

# CALTECH NEWS

VOLUME 8, NUMBER 2, MARCH 1974

PUBLISHED FOR ALUMNI AND FRIENDS OF THE CALIFORNIA INSTITUTE OF TECHNOLOGY

*He's here seeking:*

## A faster way to apply the results of research

Sidney Sternberg, who has spent many years in industrial and scientific research management, describes his job as comparable to that of a matchmaker or a marriage broker—but with the problems multiplied a thousandfold.

Sternberg, former deputy assistant director for research applications at the National Science Foundation, has been on campus since last fall as a visiting associate in engineering and applied science. Using Caltech as a base of operations, he has been canvassing industries and research institutions in the western states. His efforts are aimed at developing a program to speed up the process by which results of advanced research at institutions like Caltech are applied to the needs of society.

"The matchmaker deals with a relatively simple system: two people with interests that are complementary or at least compatible," Sternberg said. "What I'm trying to find is a feasible way to match institutions whose interests are not compatible—at least at first glance."

This means, he said, finding some way to unite federally supported research projects at many different institutions and universities with one another, and with the needs of industry; local, state, and federal governmental bodies; public organizations; and consumers.

"In achieving this matching, a very delicate balance must be maintained," Sternberg said. "On the one hand, you have to be sure, whenever you put several institutions together to work toward a common goal, that their accomplishments will also serve separately each

member of the group. But at the same time, you have to make sure that their combined efforts meet the specified objective.

Maintaining such a balance is not a simple problem, but it is one that must be solved, he said, if some of this country's social, environmental, and energy-related problems are to be dealt with successfully.

Specifically, Sternberg's duties at Caltech involve:

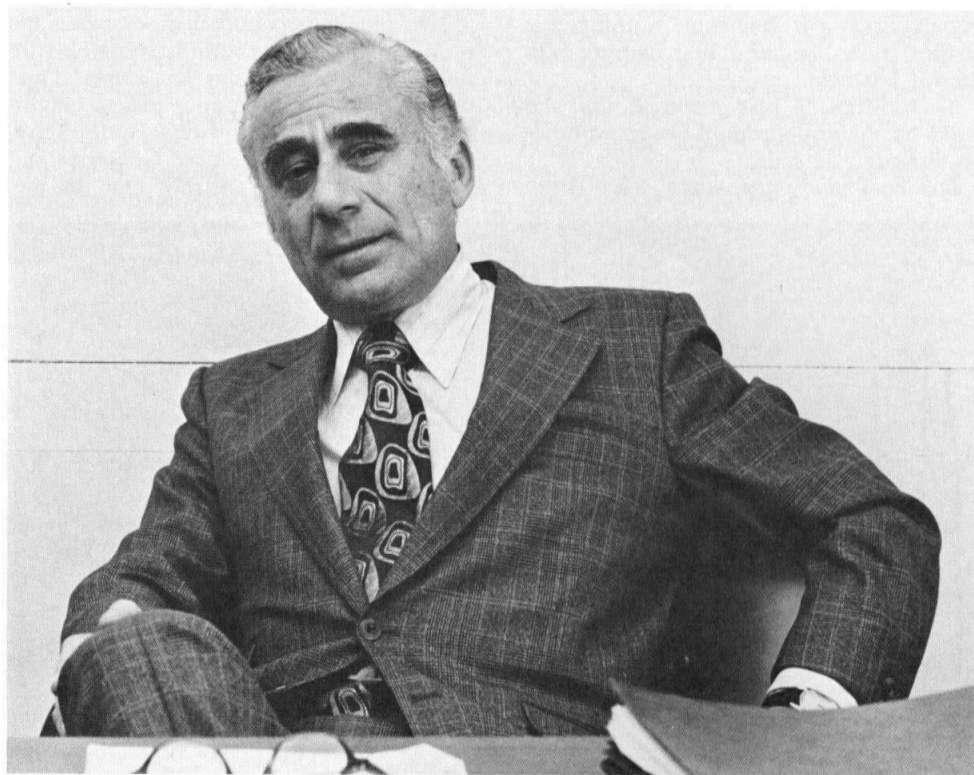
- determining the best ways of speeding up the flow of research results from universities to the industrial and public sector;

- developing methods for establishing close working relationships between universities, industry, and government;
- identifying needs of California and other western states for which technology may provide useful, new solutions;

- relating the technologies being developed at Caltech and other research institutions to problems faced by society;

- working with industry to develop methods of bringing the products of research to the marketplace.

"Working out a system that takes into account all the social and organizational problems inherent in such a process is exceedingly difficult," Sternberg said. "But if we are to react in a sane and rational way to the numerous and pressing national needs that face us now and in the future, then we must try to discover a good, workable system."



Sidney Sternberg—technological matchmaker.

## Advisory Councils to aid campaign efforts

Five regional advisory councils are being organized to assist Caltech's Board of Trustees and administration in efforts to meet the \$130 million goal of Caltech's five-year fund-raising campaign, Caltech at the leading edge . . .

The advisory councils will be an integral part of the fund-raising effort, according to Harry J. Volk, campaign chairman. Volk said each council, consisting of Caltech Trustees, alumni, and other leaders committed to the work of the Institute, will provide advice and leadership in the campaign.

They will guide the presentation of Caltech's story and its needs to potential donors in five regions of the United States: the East, Midwest, Northwest, Southwest, and northern and southern California.

Dean A. McGee, a Caltech Trustee, has been named chairman of the Southwest Advisory Council—the first to be organized. McGee is being assisted by Trustees Leonard F. McCollum and Robert O. Anderson, along with Frank Davis, BS'36; Keith N. Doig, BS'46; Robert E. Foss, BS'32; Ray W. Heggland, BS'49; David C. Lincoln, BS'46, MS'47; Vernon F. Neuhaus; Carl H. Savit, BS'42, MS'43; Sidney Schafer, MS'36; Frank C. Smith, Jr., BS'44; and Stanford G. Stiles, BS'47.

The organizational meeting for the Northern California Advisory Council was held on February 27, and the Eastern Advisory Council is scheduled to meet on April 16 in New York City. Preliminary meetings of the remaining councils are being scheduled.

## Haagen-Smit co-recipient of Tyler Ecology Award

"I'm very pleased; it's always exciting to have one's work recognized," said a beaming Arie J. Haagen-Smit, Caltech's professor of bio-organic chemistry, emeritus, upon hearing that he would receive still another major award for his work on photochemical smog.

Haagen-Smit's most recent honor, as one of three co-recipients of the first John and Alice Tyler Ecology Award, brings more than recognition to the noted scientist; the cash prize is one of the largest of its type in the world. The award money—\$150,000—is shared equally by Haagen-Smit and his co-winners—Maurice F. Strong, executive director of the United Nations environmental program and chief executive of the 1972 Stockholm Conference on Human Environment; and G. Evelyn Hutchinson, professor, emeritus, and senior research associate at Yale University's Osborn Memorial Laboratory, who is a leading authority on the chemistry of the atmosphere.

The awards were announced by California Governor Ronald Reagan at a press conference, and the three distinguished scientists received their prizes at a white-tie banquet held in the grand ballroom of the Beverly-Wilshire Hotel on February 8.

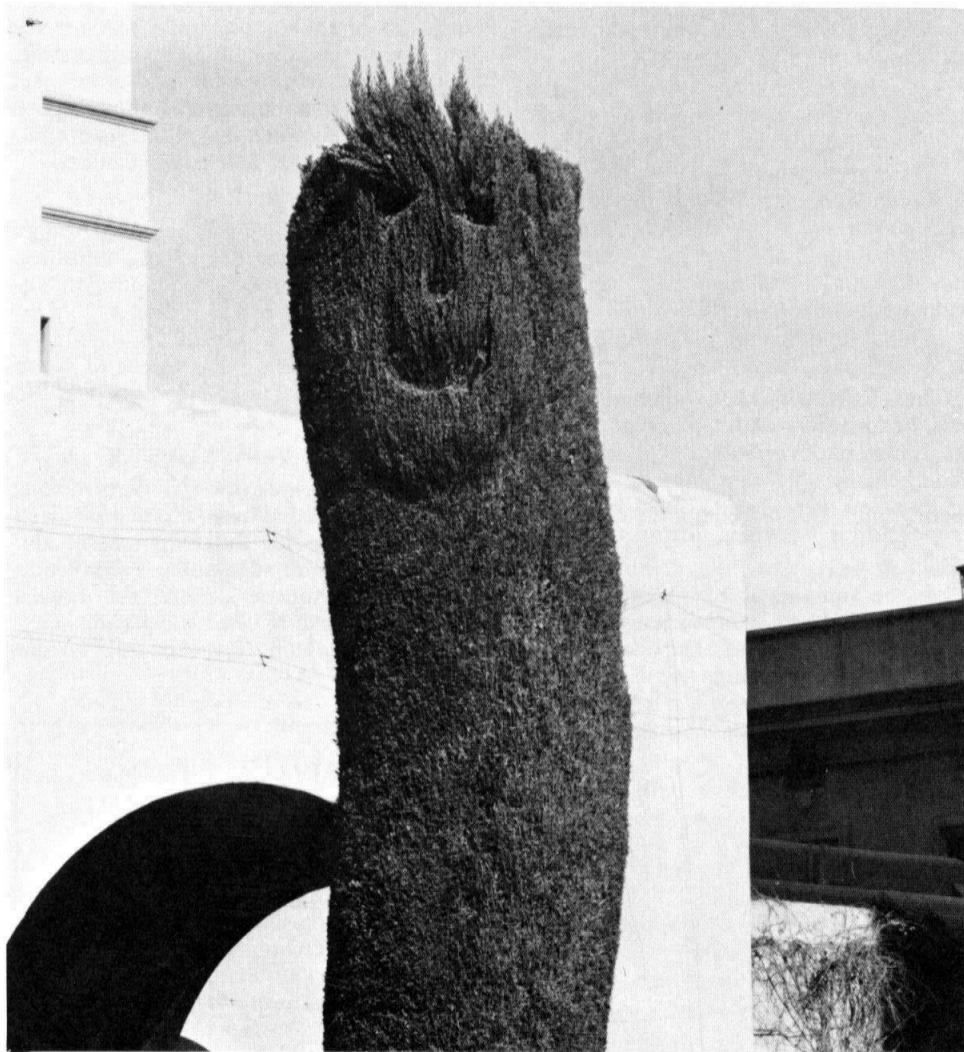
The award was established by the late John Tyler, former co-chairman of Farmers Insurance Group, and Mrs. Tyler. Three hundred entries from 18 countries were received this year. Requirements for nomination include scientific research in the field of ecology during the last ten years, practical application of that research, and worldwide distribution of the findings.

## IEEE honors Humphrey for outstanding work

Floyd B. Humphrey, professor of electrical engineering, has been elected a fellow of the Institute of Electrical and Electronics Engineers, Inc.—an honor reserved for a few persons each year who have shown outstanding expertise in the electrical and electronics engineering fields.

Humphrey was chosen for his contributions to magnetic flux-reversal mechanisms, and for his efforts in improving engineering education through laboratory instruction.

He and the other new fellows will be honored at the annual IEEE banquet in New York City during March.



No, it isn't the Loch Ness Monster, brought to Caltech for observation. Rather, it is one of the Institute's Italian cypress trees after a workman with an artistic spirit tried his hand at a bit of topiary sculpture. His tool was a new piece of air-operated lift equipment, mounted on a truck chassis—purchased with a \$15,000 gift from the S. D. Bechtel, Jr., Foundation. By eliminating ladders and climbing, the equipment will save the Institute about 35 percent in tree maintenance time. On July 1, Caltech will assume responsibility for an additional 242 trees that line the interior campus streets; after that, the lift will be used to maintain approximately 1,677 trees—or more than one for every student at the Institute.

From derrick man to president:

# He learned job from the ground up

by Winifred K. Veronda

Robert E. Foss, BS '32, owes his 38-year career in the oil industry to the Great Depression.

Now president of the North American Exploration and Production Company of Sun Oil, Foss was a mechanical engineering major at the Institute; nothing was farther from his mind than getting into the oil business.

"In college, I just assumed that I'd wind up making automobiles or working on engines," he said.

But Foss graduated when the depres-

ceived several promotions and eventually became general superintendent of Barnsdall's California Division; like many other Caltech graduates, he had made the switch to management. But how did he feel about this new kind of responsibility?

"I liked management," he said, "but then, almost any kind of work is fun."

Foss credits two humanities courses he took at the Institute with helping him in major ways throughout his career. One of these was an economics course taught by Philip Fogg; the other, a philosophy course taught by Theodore G. Soares.

"Economics was entirely new to me

tech; he also sold ads for the student newspaper. He had chosen the Institute initially on the recommendation of his high school science teacher. As a student, he sometimes wondered about his choice.

But his own modest appraisal of his academic success contrasts sharply with the business successes that followed.

From his position as superintendent in the Los Angeles office, Foss went on to become vice president of Barnsdall; when that company was merged with Sunray Oil Company he was transferred to Tulsa, Oklahoma, as vice president in charge of production. When Sunray was merged as Sunray Midcontinent he remained in Tulsa, and in 1963 he was made vice president in charge of manufacturing and marketing.

In 1964 he became president of what was again called the Sunray Oil Company; when Sunray was merged with Sun Oil Company he was named executive vice president in charge of domestic production. Currently he is president of the North American Exploration and Production Company of Sun Oil.

Beside drawing on the insights attained in his philosophy class, how did Foss cope with these many mergers?

"Mergers can be trying if you don't relax," he admitted. "However, I was fortunate because in each instance I had several job offers from other companies. Having a couple of opportunities in my hip pocket did a lot to carry me through. With that security, it became fun to see how a merger was put together—and at the same time, I gained the chance to help a lot of people in the company who had, in some way, helped me."

In these situations—and in many other aspects of his career—Foss has drawn on a problem-solving capacity that he acquired as a student.

"At Tech we learned to push beyond the superficialities to a level where we confronted and grappled with the basic principles in a situation," he said. "We acquired an inner discipline that enabled us to cut right through to the base of any problem. This ability has been a tremendous help in almost every aspect of my work."

Mr. and Mrs. Foss have two sons; one, living in Houston, is a technical representative for a computer firm, and the other, in Sonoma, California, is a self-employed builder of custom-made furniture. Each has two daughters.

These grandchildren were one of the motivations for a home the Fosses built seven years ago on the shores of a lake that is 20 miles outside of Tulsa.

"We gave the architect quite a challenging assignment," Foss said. "We asked him to build a house that would take the place of our home in Tulsa and our weekend cottage, that would become our retirement home—and that would draw our grandchildren for visits."

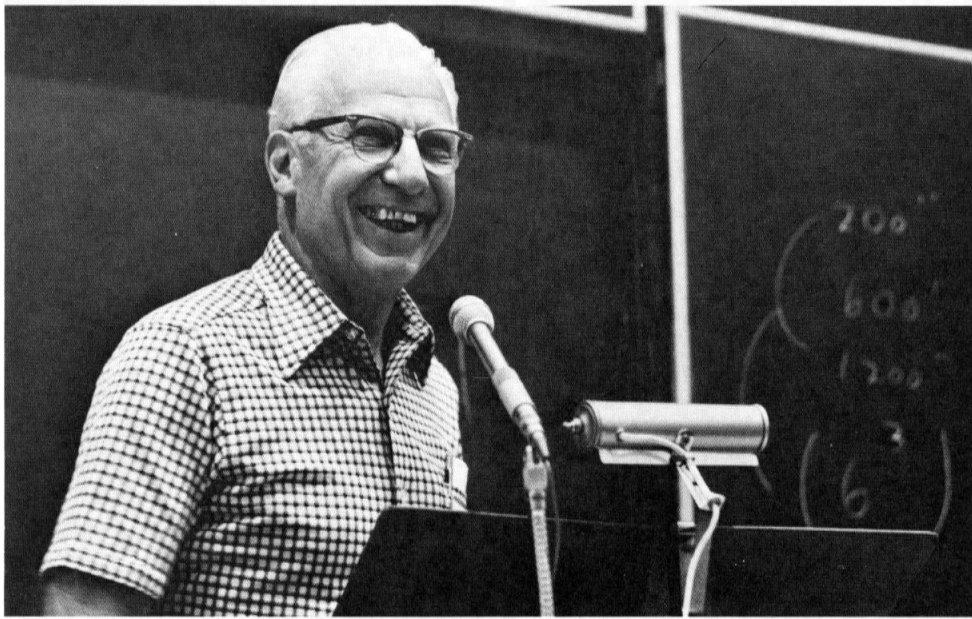
"The architect accomplished these goals beautifully, and two years later I was transferred to Dallas. We kept the home because we knew that I'd be retiring in a few years, and it still lures the grandchildren for visits during the summer."

Foss became involved in alumni activities as an area co-chairman for the 1972-73 Alumni Fund. He was instrumental in organizing a Dallas-Fort Worth Alumni chapter last spring, and this year he is Dallas chairman for the Alumni Fund.

Foss believes Caltech is both the same as and yet different from when he attended. "The similarity is in the excellence of the program," he said. "The difference is in the students; they come to Caltech so much better prepared, because their high school studies have been much more advanced than ours were."

If Foss had to pick a college major all over again, he'd still choose mechanical engineering—and perhaps circumstances would once more lead him into the oil business.

"I don't know where I'd have changed anything along the line," he said. "Your life develops in a certain way, and I don't believe you should go back and say you'd have lived it differently."



Robert E. Foss, BS '32.

sion was at its peak. Only one person in his class had a job waiting as he received his diploma—and that lucky individual wasn't Foss.

So for six months he went back to work on the family farm in what is now Downey; then he was offered a job in the Los Angeles oil fields. For three years he worked as a roustabout, a roughneck, and a derrick man.

"That period in my life was a lot of fun," he said. "I just boomed around from one job to another. I really learned the oil business from the ground up."

Then in 1935 he was offered an oil industry job that allowed him to use his engineering training; he became a junior engineer in the Los Angeles area for Barnsdall Oil Company. Three months later he married Lorene Easley after a courtship that had begun several years earlier; the wedding had been delayed until Foss got a steady job.

For the next five years, Foss worked for Barnsdall throughout the southern California, Bakersfield, and Santa Barbara areas; he moved into the Los Angeles office in 1940.

During the next two years, Foss re-

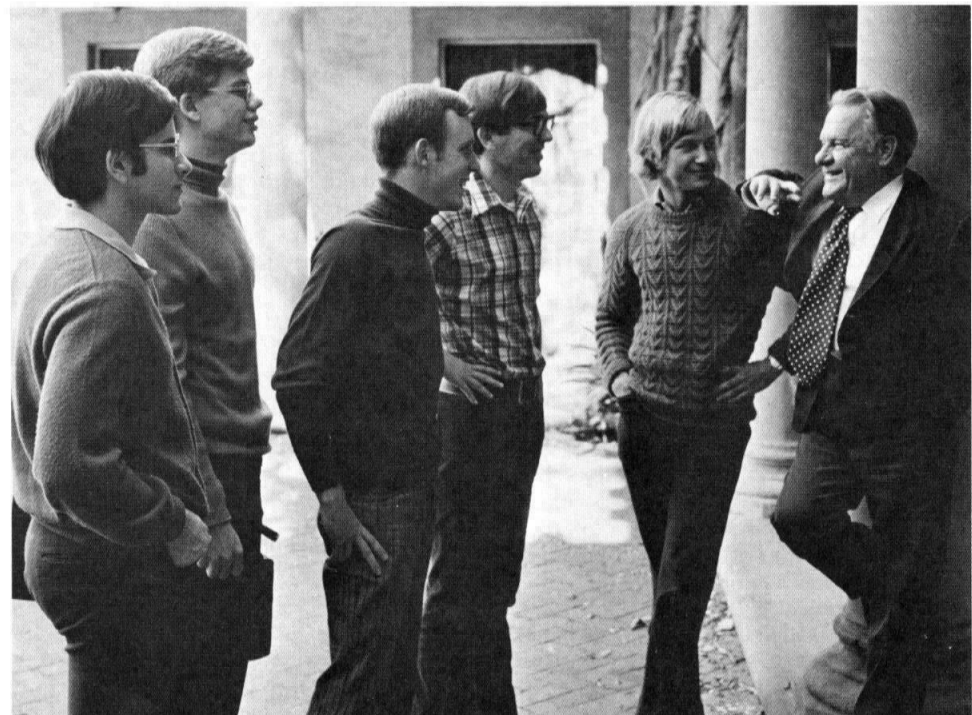
ceived several promotions and eventually became general superintendent of Barnsdall's California Division; like many other Caltech graduates, he had made the switch to management. But how did he feel about this new kind of responsibility?

"The philosophy class gave me an outlook on life that enabled me to accept change and to roll with the punches; this course also has been invaluable. I accept change easily. I've been through three company mergers and I have moved innumerable times, and none of these episodes has been particularly upsetting."

"Both these courses helped a great deal when I moved into management, for the field was so new to me; the idea of working as a manager had been beyond my comprehension a few years earlier."

During his first three years on campus, Foss lived in a variety of houses leased by his fraternity, Gamma Sigma. Prior to his senior year, the first four student houses were completed and fraternities were asked to disband. Members of Foss's fraternity formed the nucleus within Dabney House, and he was the first president.

Foss played a little football and sang in the Glee Club while he was at Cal-



Enthusiastic about Lawrence Durrell's ability to communicate with technologically oriented students, J. Kent Clark, professor of English, suggested that the author, novelist, and playwright be extended an invitation to become a temporary member of the Caltech faculty. On the campus as Andrew W. Mellon Visiting Professor of English, Durrell teaches a course, "Topics in Contemporary Literature," in which he fosters heated philosophical debate and urges students to consider what they, as future scientists, really think about technology. Here, members of the California Tech staff talk with the author: from left—Alan Silverstein, David Callaway, Gregory Simay, Peter Beckman, Robert Kieckhefer, and Durrell.

## W. N. Lacey Lectureship Awarded

Chosen as the seventh recipient of the W. N. Lacey Lectureship in Chemical Engineering at Caltech was R. Byron Bird, Vilas Research Professor of Chemical Engineering at the University of Wisconsin. On January 31 and February 5, Bird presented two lectures on macromolecular hydrodynamics: "From Fromm to Too," about the continuum approach to solving polymer flow problems, and "Dumbbells, Pearl Necklaces, and Other Toys," about kinetic theories of dilute polymer solutions.

This lectureship award is designed to honor outstanding chemical engineers throughout the world. It was established by friends and former students to honor William N. Lacey, professor of chemical engineering, emeritus, and a member of the Caltech faculty for 58 years.

## Hockey Club wins first three games

Caltech's Hockey Club defeated its opponents in all three opening games of the 1973-74 Southern California College Hockey Association season.

Counting two pre-season games, this brings the club's record to 5-0-0 so far.

The club's most recent victory was on January 27 against the UCLA Bruins "B" hockey team, 7-0.

In that game, Tech's Bob Gardiner, Les Durland, and Willie Lennard led the field against UCLA by scoring two field goals apiece. In addition, Lennard and Gardiner scored three assists, while fellow teammates Durland and Ed Beckman had one each.

On January 13, the Caltech Engineers defeated the "B" team from California State University at Northridge, 7-4. On December 2, the Occidental College hockey team went down to defeat by Caltech, 11-3.

In two pre-season openers Caltech defeated Northridge, 3-1, and the Bruins, 6-2.

## ALUMNI EVENTS

### March 1 and 8

*Annual Wine Tasting.* Main dining room and Hall of the Associates, the Athenaeum. Sherry tasting at 8 p.m., followed at 8:30 p.m. by wine lecture and wine tasting. Featured wineries will include the Sonoma Vineyards, Oakville Vineyards, Simi Winery, and Souverain Cellars.

### March 15

*San Francisco Chapter Meeting.* The Engineers' Club, Hong Kong Bank Building, 108 Sansome Street, San Francisco. No-host social hour, 6 p.m.; dinner, 7 p.m. Speaker, James E. Gunn, professor of astronomy, Caltech, "The Shape of Space and the End of Time: How Big the Big Bang?"

### April 8

*Alumni Dinner—Earnest C. Watson Caltech Lecture.* Social hour, 6 p.m., followed by dinner at 6:45, the Athenaeum, and lecture at 8 p.m., Beckman Auditorium. George W. Housner, professor of civil engineering and applied mechanics, Caltech, will speak on "Coping with Natural Disasters."

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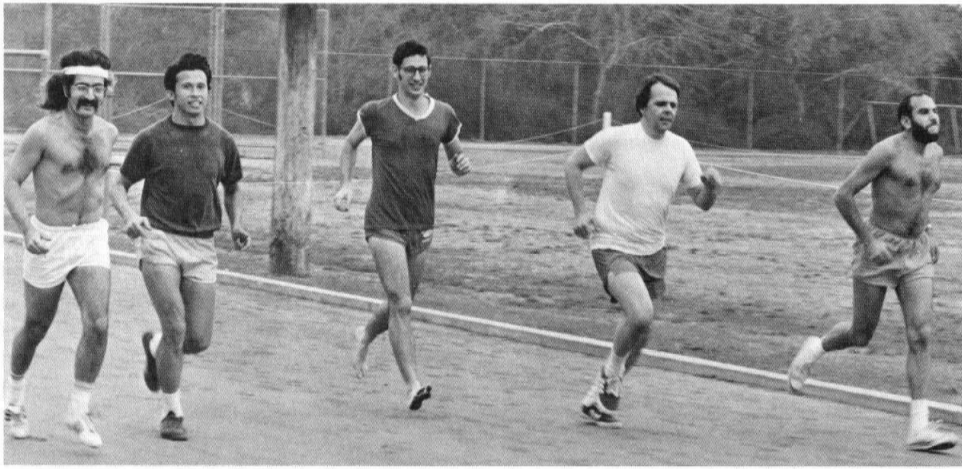
### EDITORIAL STAFF

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*Associate editors:* Bernard Cole, Joy Hays, Kathleen Marcum, Ann Reed, and Kay Walker.

*Photographer:* Floyd Clark.

From science to sports:

# Part-time athletes thrive on campus



No, these individuals aren't members of the Caltech track team, off to run the 50-yard dash. They are part of an enthusiastic group of lunch-break and after-work athletes who use the Institute facilities for everything from basketball to jogging to karate. From left, the runners are: John A. Ferejohn, assistant professor of political science; Armand E. Postma, electronics specialist in the Division of Geological and Planetary Sciences; George B. Levin, graduate student in chemistry; Richard L. Mooney, purchasing agent; and Al A. G. Banks, senior buyer.

by Bernard Cole

What do Harold Brown, David Smith, Robert Christy, Ken Conn, James Morgan, Al Banks, Wilhelm (Willy) Behrens, Robert Sharp, and Harrison Brown have in common?

They are all part of a growing group of what might be called "part-time jocks" that has blossomed on the Caltech campus.

"This interest in sports and athletics is not exclusive to an isolated few," said Warren G. Emery, director of physical education and athletics. "It is an across-the-board interest encompassing undergraduates, graduates, postdoctoral fellows, faculty, secretaries, lab technicians, and

other staff employees. Every department and division on campus is involved."

Institute President Harold Brown, Provost Robert Christy, Al Banks from purchasing, and Willy Behrens, assistant professor of aeronautics, play tennis, as do Peter Goldreich, professor of planetary science and astronomy, and Richard Dean, professor of mathematics.

David Smith, associate professor of English, director of galleries, and master of student houses, and Ken Conn, of the Safety Office, play badminton.

Harrison Brown, professor of geochemistry and of science and government, Robert Sharp, professor of geology, Clair Patterson, senior research associate in

geochemistry, Roger Sperry, professor of psychobiology, and chemistry graduate student George Levin, jog and run.

The other sports aren't left out, either. Herschel Mitchell, professor of biology, Roger Noll, professor of economics, Thad Vreeland, professor of materials science, and James Morgan, professor of environmental engineering science and dean of students, play basketball.

Bradford Sturtevant, professor and executive officer for aeronautics, Robert Dilworth, professor of mathematics, John List, associate professor of environmental engineering science, Edward Hutchings, Jr., director of publications, Daniel Kevles, associate professor of history, Eugene Cowan, professor of physics, and Paul Dimotakis, research fellow in aeronautics, as well as 80-year-old William Smythe, professor of physics, emeritus, swim.

All this participation is very satisfying to Emery, but beyond its traditional function of helping people keep fit, he sees the athletic program at Caltech as having a much more serious purpose—improving and strengthening the "spirit of community" that is unique to the Institute.

"We talk a lot about this spirit and the fact that it exists," said Emery. "But little thought is given to why it exists."

"Of course the commonality of scientific interests plays a significant role in fostering it. But interaction based on science is still a very professional one. Basically, biologists mingle with biologists socially, physicists with physicists, graduate students with graduate students, and undergraduates with undergraduates.

"But there is one place where this

social compartmentalization breaks down, and that's on the playing fields.

"When you're on the court, or on the field, you're not a biologist, or a physicist, or an economist. You're interested in only one thing—the particular sport you're involved in. This is where a professor really gets to know his students, or faculty members from an entirely different area. Lifelong friendships are often started through sports participation."

For these reasons, the interest in sports and athletics on campus is one that Emery does his best to foster.

Physical education classes, open only to undergraduate students on most other campuses, are open at Caltech to graduate students, faculty, and employees on a space-available basis. Instruction is offered in badminton, fencing, golf, karate, modern dance, skiing, scuba diving, swimming, tennis, volleyball, and weight lifting.

There are competitive sports programs open to faculty, graduate students, and employees in basketball, cricket, hockey, lacrosse, rugby, soccer, squash, and tennis. In addition, Emery and his staff work with the Graduate Student Council, which organizes intramural competitions for students, faculty, and employees in softball, touch football, volleyball, and basketball.

Emery said the athletic facilities also are available to individuals for recreational swimming, jogging, basketball, and tennis, among others.

"There is more real interest in sports and athletics on the Caltech campus than at any other educational institution I know of, large or small," Emery concluded. "This interest isn't measured in terms of the number of spectators at intercollegiate games or the amount of alumni support for organized sports. Rather it is measured in active, intense participation in the sports themselves."

## Alumni Board nominates officers

The Board of Directors of the Alumni Association met as a nominating committee on January 22, 1974, in accordance with Section 5.01 of the bylaws. Five vacancies on the board, in addition to the positions of president, vice president, secretary, and treasurer, are to be filled. The present members of the board, with the years in which their terms expire, are:

- Rea A. Axline, BS '31 - 1974
- Stuart M. Butler, Jr., BS '48 - 1975
- William J. Carroll, BS '48, MS '49 - 1975
- Spicer V. Conant, BS '64 - 1974
- G. Louis Fletcher, BS '56, MS '57 - 1976
- John D. Gee, BS '53 - 1976
- Robert B. Grossman, BS '33 - 1976
- Raymond L. Heacock, BS '52, MS '53 - 1976
- James L. Higgins, BS '56 - 1975
- P. Douglas Josephson, BS '65 - 1974
- Richard A. Karp, BS '64 - 1976
- Wayne T. McMurray, BS '45 - 1974
- Richard C. Nielsen, BS '66, MS '67, PhD '71 - 1975
- Leon T. Silver, PhD '55 - 1976
- Arthur O. Spaulding, BS '49, MS '58 - 1974
- Fred A. Wheeler, BS '29 - 1975
- Stanley T. Wolfberg, BS '38 - 1974

The following individuals have been nominated for the terms beginning at the close of the annual meeting in June 1974:

- President — Raymond L. Heacock, BS '52, MS '53, 1 year
- Vice President — William J. Carroll, BS '48, MS '49, 1 year
- Secretary — P. Douglas Josephson, BS '65, 1 year
- Treasurer — Fred A. Wheeler, BS '29, 1 year

- Directors:
- Carole L. Hamilton, PhD '63, 3 years
  - R. L. "Pete" Hawk, MS '51, 1 year
  - Le Val Lund, Jr., BS '47, 3 years
  - Raymond A. Saplís, BS '44, 3 years
  - Richard L. Van Kirk, BS '58, 3 years

Section 5.01 of the bylaws provides that the membership may make additional nominations for directors or officers by a petition signed by at least fifty regular members in good standing, provided that the petition is received by the secretary no later than April 15. In accordance with Section 5.02 of the bylaws, if no additional nominations are

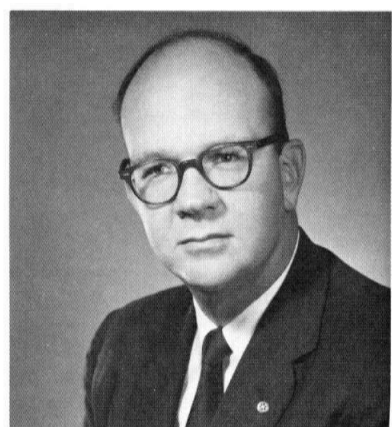
received by April 15, the secretary casts the unanimous vote of all regular members of the Association for the election of the candidates nominated by the board. Otherwise, a letter ballot is required.

The following are biographical summaries about those nominated for directors.



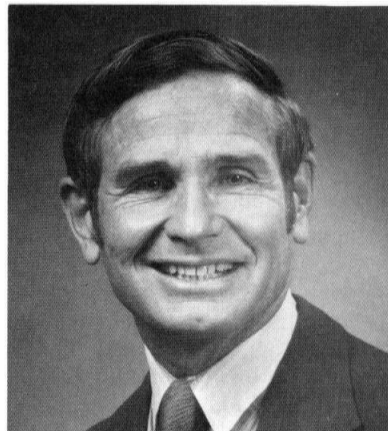
Carole L. Hamilton

Carole L. Hamilton received her BS degree from Colorado State University in 1958; her PhD in chemistry from Caltech in 1963. She was a research fellow at Caltech until 1965 when she moved to Stanford University, first as a research associate and then as a lecturer in chemistry. She returned to Caltech in 1971 and is a member of the technical staff of the Environmental Quality Laboratory. There she is engaged in energy studies, with emphasis on the environmental impact of energy use.



R. L. "Pete" Hawk

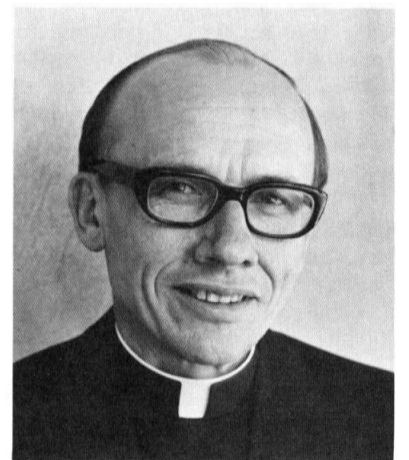
R. L. "Pete" Hawk is president of the R. L. "Pete" Hawk Company, Realtors, in Houston, Texas. A life member of the Alumni Association, he received his BS degree from Southern Methodist University in 1947 and from the University of Texas in 1949. He received his master's degree in meteorology from Caltech in 1951.



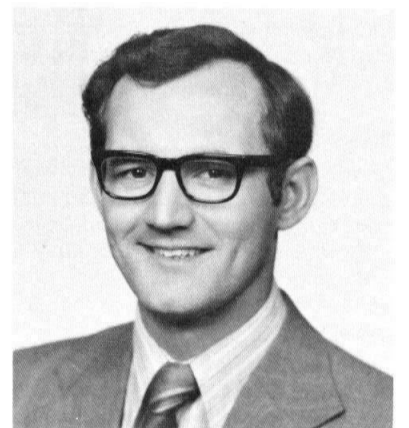
Le Val Lund, Jr.

Le Val Lund, Jr., has worked for the Los Angeles Department of Water and Power since 1947. He is now the assistant engineer of design for the Water Engineering Design Division. Lund received his BS degree in civil engineering from Caltech in 1947, and his MS degree in chemical engineering from USC in 1954. He is a member of the American Society of Civil Engineers. Lund was a member of the Arrangements Committee for the 1964 Alumni Seminar Day and of Seminar Day committees in 1973 and 1974; he is a life member of the Alumni Association.

Raymond A. Saplís is assistant pastor of St. Philip the Apostle Roman Catholic Church, Pasadena. He received his BS degree in geology from Caltech in 1944, and is an alumnus of St. John's Seminary. He is a life member of the Alumni Association. Saplís serves as chaplain to the Roman Catholic students at Caltech. From 1946 to 1954, he worked for the U.S. Geological Survey.



Raymond A. Saplís



Richard L. Van Kirk

Richard L. Van Kirk is a principal in the Management Services Department of the public accounting firm of Arthur Young & Company; before joining that firm, he had spent two years as associate director for development at Caltech and two years as production superintendent for Riverside Cement Company. He received his BS degree in mechanical engineering from Caltech in 1958, and later, a master of business economics degree from Claremont Graduate School. He served on the Program Committee for Alumni Seminar Day in 1964 and 1970, was Program Committee chairman in 1972, and is general chairman for 1974. He also served on the Homecoming Committee in 1970.

# PERSONALS

## 1921

ALFRED J. STAMM writes, "Although I have been retired for five years, I am still doing research on wood on a half-time basis. I have just contributed a chapter for the second volume of Kollmann's book, *Principles of Wood Science and Technology*."

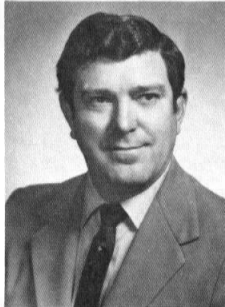
## 1927

EDWARD M. BROWDER, JR., a consulting engineer who worked for the San Francisco Bay Area Rapid Transit District, is now self employed.

ROLAND W. REYNOLDS writes, "I am now retired from the U.S. Civil Service, but to keep out of mischief, have taken up the sale of real estate in the Vista, California, office of 'Century-21'."



George B. Holmes, Jr.,  
BS '38



William F. Jones,  
MS '50

W. LAYTON STANTON, PhD'31, writes, "Retired from the position of director of exploration for Union Oil Company after 36 years. Am now a consulting geologist."

## 1929

J. CLARK SUTHERLAND, MS'30, writes, "Retired from business life and am now an Airstream trailerist. Toured four countries in 1973 and put 29,000 miles on the trailer. With the energy crisis, this mileage will not be duplicated in 1974."

## 1930

ROLAND C. HAWES writes, "I retired from Cary Instruments (a Varian subsidiary), in June 1971. I am now consulting on analytical instrument design, applications, and spectrophotometric methods and techniques."

## 1931

JOHN R. McMILLAN became chairman of the board and chief executive officer of the Reserve Oil and Gas Company on January 1, 1974.

## 1932

THOMAS W. BELL, MS'33, has retired from Texaco Inc., where he was assistant general manager. He is living in San Marcos, California.

## 1934

DONALD R. ROOKE, a former senior civil engineer with Boyle Engineering, has retired. He lives in Nevada City, California.

## 1935

JAMES A. DAVIES, MS'36, writes, "I was promoted this year to general manager of the engineering department of Texaco which conducts worldwide engineering activities for the company."

## 1936

LEONARD F. UHRIG, MS, retired from the Shell Oil Company in February 1974, and plans to become a geophysical consultant in Midland, Texas.

## 1937

PETER H. WYCKOFF, MS, has retired from 28 years of federal service with the U.S. Air Force and the National Science Foundation. He also was associated with the Westinghouse Research Laboratories in East Pittsburgh and the Armour Research Foundation in Chicago for seven years. He is living in Falls Church, Virginia.

## 1938

GEORGE B. HOLMES, JR., has been elected treasurer of Hydril Company. He was Hydril's director of corporate planning for the past five years and is now responsible for all treasury functions. He will continue to play an important role in Hydril's long-range corporate financial planning.

ELBURT F. OSBORN, PhD, resigned as director of the Bureau of Mines, U.S. Department of the Interior, in September 1973 to become First Distinguished Professor at the Carnegie Institution of Washington, D.C.

H. S. SEIFERT, PhD, and his wife spent 15 months at Caltech-JPL while on sabbatical leave from Stanford University where he is professor of aeronautics and astronautics. During his leave he worked on planetary surface locomotion and on solar energy.

## 1939

EDWIN F. SULLIVAN writes, "On October 1, 1973, I transferred from Boise, Idaho to Washington, D.C., to become assistant commissioner for the U.S. Bureau of Reclamation. Formerly, I was in Boise as regional director."

## 1940

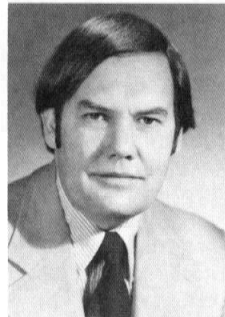
DWIGHT H. BENNETT, a senior project engineer in advanced design with McDonnell Douglas Corporation, writes, "In October 1973, I received the S.A.E. Wright Brothers Medal for a paper prepared jointly with R. P. Johannes of USAF, FDL, which was presented in October 1972."

## 1941

WALTER J. MOORE, a postdoctoral fellow in 1940-41 and formerly a research professor at Indiana University, is chairman of the Department of Physical Chemistry at the University of Sydney in Australia.



Oscar Seidman,  
AE '55



Richard R. Hodges,  
BS '54

## 1942

S. KENDALL GOLD writes, "For about four years now I have been manager of planning and economics for Caltex Petroleum Corporation in New York City. It's a far cry from pure engineering but most challenging, especially in these days of energy shortage and Middle Eastern crude-oil cut-offs."

JOSEPH STERNBERG, MS'43, is a scientific advisor to SACEUR for the Supreme Headquarters Allied Powers Europe. He was previously employed by the Martin-Marietta Corporation in Washington, D.C., as manager of the Department of Research and Development.

## 1944

LEWIS L. GRIMM is head of the Department of Physics and Engineering at Chaffey College in Alta Loma, California.

HORACE M. HIGGINS is a design specialist with Lockheed Aircraft Services Company and is on full-time assignment at the Jet Propulsion Laboratory, explosives and pyrotechnics group. He had been head of the ordnance group for the General Dynamics Corporation.

## 1946

JOSE A. ARGUEDAS, MS, formerly deputy manager of Latin American operations with the Utah Construction and Mining Company in Lima, Peru, is now manager of the construction division of Fluor-Utah, Inc., in San Mateo, California.

DEAN P. STONE is a district manager for Raymond International Inc. in Salt Lake City, Utah.

HARRY L. VINCENT, JR., MS, AE, an executive vice president for Booz, Allen & Hamilton Inc., has moved from Washington, D.C., to Chicago, Illinois.

## 1947

MAX L. WILLIAMS, JR., MS, AE'48, PhD'50, formerly dean of the College of Engineering at the University of Utah in Salt Lake City, is professor and dean of the School of Engineering at the University of Pittsburgh in Pittsburgh, Pennsylvania.

## 1950

WILLIAM F. JONES, MS, formerly president of Gribaldo, Jones & Associates, one of the nation's largest engineering firms, established himself in independent practice last March. Jones specializes in the practice of soil, foundation, and geological engineering. The new firm maintains offices in Sunnyvale and San Mateo, California.

## 1953

R. KEITH BARDIN, PhD'61, writes, "I am presently a staff scientist at the Lockheed Palo Alto Research Laboratories, where I have been for six years. Broadly speaking, I spend most of my time learning to make measurements in the least possible number of picoseconds, while my wife, Tsing, keeps herself amused by doing part-time nuclear physics on the LPARL Van de Graaf. Any illusions of spare time are dispelled by a home in the foothills and two daughters, aged three years and six months, respectively."

## 1954

RICHARD R. HODGES has been appointed president of the Krueger Division, Lear Siegler, Inc. Hodges served as corporate director of Lear Siegler's Department of Advanced Management Techniques for the past three years.

## 1955

RAY A. HEFFERLIN, PhD, chairman of the Department of Physics at Southern Missionary College in Collegedale, Tennessee, writes, "I am rounding out my 18th year at SMC, counting a leave of absence to teach at the University of Chattanooga, several summers doing research at the U.S. Naval Radiological Defense Laboratory, and consulting at several laboratories and industries."

JOHN L. HONSAKER, PhD'65, has been working in the micrometeorological research program at the University of Alberta since 1970.

OSCAR SEIDMAN, AE, retired December 31, 1973, as the director of the Division of Weapons and Dynamics, Research and Technology Directorate, Naval Ordnance Systems Command. He plans to engage in consulting or a similar activity. His daughter, Evalyn, graduated from Oberlin and is employed at MIT.

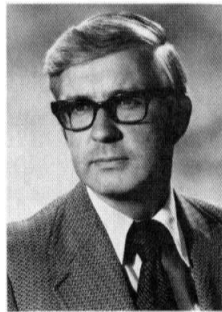
## 1957

DOUGLAS G. RITCHIE has been promoted to the position of operations manager of Ailtech, a Cutler-Hammer Company. Ritchie will be responsible for all production, production control, materiel manufacturing, and quality assurance activities for the company's West Coast operation, in the City of Industry, California. He had been manager of the transducer products department at Ailtech-West.

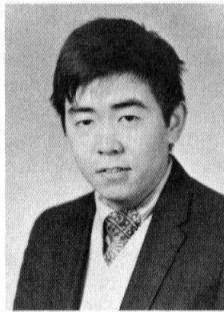
## 1958

FRANK A. ALBINI, MS'59, PhD'62, formerly a member of the technical staff of the Institute for Defense Analyses in Arlington, Virginia, is now in the U.S. Forest Service working at the Northern Forest Fire Laboratory in Missoula, Montana.

PHILIP L. REYNOLDS, MS'59, writes, "As of February 1, 1974, I became a partner in the Los Angeles law firm of Latham and Watkins."



Douglas G. Ritchie,  
BS '57



Ping Sheng,  
BS '67

## 1959

EUGENE R. DOERING, AE, a commander in the U.S. Navy, writes, "Recently I returned from a second trip to Antarctica, including a visit to the South Pole, Amundsen-Scott South Pole Station. Currently detailed from the Assistant Secretary of the Navy (Research and Development) to the National Science Foundation Office of Polar Programs. The first trip to Antarctica included a visit to the Russian station, Vostok, situated atop 12,000 feet of ice."

## 1961

JAMES B. BLACKMON writes, "This past year, I began teaching a course in environment and technology at Cal State University, Northridge—very satisfying. I am also in a full-time position as senior engineer-scientist at McDonnell Douglas Astronautics Company."

RICHARD T. JONES, PhD, writes, "I am currently professor and chairman of the Department of Biochemistry at the University of Oregon Medical School. I will be on sabbatical leave for eight months, beginning January 1, 1974, and will work in the laboratories of Dr. Max Perutz, MRC Laboratories of Molecular Biology, University Postgraduate Medical School, Cambridge, England."

LAURENCE J. SLOSS, a former fellow in the cardiac unit of Massachusetts General Hospital, is now on the staff of the Childrens Hospital in Boston, working in pediatric cardiology.

CLYDE S. ZAIDINS, MS'63, PhD'67, writes, "I am on sabbatical leave this year from my position as associate professor of physics and astrophysics at the Denver campus of the University of Colorado. We now have two children, Paul, aged six, and Sandra, aged three."

## 1964

CHARLES K. GRIMES, PhD, retired from the U.S. Air Force as colonel on March 31, 1973. He is now employed by the Boeing Company—Wichita Division as chief of the applied sciences staff.

P. FRANK WINKLER, JR., writes, "My 'permanent' position is assistant professor of physics at Middlebury College, Middlebury, Vermont, where I have been for several years. However, for the academic year 1973-74 I am on leave at the Center for Space Research, MIT, where I am working with a group investigating galactic X-ray sources."

## 1965

STANLEY A. CHRISTMAN recently married the former Gail Ann Jewell. Christman is lead staff engineer in the production engineering group for the Exxon Company, U.S.A. At present he is responsible for drilling at Prudhoe Bay, Alaska, and in the Santa Barbara Channel.

## 1967

PING SHENG has joined the staff of RCA's physical electronics research laboratory in Princeton, New Jersey. Prior to this, Sheng had been on the staff of the Institute for Advanced Study in Princeton.

## OBITUARIES

### 1921

FRANK C. MAKOSKY on January 14, 1974. He was a retired senior structural engineer and a resident of Alhambra, California.

### 1922

ALFRED C. CATLAND on January 5, 1974. He was retired and lived in Redlands, California.

### 1932

RICHARD N. THOMAS on January 17, 1974. He had been an Episcopal priest in Opelika, Alabama.

### 1938

ROLAND C. STONE on January 17, 1974. He was the owner of the R. C. Stone Company in Alhambra, California. He is survived by his wife, Barbara; his son, Michael Stone of Las Vegas; and his daughter, Kathy Cox of Lackland Air Force Base, Texas.

### 1940

JOHN C. HARPER on January 1, 1974, while assisting at the scene of an automobile accident near Placerville, California. He was professor of agricultural engineering, emeritus at UC Davis. He is survived by his wife, Jeanette; his son, Donald J. Harper of Berkeley; and his daughters, Mrs. Carol Addicott of Edmonton, Alberta, and Mrs. Allison Goss of Davis.

### 1942

PHILIP A. SHAFFER, JR., of cancer on January 14, 1974. He was a consultant in Pasadena. He is survived by his wife.