver, has been awarded a second $25,000 grant from the National Science Foundation to continue research on "Molecular Rulers for Measuring Transfer DNA."

1970

CARL J. RICE, PhD, was part of a team of scientists and engineers from The Aerospace Corporation in El Segundo, Calif., who participated in a June series of joint American-Soviet rocket tests near Wallops Flight Center, Wallops Island, Virginia, that studied sources of ionization in the upper atmosphere. His team designed, built, and calibrated a rocket instrument that measured ionizing particles.

1971

MARK J. ABRAMSON writes, "I was married last August to Olene Simons (BA '72 USC; MLS '73 USC) and have been overwhelmingly happy ever since." He is senior programmer/analyst at Memorial Hospital Medical Center in Long Beach.

1972

PAUL S. ZYGIELBAUM, MS '73, project manager with the Electric Power Research Institute of Palo Alto, California, is on a two-year assignment to the Portland General Electric Company, a public utility, where he is "getting first-hand experience with power plant equipment to strengthen his background for management of R&D on advanced power systems." He writes, "These activities are keeping our household in a rather mobile state, and I am thankful for my wife's understanding. Michelle has a nursing position at a local hospital and is keeping busy. Our son, Sam, will be two years old in April and is enjoying the whole thing."

1973

PETER BROOKS writes, "Be it known that in its generosity and lack of wisdom, the New School for Social Research has granted me an MA in Economics, and is willing to abide by its folly in supporting my research in radical economics. I shall continue to work on questions concerning empirical testing of Marxist analyses of capitalist systems, and practical questions concerning the control of corporations, while watching New York City slowly slide into the sea of bankruptcy."

JEAN FRANCOIS SAINT-MARCOUX, MS, and his wife, Kazuyo, are pleased to announce that their daughter, Cécile Yoko, was born on May 10. They live in Paris.

1974

DAVID B. PEISNER, a medical student at Wayne State University in Detroit, just finished participating in the "Computers in Clinical Medicine" elective at the National Institutes of Health, Bethesda, Maryland. This was a two-month course given to thirteen senior medical students from all over the country. He says, "During our stay, we did research and were exposed to virtually every application of computers in medicine that presently exists. All of us had extensive computer backgrounds."

1976

WENJI VICTOR CHANG, PhD, assistant professor in the department of chemical engineering at USC, was one of 45 scientists from around the world invited to present a technical paper at the 113th meeting of the Rubber Division, American Chemical Society, in Montreal, Canada, in May.

Reminiscing over copies of the Big T at the class of 1963 reunion in the picture at left are Daniel J. Alderson, BS '63, and Joyce McDaniel, seated, and James G. Williams, BS '63, and N. Paul Rosenthal, BS '63, standing. Center: Recalling former classmates at the Half-Century Club luncheon are Richard G. Folsom, BS '28, MS '29, PhD '32; Guy Chilberg, BS '28, MS '29; and Mrs. Folsom. Right: Robert M. Francis, BS '43, with Theodore D. Buetell, BS '43, at the class of 1943 reunion.

Class reunions: it's the season to reminisce

The year was 1928. Four saloons were raided by prohibitionists in New York City on New Year's Eve. Johnny Weismuller was the big name in swimming, and Sonja Henie in figure skating. Coolidge gave way to Hoover in the White House, and 68 countries signed the Kellogg-Briand Pact to "outlaw war."

In Pasadena a graduating class of 102 was preparing to go out into the world — unmindful, for the most part, of prohibitionists or pacts. Their thoughts were on graduate schools, jobs, or marriages — or on the party they would attend at the Millikans' that week. (Walter Righter took his girl, Norma. She's still with him.) Caltech was 37 years old.

A half century later, on June 2, 1978, at the Huntington-Sheraton Hotel in Pasadena, 37 members of the Caltech class of 1928 — out of 67 who are living — have gathered for their 50th reunion, to exchange memories and fill in the gaps on the years in between.

Before-lunch mingling produces many warm handshakes (Frank Noel and Edwin Templin haven't seen each other since they graduated) and a few archival treasures — a class yearbook and a photo of the class of 1918, circulated by Earl Mendenhall, BS '18. (Mendenhall is one of several alumni at the reunion who graduated before 1928.)

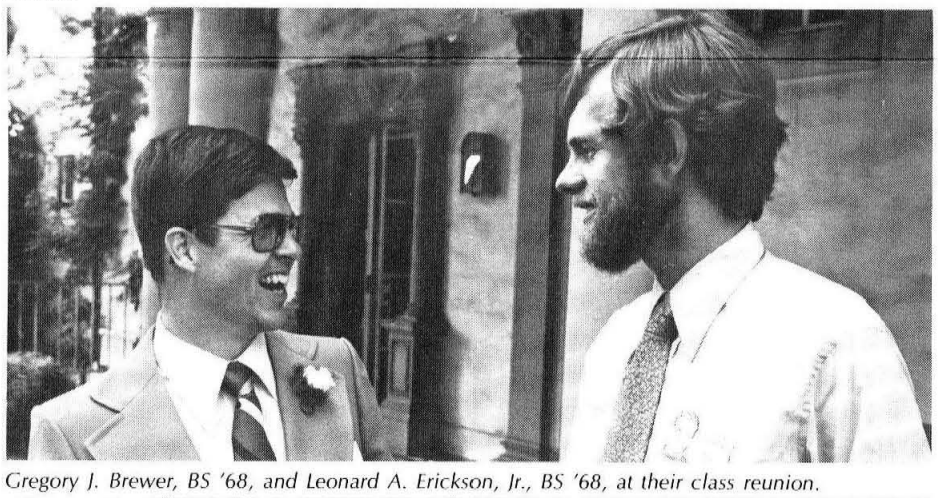
After eating and more catching up, the ceremonies begin. John Fee, BS '51, president of the Caltech Alumni Association, presents a special award to class member Arnold O. Beckman, chairman emeritus of the Caltech Board of Trustees (see story on page 1), and Reuben Moulton, BS '57, calls each Techer from the class of 1928 to the platform for a minute of reporting and remembering — and to receive their Half-Century Club Certificates. W. Morton Jacobs is the reunion committee chairman.

The flow of tributes to Caltech and the part it played in the lives of alumni is second only to the praise accorded wives. ("Marrying her was the best thing I ever did." — George Crane.) ("I always felt Caltech was good to me. It brought my wife to campus." — Charles Lash.)

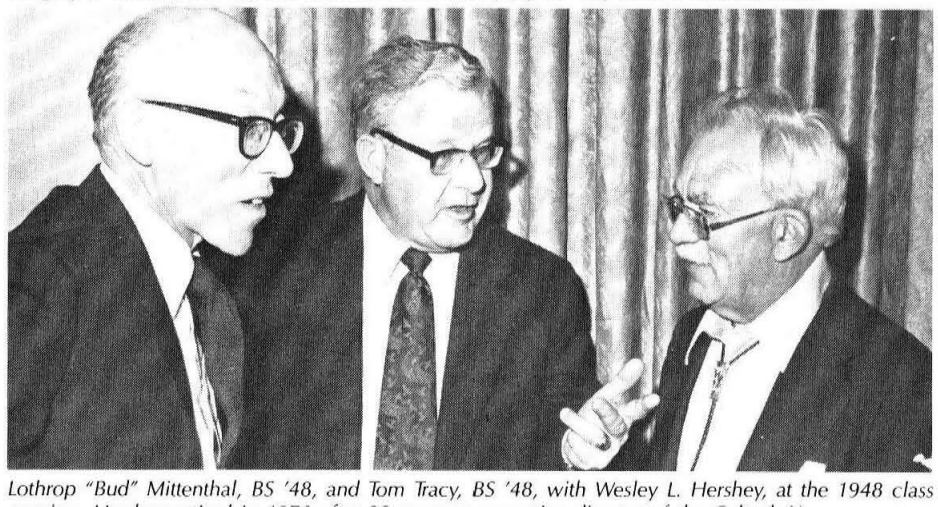
Don McFaddin says that one of the most gratifying things in his life has been to be associated with Caltech. Edwin McMillan declares that, of the great institutions he's been associated with, "Caltech holds my heart the most."

Elbert "Al" Miller, attending his first Caltech reunion, remembers "not the work I did, but all the fine fellows I met here."

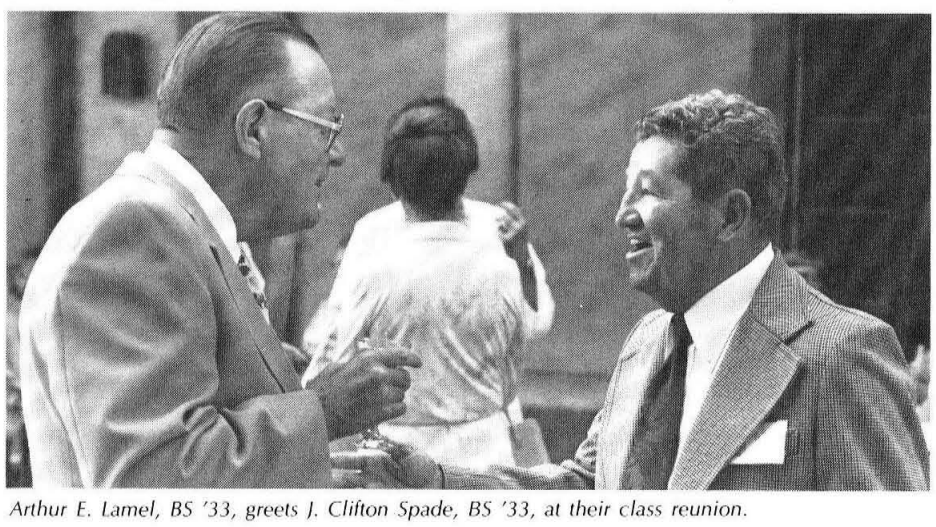
Donald W. Stocking, BS '58, and his guest, Carol Geer, right, talk with a friend at the 1958 class reunion.



Gregory J. Brewer, BS '68, and Leonard A. Erickson, Jr., BS '68, at their class reunion.



Lothrop "Bud" Mittenthal, BS '48, and Tom Tracy, BS '48, with Wesley L. Hershey, at the 1948 class reunion. Hershey retired in 1976 after 30 years as executive director of the Caltech Y.



Arthur E. Lamel, BS '33, greets J. Clifton Spade, BS '33, at their class reunion.

Others reminisce in more detail. Richard Folsom recalls stroking Professor Robert Daugherty's pet snake on a visit to his mentor's house. Kenneth Robinson tells about running a pair of green shorts up the flagpole. In a noticeably heavy accent, Nicolai Senatoroff relates how he got three pink slips one year, each telling him he'd "be out" unless he improved his English. Huston Taylor says he believes he is the only person to enter Caltech with no high school chemistry or physics.

Robinson also remembers needing help with sophomore physics. One of his professors recommended a young man who could tutor him. It was Carl Anderson, BS '27, PhD '30, later to receive the Nobel Prize in physics. The class of 1928 had its own Nobel Laureate — chemist Edwin McMillan — back for his first Caltech reunion.

Others tell of careers in education. Richard Folsom says he was "an academic bum for 40-odd years." (He is president emeritus of Rensselaer Polytechnic Institute.) Russell Love, after a stint with three industrial companies, became vice president and dean of men of Cogswell Polytechnic College of San Francisco. Robley Evans reports 38 years at MIT, where he was professor of physics.

The engineers are on hand, too. Gunner Gramatky says he made tunnels, curbs, sidewalks, sewers, storm drains, and aqueducts, and calls it all "just plain fun." Carmun Shaffer's last assignment involved the construction of an Air Force base in Greenland.

And so it goes with bits about careers, retirement activities, and families, along with greetings. Says Halsy Shepley: "Hello to you old codgers and your good-looking friends." Then Frank Pine, BS '24, leads the group in singing the Alma Mater, and the meeting adjourns, to reconvene later for dinner at the home of James B. Black, executive director of the Alumni Association.

Other classes also converged on the campus in June for their own five-year reunions. The Class of 1933 met on June 2 for campus tours, and a social hour and dinner in the Athenaeum, as did the classes of 1948 and 1958. The class of 1938 held its reunion at the Annandale Golf Club. The classes of 1943, 1963, and 1968 held their reunions on the campus on June 10, with tours, a social hour, and dinner. The vigorous members of the class of 1973 held their reunion in Tournament Park, where they picnicked, swam, and enjoyed ahletic contests.

Gray, Vogt to head divisions

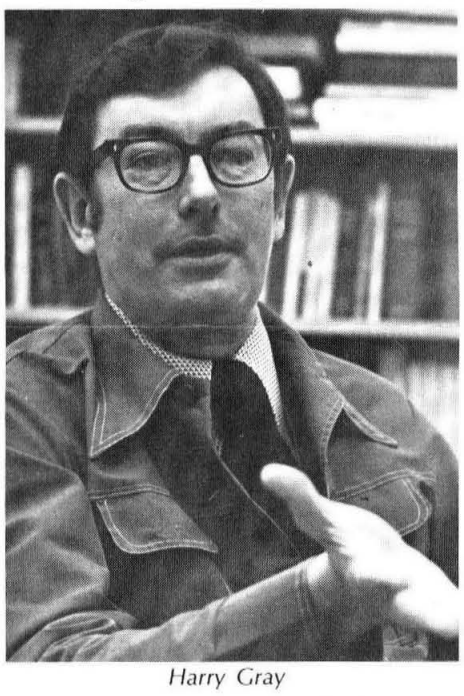
Two Caltech faculty members — Harry B. Gray and Rochus E. Vogt — have been appointed division chairmen at the Institute, Acting President Robert W. Christy has announced.

Gray has been appointed chairman of the Division of Chemistry and Chemical Engineering, succeeding John D. Baldeschwieler, who has completed a five-year appointment in that role. Gray is the William R. Kenan, Jr. Professor and professor of chemistry.

Vogt, professor of physics and chief scientist at the Jet Propulsion Laboratory, has been appointed chairman of the Division of Physics, Mathematics and Astronomy. He succeeds Maarten Schmidt, professor of astronomy, who has been named director of the Hale Observatories.

"Both of these men have earned international reputations for their work," Christy said. "We're fortunate in having people of their ability and experience to fill these important posts."

Gray is widely known for work in the chemistry of excited states of metallo-organic compounds and the



Harry Gray

role of metal ions in living organisms. He and his research group are studying the mechanisms by which energy is stored to run biological systems, and how metals react with oxygen in these systems. This work bears upon such important areas as hemoglobin, enzyme action, and photosynthesis. Recently he and his colleagues developed a compound — a molecule containing rhodium — that can convert the energy of sunlight directly into chemical fuels.

In recognition of his research, Gray was elected to the National Academy of Sciences when he was only 35. He is the winner of several honors including the American Chemical Society Award in Pure Chemistry and the ACS Award in Inorganic Chemistry. He has become almost as well known for his use of lively classroom presentations to capture his students' interest as he has for his research. In 1972, he was named one of the four notable college chemistry teachers in the United States by the Manufacturing Chemists' Association.

A native of Kentucky, he received a BS degree from Western Kentucky University in 1957 and a PhD degree from Northwestern University. He was a National Institutes of Science Postdoctoral Fellow at the University of Copenhagen in 1960-61, and in 1961 he joined the chemistry faculty at Columbia University, becoming the youngest full professor in that institution's history. He came to Caltech as professor of chemistry in 1966 and was appointed Kenan Professor in 1976.

Rochus Vogt

Vogt, who joined Caltech as an assistant professor of physics in 1962, was chairman of the faculty from 1975 to 1977. His primary field of research is high energy physics. He has been the principal investigator for the cosmic ray experiments on the NASA-JPL Voyager I and II missions to Jupiter and Saturn, and science investigator for cosmic ray experiments on other NASA flights.

As JPL's chief scientist, Vogt is a member of the laboratory's Executive Council and director of the scientists there. He will resign this post after completing projects in which he is currently involved.

Vogt is a Fellow of the American Physical Society and a member of the American Geophysical Union, the American Association of Physics Teachers, and the American Association for the Advancement of Science. A native of Germany, he is a graduate of the University of Heidelberg and received his MS and PhD degrees from The University of Chicago. He conducted research at the university's Enrico Fermi Institute for Nuclear Studies from 1953 to 1962.

New rings of Uranus found

Indications of three additional rings around the planet Uranus — bringing the total to eight — have been discovered by astronomers of Caltech and the Hale Observatories. Peter M. Goldreich, professor of planetary science and astronomy at Caltech, announced the discovery. Goldreich said the observations were made April 10 by Eric Persson of the Hale Observatories, using the 100-inch du Pont telescope at the Las Campanas Observatory in Chile. Philip Nicholson, a Caltech planetary science graduate student, reduced and interpreted the data.

The rings of Uranus were originally discovered on March 10, 1977, by several independent groups of astronomers. The most definitive results were obtained by a team from Cornell University headed by James Elliot. The astronomers found five main rings with radii ranging from 44,800 kilometers (km) to 51,800 km, and widths from 3 to 100 km. The Caltech-Hale Observatories team observed the rings, which are normally too faint to be detected by telescopes, by measuring how the light from a distant star blinked on and off as it passed behind them.

The star used for the new measurements was 100 times fainter than the star used in the original discovery. The astronomers were able to perform more sensitive measurements than before by observing the star in the infrared region of the spectrum. At these wavelengths, Uranus reflects little sunlight. Thus it appears extremely dark, allowing astronomers a more sensitive look at the star passing behind the faint, narrow rings.

Goldreich also described what is known of the rings of Saturn. Studies of radar waves bounced off the rings, and of reflected sunlight and infrared and radio emissions, have given rise to two competing theories about their composition. One theory holds that they consist of centimeter-to-meter-sized chunks of water ice. The other theory is that they are composed of meter-to-kilometer-sized chunks of meteoric iron.

It was 25 years ago that Olaf Frodsham came to the campus to direct the Glee Club. Since that time, Caltech's director of choral music has built the group into one that is nationally known for its vocal excellence. To honor him on his anniversary, the alumni gave Frodsham a plaque, and a scrapbook containing anecdotes about him that former Glee Club members submitted. At a dinner in his honor, Reuben B. Moulton, BS '57, left, a former Glee Cub member, presents Frodsham with the gifts.

Ramo chair

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seats 415 and is used for musical and dramatic productions as well as lectures.

The Ramo Professorship honors the man who has attained distinction as an industrialist, a scientist, an educator, and a leader in the cultural life of his community. Dr. Ramo was the co-founder of Ramo-Wooldridge Corporation. When Ramo-Wooldridge merged in 1958 with Thompson Products, he became the executive vice president of the combined company, and in 1961 vice chairman of its Board of Directors. In 1969 he was named chairman of its Executive Committee. He also was president of TRW's former affiliate, Bunker-Ramo Corporation, of which he was a co-founder.

As a young scientist working for General Electric, he attained world recognition as a pioneer in microwaves. Before he was 30 he had accumulated 25 patents and was made a Fellow of the American Physical Society and of several other major professional societies.

Dr. Ramo became one of the nation's top experts in guided missiles, first as the director of the Falcon guided missile program for air defense and later as the chief scientist for the nation's intercontinental ballistic missile program. As the leading civilian contributor to this program, he was awarded a special citation of honor by the U.S. Air Force.

He has written several texts that have been translated into several foreign languages and are widely used in universities and by practicing engineers and scientists. He has also authored books on the interaction between technological advance and social and economic problems, including *A Century of Mismatch* and *The Island of E. Cono. and My.* Active in education at Caltech for many years, he teaches a course in business economics and management, designed to help bridge the gap between engineering and business.

A key advisor to the U.S. government on science and technology, he has been a member of the Advisory Council to the Secretary of Commerce, in the Roster of Consultants to the Administrator of the Energy Research and Development Administration, a member of the White House Research and Development Council, and the Secretary of State's Committee on Science and Foreign Affairs.

Dr. Ramo is a founding member of the National Academy of Engineering and is a member of the National Academy of Sciences. He has been named a Fellow of many professional organizations, including the American Philosophical Society, the Institute of Electrical and Electronics Engineers, American Physical Society, American Institute of Aeronautics and Astronautics, the American Academy of Arts and Sciences, and the Institute for the Advancement of Engineering.

Keenly interested in the cultural life of Los Angeles, he is a director and trustee of many philanthropic, cultural, and professional organizations, including the City of Hope, Los Angeles World Affairs Council, and National Symphony Orchestra Association, and is president of the Performing Arts Council of the Los Angeles Music Center.