

## Professorship to honor

### Arnold Beckman

During a rich and fruitful association that has encompassed 56 years, Arnold O. Beckman, PhD '28, has known Caltech as a student, alumnus, faculty member, trustee, and donor. Now the Institute is planning a continuing tribute to his achievements and his service by establishing the Arnold O. Beckman Professorship of Chemistry.

A committee of his friends, colleagues, and former students has been organized at Caltech to collect the \$1 million needed to endow the professorship. Committee member R. J. Munzer — speaking on behalf of William F. Ballhaus, president of Beckman Instruments and committee chairman — made the announcement at the annual black tie dinner of The Associates.

In honor of this special occasion, a bronze bust of Dr. Beckman was presented at the dinner. The bust, by sculptor Judith Bland, will be placed in Beckman Auditorium as a symbol of the respect and affection for Dr. Beckman from the Caltech community.

First entering Caltech as a graduate student in 1923, Beckman earned his PhD degree in photochemistry in 1928 and then stayed on at the Institute as an instructor. Here, in 1935, he developed the highly successful pH meter, and in 1940 he left the Institute to devote full time to the development of scientific instruments. Today his company, Beckman Instruments, produces broad and growing lines of analytical instruments, fine chemicals, and electronic components.

Beckman, the first alumnus to be elected to Caltech's Board of Trustees, has been a member of the Board for 26 years. After serving as chairman from 1964 to 1974, he was named chairman emeritus. A life trustee, he continues to serve active-

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## Timing chemical reactions



Measuring the rates of very fast chemical reactions, Ahmed H. Zewail (center) manipulates a laser that generates ultra-short pulses of light. Zewail, associate professor of chemical physics, uses the laser to determine the time it takes molecules to rotate in solution and for energy to be transferred from one molecule to another. The research is yielding insights into how energy is transferred and how it distributes itself within a molecule, and is part of an overall effort in Zewail's lab to induce chemical reactions by using lasers to selectively break the chemical bonds that hold large molecules together. The work has applications for the development of solar energy concentrators. With Zewail are graduate student Dave Millar and research fellow Ray Robbins.

## EQL awarded \$350,000 grant

Caltech's Environmental Quality Laboratory has been awarded a \$350,000 grant by the Andrew W. Mellon Foundation of New York to help finance a three-year research program on the control of hazardous substances in air and water. The research program will focus on issues of national significance; some case studies will be drawn from the southern California area.

The work will be carried out by an interdisciplinary group of Caltech environmental and chemical engineers and social scientists. Some of their research tasks will involve:

- A study of the sources and fates of hazardous trace contaminants that enter municipal sewers and are ultimately discharged into the ocean.

- A preliminary assessment of unregulated airborne trace contaminants, using Los Angeles air pollution models already developed.
- A case study of exposure of laboratory workers to hazardous substances, in comparison to exposures in the natural environment.
- Potential contamination of groundwater supplies by urban runoff and reclaimed wastewater that are returned to the ground rather than routed out to sea.
- An analysis of long-term risks compared to benefits of the use of certain chemicals, and a study of alternative regulatory approaches and economic incentives.

"Public and scientific awareness of the problems of toxic chemicals in our environment has grown enormously in the past few years, as have improved measurement techniques," said EQL Director Norman H. Brooks, the James Irvine Professor of Environmental and Civil Engineering at Caltech. "A number of factors suggest that toxic chemicals will be of growing concern for a long time. We lack sufficient understanding of all the physical, chemical, biological, and physiological processes that ultimately affect humans and ecosystems. The pathways of toxic chemicals through the environment are often very complex, and this makes regulatory and ethical problems difficult to solve."



This bust of Arnold O. Beckman was presented at The Associates' black tie dinner and will be placed in Beckman Auditorium as a symbol of the Caltech community's affection for its benefactor. Viewing the bust are Dr. Beckman, Mrs. Beckman, R. J. Munzer, and Caltech President Marvin L. Goldberger. Munzer represents a committee to endow the Arnold O. Beckman Professorship of Chemistry.

## Mettler on "Cargo Cult America"

Like the natives of Melanesia during World War II, Americans are caught up in a cargo cult mentality as they anticipate instant solutions to problems without real work and in ignorance of cause and effect. So said Ruben F. Mettler (BS '44, MS '47, PhD '49) to fellow members of The Associates when he spoke on "Cargo Cult America." Mettler is chairman of the board and chief executive officer of TRW Inc.

More than 450 guests attended the annual black tie dinner of The Associates in November at the Beverly Wilshire Hotel where Mettler said that our society is "guided by myths and misunderstandings and false

assumptions as bizarre and as far from reality as those of the cargo cultists in the southwestern Pacific."

A cargo cult, he explained, involves a "massive attachment to the belief that great wealth and material riches will soon arrive in the form of a special cargo of goods from supernatural sources and will make everyone instantly rich and fully gratified without effort." He said many cargo cults were born among people of Melanesia during and after World War II as they saw riches drop out of the skies unexpectedly via American troops, or arrive in large ships.

"Without any understanding of  
*continued on page 2*



## John Roberts named Institute provost

John D. Roberts, Institute Professor of Chemistry at Caltech, has been named vice president, provost, and dean of faculty effective January 1. He succeeds Robert F. Christy, professor of theoretical physics, who has served as vice president and provost since 1970. Christy also served as acting president in 1977 and 1978.

An internationally known organic chemist, Roberts first came to the Institute in 1953 as professor of organic chemistry. In 1972 he was named Institute Professor of Chemistry for distinction in his field and for service to Caltech. From 1963-67 he was chairman of the Division of Chemistry and Chemical Engineering and he was acting chairman in 1972-73.

Roberts, 61, has held teaching and research posts at UCLA, Harvard, MIT, Stanford, and Ohio State University. He holds AB and PhD degrees in chemistry from UCLA. A member of the National Academy of Sciences, he has received the American Chemical Society Award in Pure Chemistry, the Roger Adams Medal, the Richard C. Tolman Medal, the Michelson-Morley Award, and the James Flack Norris Award.

The author or co-author of six

books and more than 400 technical papers, he holds honorary degrees from the University of Munich and Temple University, and he has served on advisory panels for the National Science Foundation and the National Academy of Sciences.

Known for his ingenious study of



John D. Roberts

the way atoms in molecules reorganize during chemical change, Roberts currently is involved in research concerning the mechanisms

of organic reactions, the chemistry of the class of chemical compounds with small-ring structures, and the applications of nuclear magnetic resonance spectroscopy to organic chemistry and biochemistry.

## Dix honored for geophysics contributions

Professor of Geophysics, Emeritus, Charles H. Dix has been awarded the Maurice Ewing Medal, the highest honor conferred by the international Society of Exploration Geophysicists (SEG).

The medal is awarded occasionally to an individual deserving special recognition for a lifetime of major contributions to the advancement of the science and profession of exploration geophysics. The solid gold medallion was cast in memory of the late Maurice Ewing for his revolutionary contributions to oceanography and the earth sciences.

## Don't expect magic solutions, Mettler says

*continued from page 1*

the modern production, distribution, transportation, or communication which lay behind this plethora of goods, the cultists attributed the cargos to what they could directly observe, and tried ritual imitation of the white man's behavior to get cargo," he said. "They cleared airplane landing strips, built docks and wharves, wore GI clothing, and imitated the habits of soldiers, perhaps marching around in groups or sitting around tables with vases of flowers and drinking from tall glasses."

Mettler then suggested that "a kind of cargo cult mentality exists in America today" as people expect instant and painless solutions to problems and refuse to acknowledge their seriousness. For example, he said many of those who believe in a genuine shortage of petroleum expect new supplies to magically appear or spectacular breakthroughs in energy research to be achieved. "When these things don't happen, they get angry, charging that someone—big oil, or the government, for example—has a solution that would bring us inexpensive supplies of energy, but that they are too evil to share the secret with the American natives."

Mettler believes the origins of this mentality in America are to be found in the cultural and social stresses in our society over the past 50 years: limitations to natural resources, the possibility of nuclear destruction, insight concerning the fragility of our life-supporting physical environment, and the affluence of industrialized societies in contrast with the poverty elsewhere in the world.

"Some observers call our time a turning point in history comparable to the transition from the Middle Ages through the Renaissance to modern times," he said. "All this has been strong medicine for the American people and it is little wonder that they have constructed some myths based on a hope for a release from stress. It makes their interest in magical solutions something to behold with compassion, not anger."

Mettler sees changing the cargo cult mentality as a difficult problem. But he says that "perhaps being more aware of the emotional origins of much contemporary thinking may be helpful in enabling us to replace immediate consumption with long range effort."

"Certainly men and women trained in science and engineering can be publicly more outspoken against unrealistic myths, can seek more in-depth examination of underlying assumptions, and can help others see fewer devils in each hard problem," he said.

Mettler also suggested welcoming the participation of minorities in the benefits of our society and helping underdeveloped nations to understand that "hard work, investment and risk lie behind the cargo."

Mettler concluded by lauding the contributions that the Caltech community has made and must continue to make to build a better society via future-oriented thinking and problem solving.

## Sperry shares coveted Lasker Award

Caltech psychobiologist Roger W. Sperry, whose research has led to a better understanding of how the two hemispheres of the brain function, is winner of a 1979 Albert Lasker Award.

Sperry, the Hixon Professor of Psychobiology, shared the coveted honor with three other researchers — an American and two Britons. The Lasker Award ranks just beneath the Nobel Prize in prestige within the scientific community. Twenty-nine previous winners have gone on to win Nobel Prizes.

Many scientists believe that Sperry's research will strongly influence our understanding of mental and psychosomatic disease and perhaps trigger new approaches to educating children. His most famous work has

dealt with the discovery that man has two distinct brains inside one skull and that there are two parallel streams of consciousness in the two separate halves of the brain.

Furthermore, he discovered that each half of the brain has its own distinctive form of intellect. The left is highly verbal, mathematical, analytical, and logical. The right is dominant in spatial perception and seeing and recognizing objects. It also appears to be superior in certain types of non-verbal communication, such as music.

In the normal brain, Sperry discovered, the two hemispheres communicate with each other continuously, guiding the individual harmoniously. A lack of harmony between the two halves can lead to

mental problems in an individual, Sperry found.

Sperry has contended that our present education system discriminates against development in a growing child of the capacities that are dominant in the right brain — non-verbal, nonmathematical kinds of activity and creativity.

Also named as Lasker Award winners were Dr. Walter Gilbert of Harvard and Dr. Frederick Sanger of Cambridge, England, for arriving independently at methods of determining rapidly the chemical sequence of the genetic material DNA, and Sir John Wilson of England, organizer of programs for prevention of blindness in underdeveloped countries. Each award carries a \$15,000 cash prize.

## Kevles lauded for "The Physicists"

Daniel J. Kevles, Caltech professor of history, has been awarded the National Historical Society's 1978 Book Prize for *The Physicists: The History of a Scientific Community in Modern America*. The \$1,000 cash prize is given annually for the best volume of American history that is the author's first published book.

Kevles' work was published by Alfred A. Knopf in 1978 and appeared as a Vintage paperback in 1979. It covers three related aspects of the development of physics in the United States: the intellectual history of the discipline for the past 100 years, the story of physicists as human beings and their roles in history, and the relationship between physics and the institutions in business, government, and philanthropy that shaped the history of science by supporting research and education.

## Riding out the energy crisis



In a speech on our options in the energy crisis, Caltech President Marvin L. Goldberger alluded to the contribution that mopeds can make to an overall solution. A man who practices what he preaches, Dr. Goldberger often rides his own moped around campus and in the neighborhood.



# Performing arts premier

The time may come when the program notes for a Broadway play include this biographical fact about the leading man: "Graduate of the California Institute of Technology with a degree in physics."

Probably this is fantasizing too far into the future. What is for certain right now is that a new performing arts program has been established by the Division of the Humanities and Social Sciences as part of the Institute's growing list of non-academic instructional activities. The operations are directed by Shirley Marneus, a staff member with nine years' experience as a director in Caltech's professional resident theater company, Spectrum Productions.

Division chairman Roger Noll says the new program grew out of the administration's determination to broaden and enrich the humanities offerings, and from the requests of people from all over campus for Caltech to have more of the kind of theater productions that in the past have been limited to the musical that is presented each spring.

"Like the musical, which has always been popular, the productions of the performing arts program will be cooperative efforts of the entire Caltech community—students, faculty, staff, alumni, and their families and other friends," Noll says.

Marneus, who has a master of fine arts degree in directing (and was a librarian in the division's Public Affairs Room), is incorporating

broadly from the academic and extracurricular on campus. The plays may involve experts in classic and ancient literature and drama; dance groups, fencing classes, music groups, the orchestra, and others.

All of these elements were combined this summer in the initial offering of the new program—a garden-setting romantic comedy, *The Romancers*, which was performed in Dabney Gardens to sellout audiences for the two weekends of its run.

Later this year Marneus hopes to present a premiere performance of an original musical score by Caltech alumnus Greg Simay, BS '75, APh, based on Emily Bronte's *Wuthering Heights*, and interwoven with choreography and readings from the book.

One of Marneus's goals for the new program is simplicity and flexibility of presentation. "We want to do productions that can be staged in different environments—on the steps of Beckman Auditorium, or on the bridge over Millikan Pond, or in the Athenaeum patio, or on off-campus locations for alumni and other groups," she says.

Among the "portable" dramatic ideas that Marneus may introduce is *Conversations with 19th-Century Women*, similar to Steve Allen's "Meeting of Minds." Another is a formal reading of *King Kong*, with the cast in tuxedos and King Kong in a gorilla-head mask. And the dates have been set for a production of



The first offering of Caltech's performing arts program, a production of "The Romancers," played to sellout audiences in Dabney Gardens. Starring in the leading roles were Jeff Eriksen, a graduate student in engineering science, and Stanzi Royden, a senior in engineering.

Brecht's *The Caucasian Circle* in the spring of 1980.

Later Marneus will set up a series of workshops in supportive skills: play-reading, scriptwriting, makeup, set construction, directing, basic acting, stage movements.

"We've started with enthusiasm and we'll develop expertise," Marneus says.

In addition to the activities of the Caltech Players, Spectrum Players will continue its full schedule of shows. Spectrum was formed in 1971 to offer the academic community a different kind of professional theater program than is currently available—one with an emphasis on classic plays and others of literary merit that are rarely staged in the popular theater.

## Beckman Professorship announced

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ly in that capacity.

But his contributions to Caltech go far beyond his work as a student, faculty member, and trustee. In the early 1960s, he and Mrs. Beckman presented Caltech with Beckman Auditorium, a meeting place for the campus and a binding force for Caltech and the surrounding community. The Beckmans also made possible the Mabel and Arnold Beckman Laboratories of Behavioral Biology. Research in these laboratories is providing new information about why man acts as he does.

Munzer told the group that Caltech is proud to have had the benefit of Beckman's concern, time, effort, and generosity. "The Arnold O. Beckman Professorship of Chemistry will enable each donor to honor him for his wisdom and support," he said.

Members of the committee to endow the professorship include chairman William F. Ballhaus, Mrs. Anna Bing Arnold, R. Stanton Avery, E. H. Clark, Jr., Robert R. Dockson, Lee A. DuBridge, J. R. Fluor, Harry B. Gray, Fred L. Hartley, Robert C. Hill, Jack K. Horton, Earle M. Jorgensen, John B. Kilroy, Frederick G. Larkin, Jr., Carson R. McKissick, Henry T. Mudd, R. J. Munzer, William H. Pickering, Robert F. Six, H. Russell Smith, Lowell Stanley, and Harry J. Volk.

## Industrial Relations Center birthday



California was still primarily an agricultural community when the Industrial Relations Section of Caltech was founded in 1939. Fewer than 280,000 people in the state were engaged in manufacturing, and companies with more than 500 people were considered "big business." Today the center conducts over 100 management seminars a year for executives, and last year it educated more than 2,000 program participants in various aspects of management. This fall its supporters and staff commemorated its 40-year history with a program of management lectures and a dedication of its building to the late Robert D. Gray, director from 1940 to 1977. Admiring a portrait of Gray, above the Center's stairway, are Victor Veysey, the Industrial Relations Center director; Sylvia Landa, president of the Personnel and Industrial Relations Association; and Earle M. Jorgensen, chairman of the Caltech Board of Trustees' Committee on the Industrial Relations Center.

## Jack McKee: In memoriam

Jack Edward McKee, Caltech professor of environmental engineering, died October 22 after a long illness. Born in Pittsburgh on November 9, 1914, he joined the Caltech faculty in 1949 and was named a full professor in 1956.

Dr. McKee, widely honored for pioneering research on water quality and waste water treatment, was elected to the National Academy of Engineering in 1969. He received the Clemens Herschel Award in hydraulics from Harvard University, the Desmond Fitzgerald Medal of the Boston Society of Civil Engineers, and the Rudolf Hering Medal in sanitary engineering and the Karl Emil Hilgard Prize, both from the American Society of Civil Engineers.

In 1970 he was appointed chairman of the National Research Council's Committee on Air Quality Management, and in 1974 he was named to the California Council for En-

vironmental and Economic Balance, which brought together individuals from a large number of disciplines, viewpoints, and interests to work toward balance between environmental and economic considerations in California's growth. He was partner and senior vice president in the engineering consulting firm, Camp, Dresser, & McKee, Boston. The Pasadena firm CDM is its affiliate.

A past president of the Water Pollution Control Federation, Dr. McKee earned his BS degree in civil engineering from the Carnegie Institute of Technology and his MS and ScD degrees in sanitary engineering from Harvard.

Among his campus activities, he particularly enjoyed playing the banjo in the Caltech Dixieland Jazz Band, a group of faculty and students that performs for Caltech functions, and before his death he requested that the band play at his memorial service. Among the pieces played by the band, that McKee had requested, were "When the Saints Go Marching In" and "Please Don't Talk About Me When I'm Gone."

Dr. McKee is survived by his wife, Dorothy, and three children, Douglas Edward McKee, Richard C. McKee, and Katherine Alice McKee. Contributions to his memorial fund may be made through Joseph A. Farmer, Office of Memorial Funds, 1-36, Caltech, Pasadena 91125.

## Pranksters' reunion

There's never been a reunion like this one. A firm date is still to be chosen, but April 1980 has been set for a reunion of Caltech pranksters on the campus. All alumni who participated in pranks—from the Rose Bowl stunt to the F-84 caper to the McDonald's contest entries—will be invited to reminisce and to give current students the chance to listen and learn. If you participated in one of the classic pranks, please notify the Alumni Office so you'll receive an invitation.

### CALTECH NEWS

Vol. 13, No. 9

January 1980

Issued nine times a year (Oct., Nov., Dec., Jan., Mar., Apr., May, July, and Aug.) and published by the California Institute of Technology and the Alumni Association, 1201 East California Blvd., Pasadena, California 91125.

Second class postage paid at Pasadena, California.

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USPC 085-640

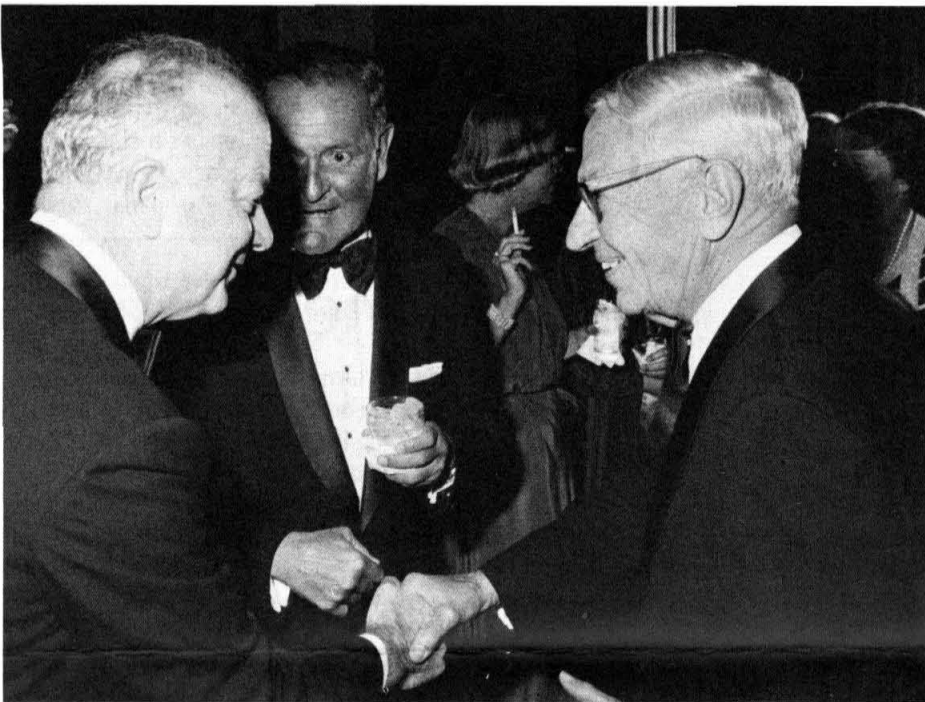




Dr. and Mrs. Henry L. Lee, Jr., with Mr. and Mrs. Ross Blakely, guests at the event. (Lee is the president of The Associates.)



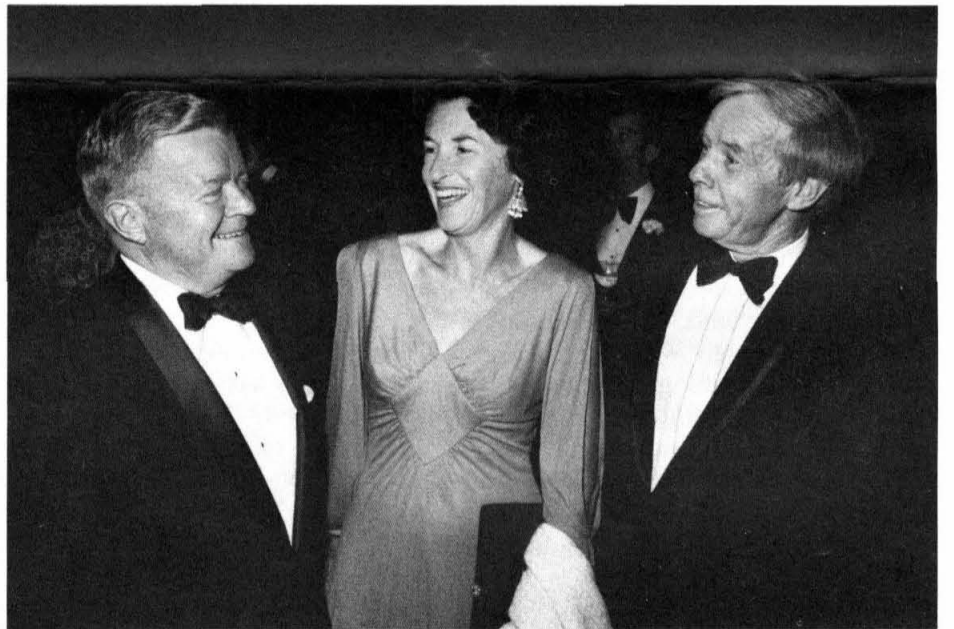
Arnold O. Beckman greets Dr. and Mrs. Ruben F. Mettler.



Emrys Ross, H. Warner Griggs, and Lee A. DuBridge.



Gen. Charles H. Terhune with Mrs. William B. Clayton and Mrs. Emrys Ross.



Mr. and Mrs. Joseph W. Lewis with Victor V. Veysey.



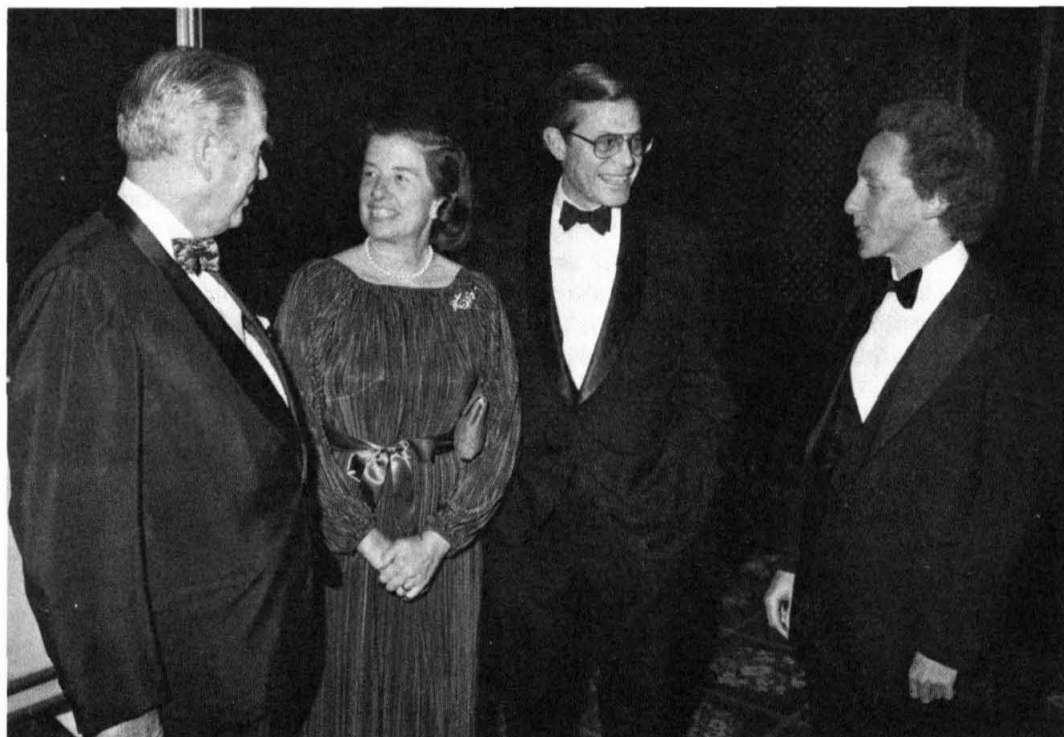
Four Caltech student musicians entertained at The Associates' dinner. The students (with Caltech artists-in-residence Delores and William Bing, fourth and sixth from left), are Leslie Deutsch, Thomas Howell, Natalie Gluck, and Fan-Chia Tao.



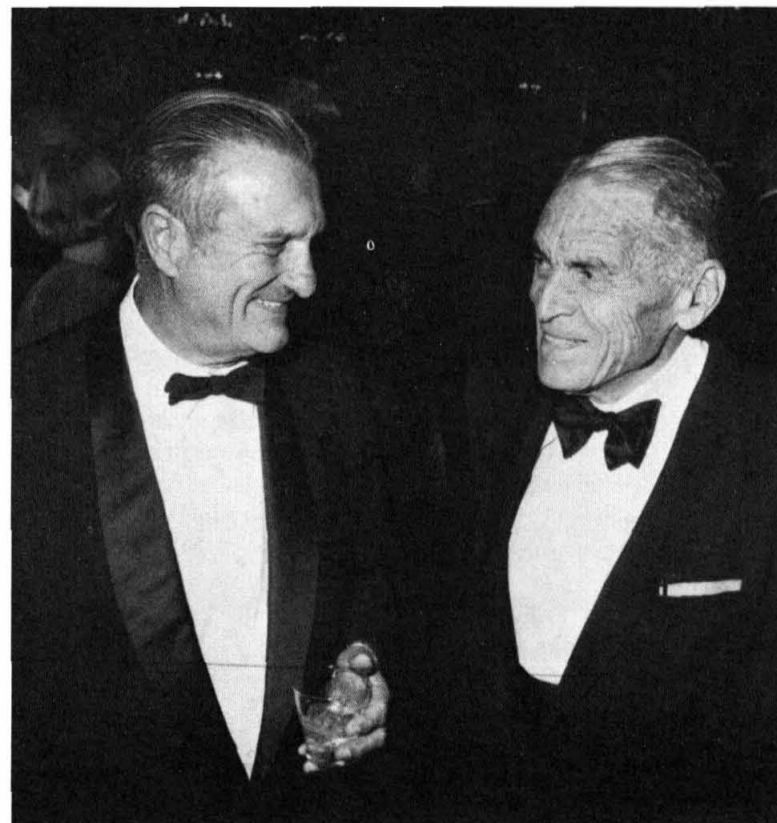
Mr. and Mrs. Louis Meyer, Jr., with Caltech President Marvin L. Goldberger.

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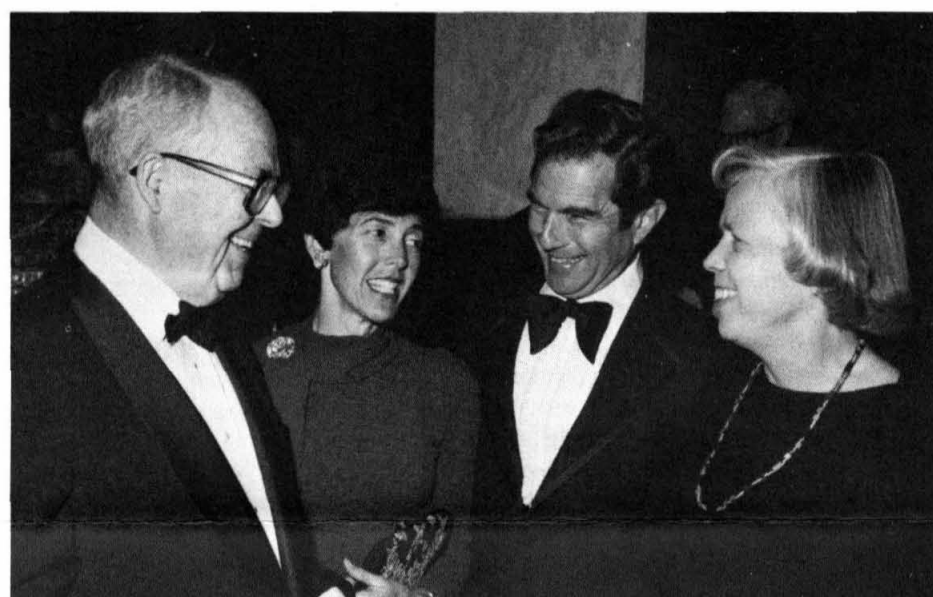
Mr. and Mrs. Robert Huffman, new members of The Associates, with Walton A. Wickett and Dr. Thomas J. Buckholtz, Associates members from the San Francisco Bay area.



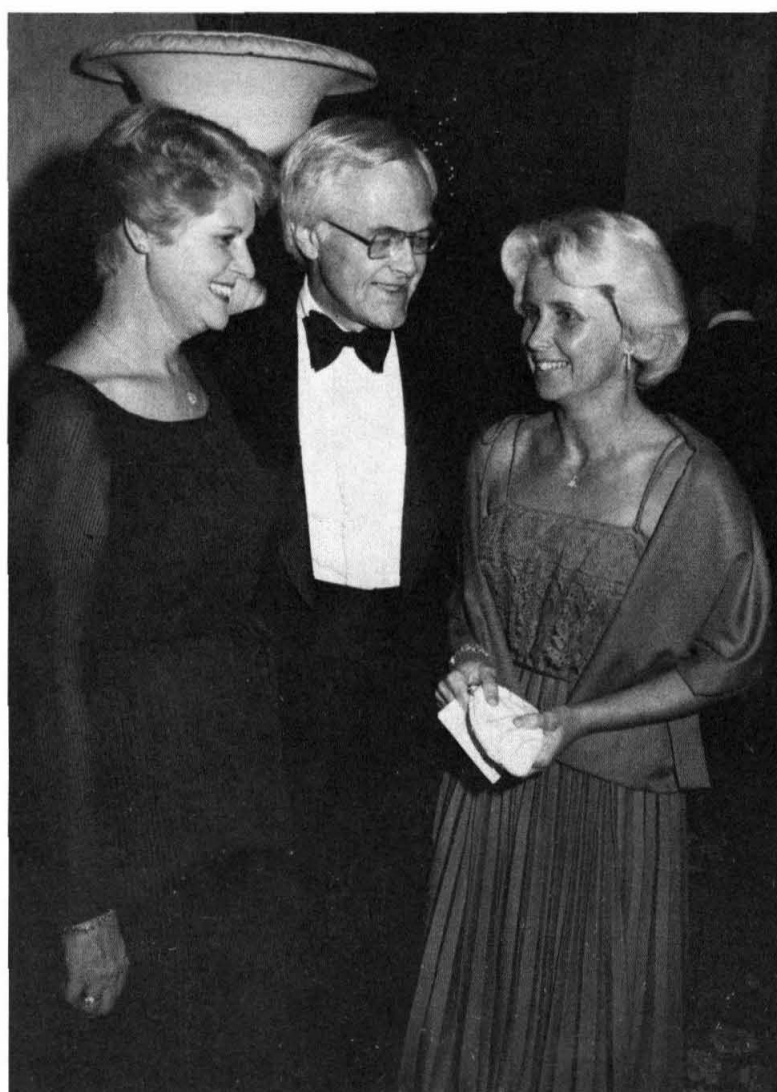
Ernest M. Clark, Jr., with Lowell Stanley.

## red at annual dinner

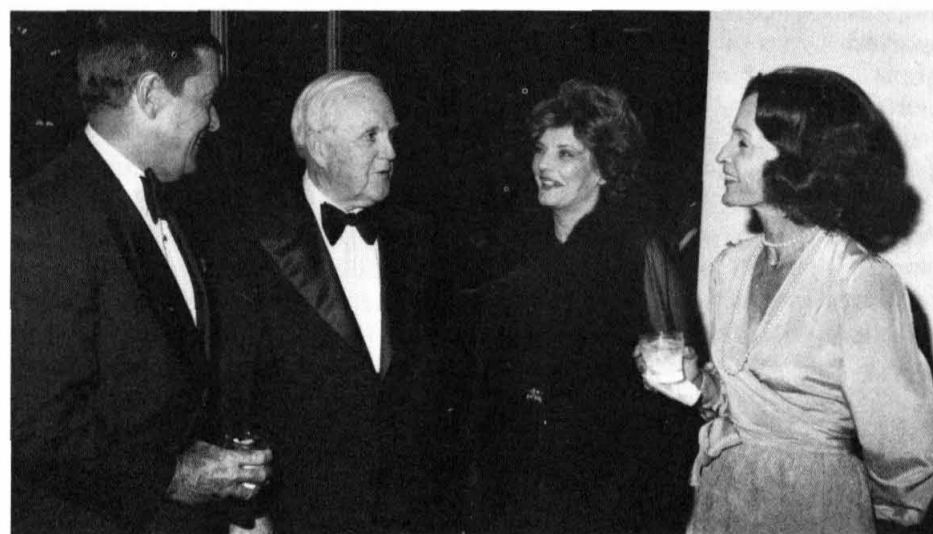
Over 450 members of The Associates, their guests, and members of the Caltech faculty and the Board of Trustees gathered at the Beverly Wilshire Hotel in November for The Associates' annual black tie dinner. Dr. Henry L. Lee, Jr., The Associates' president, welcomed the group, and Rudy Munzer, chairman of the Board of Petrolane, announced the establishment of the Arnold O. Beckman Professorship of Chemistry. After dinner the guests listened to Ruben F. Mettler talk about "Cargo Cult America" (see stories on page 1).



Hayes and Berneice Anglea with their guests, Mr. and Mrs. William Goodglick (center).



Mr. and Mrs. William M. Marcussen, guests at the event, with Mrs. Eugene R. Wilson (right).



Mr. and Mrs. Harry J. Volk (center) with Mr. and Mrs. Dickinson C. Ross, guests at the dinner.



Dr. Aerol Arnold with Mark Taper (right) and his guest, Mrs. Sally Cobb.



## Gross National Products

# Sound-wise student makes better music

By Winifred Veronda

You can't call up your broker and ask him to buy stock in Gross National Products and that's too bad, because if you could you'd probably be making a wise investment. You may be able to do so in a few years, but right now, GNP operates out of a small, student shop a few blocks from the Caltech campus, and most of its assets are in the head of its founder, a 21-year-old junior named Bill Gross.

A mechanical engineering major from Sherman Oaks whose father is an orthodontist, Gross discovered when he was a freshman that if you can build a better stereo speaker, there are plenty of audio buffs who will beat a path to your door. Now, after perfecting his technology and selling 560 speaker sets that he assembled by hand, he can't wait to finish his degree and begin full-time production in a company laced with Caltech graduates.

"I'll have a lot of Caltech people working for me," he says. "Caltech graduates can't be equalled for technical background and creativity. And with our company name we can branch out into all kinds of audio equipment and other commodities. For example, several of the people who have helped me are interested in building an exotic car. There's one on the market for \$125,000 and we believe we could match it for \$30,000. The challenge is to equal or excel something for a lot less money."

Gross's excursion into the world of electronic sound began because of peer pressure, and happened almost as soon as he arrived on campus. A person who had always enjoyed taking things apart to see how they worked, Gross moved into Ruddock House in September 1976 with a portable Panasonic stereo that he had owned since he was 13. "I was really embarrassed," he says, "because practically everybody in the house had fancy new equipment. I started saving money right away to buy something better."

When he had saved the money he brought home a pair of \$200 speakers to try out for a week. Another student suggested to Gross that he could build a better pair than these himself, and Gross decided to make the attempt. After returning the speakers, he bought better quality components, assembled unfinished speaker cabinets in the student shop, and completed his own set for \$140. His friend had been right: The ones he built sounded better.



Bill Gross assembles his 561st stereo speaker.

Word of Gross's technological achievement spread through the student houses, and by the end of that year, he had built speakers at cost for six other students and was badly bitten by the audio-technology bug. He spent the summer reading about speakers, talking with Caltech engineers, and checking equipment out of the electrical engineering instrument library on campus to work on ways to improve the fidelity of his creations. ("It wasn't too difficult," he says, "to catch up to the stereo companies' technology and to surpass them.")

Gross practiced his skills by building about 40 more speakers over the summer for people who placed orders with him. For Caltech people he still made them at cost. During his sophomore year he continued to build speakers and to improve his product. Toward the end of that year he achieved a breakthrough: He enhanced his sound fidelity by putting woofers in a separate speaker from tweeters and mid-range drivers. He also learned to use lead as a damping material in the cabinets, and he continued to search the market for the best possible components.

The next summer Gross lived in an apartment near the Caltech campus for better access to its facilities, and he continued to experiment. That spring he had met pianist James Boyk, performing artist and teacher of piano at Caltech and, with Boyk as his adviser, he began to concentrate on how to reproduce live sound as precisely as possible. By the end of the summer he had learned how to compensate electronically for irregularities in components. The only other speakers that offered this compensation cost \$1900 apiece—and Gross's hand-built creations cost \$400 a set.

Word of his achievement spread through his marketing territory, and Gross was deluged with orders, many of them from other university campuses where he had run ads in student newspapers. Two days before the beginning of his junior year he decided to take a leave of absence. He spent the next year refining his technology, filling orders, learning marketing techniques and the politics of dealing with vendors, and deciding whether to rent a

he says. "I've learned more than I really ever wanted to know about teak and rosewood veneer."

While he completes his last two years of studies, he's continuing to build speakers and he's learning more about how to become an entrepreneur. He's attended the Caltech Y-Gnome job counseling sessions on how to start your own company, and is conducting a trademark search on his company name and on the name of his speakers (Sound Mirrors). Gross may go on to business school after he finishes at Caltech—if he can endure the delay before launching Gross National Products.

"I can't wait to get started," he says, "and I have some good friends who have helped me and who will really be great to work with. In the meantime, I want to get as many of my speakers in use as possible. It's really tremendous to go through the houses and see all those speakers with GNP name plates on them."

Gross says that if he can start small enough he may be able to launch his enterprise on his own. The idea of starting small appeals to him because "I want to be involved in all phases of the operation so I can keep on top of quality control. I know the speakers so well because I've built so many by hand; because of this I'll be able to build good test equipment to verify quality. If starting small means that orders pile up—well, then people will just have to wait, the way they do for a Rolls Royce."

How does Gross feel about having carved out a career for himself when many of his fellow students are still coping with uncertainties over job alternatives? "It's just great," he says. "I'm really excited about what I'll be doing. And to think that all of this started in Ruddock House because of peer pressure. I just wanted to keep up with everybody else by owning a better stereo."

## Shanghai alumni form chapter

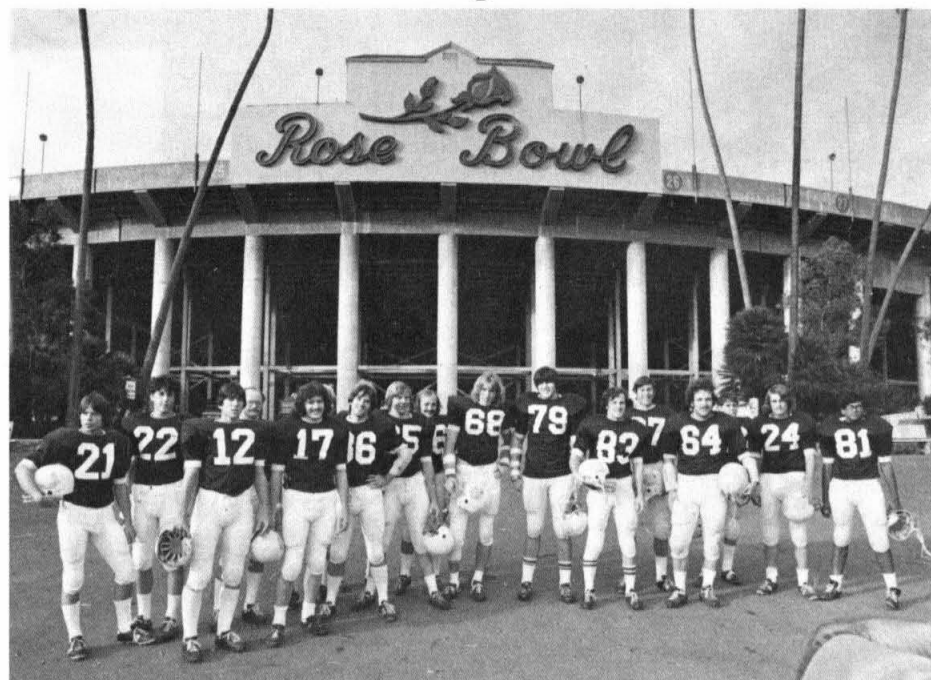
A second international chapter of Caltech alumni (the first is in Paris) was launched this fall when graduates in Shanghai of the People's Republic of China held their first reunion. Those present were Chia-Chen Tan, PhD '36, vice president of Fudan University and director of its Genetics Institute, and (from the Institute of Plant Physiology of the Academia Sinica) Hung C. Yin, PhD '37, director of the Institute, Shih Wei Loo, PhD '45, director of cell biology, Yu-Wei Tang, PhD '48, director of plant hormone research, and San-Chiun Shen, PhD '51, director of microbiology.

James Bonner, Caltech professor of biology, in Shanghai to attend a professional meeting, joined the group, as did two former Caltech postdoctoral fellows, husband and wife Chen Sheng and Mrs. Sheng.

plant, secure investment capital, and "make a big production run." But Gross decided to come back and finish his degree. "I knew that if I didn't come back this year I never would," he says.

Besides designing speaker units, Gross also has been creating and installing custom-designed sound systems in private homes, doing all the wiring and building cabinetry that matches the customer's decor. These projects cost \$2,000 and up and often involve house calls almost every day for a month. "In these jobs I've gotten awfully involved in cabinetry,"

## Tech's own Rose Bowl game



The Caltech Beavers opened the football season 26 strong, but injuries had reduced their number to 18 when they assembled to meet the Tijuana Tech Greyhounds in the Rose Bowl. About 200 fans turned out (the biggest Caltech crowd of the season) in the only football game in the nation to be played before more than 100,000 empty seats. As the 2 p.m. kickoff time came and went and no Tijuana Tech appeared, the Caltech band entertained by playing "Sergeant Pepper's Lonely Hearts' Club Band" and spelling out "CIT" in a spontaneous and unrehearsed formation. The Caltech card section (seven strong) held up cards that spelled out BEAT T.I.T. and observers speculated on the difficulties of trying to convince border guards that you really were members of a team from Tijuana Tech on the way to play in the Rose Bowl. A good time was had by all until the game was officially cancelled at 3:15 p.m. when a call to the border crossing station confirmed that no football team had passed that way. Later a call to Tijuana Tech revealed that the game had been cancelled in October—but that no word had reached the Caltech Athletic Department. Tech won on a forfeit.



# Cross country leads in season successes

## Cross country

The Caltech men's cross country team closed out a phenomenal season by capturing fifth place in the NAIA District 3 Championship meet, narrowly missing fourth place by seven points. The fifth place district finish was the highest ever achieved by a Caltech squad, and an exciting finale to a great year. The team also placed third in the SCIAC championship meet two weeks earlier.

The cross country team also smashed last year's dual meet record of 13 wins and 5 losses by posting a mark of 14 wins and 3 losses. The losses were to former NCAA champion Occidental, current SCIAC champion Pomona-Pitzer, and defending NAIA district champion Azusa Pacific. Among the victims of this year's "Orange Explosion" were Redlands, Whittier, Claremont, California Lutheran, Biola, UCSD, and Westmont.

According to Coach Neal, the future of the team looks even brighter, primarily because only one varsity runner, number three man Bill Gould, will be lost to graduation.

The strength of the team is well dispersed among juniors Rich Holmes, Glen George, Eric Korevaar, and Dave Drum, sophomores Randy Field and Brian McLain, and three talented freshmen, Karl Clausing, Bob Murtha, and Vince Cammarata. Coach Neal believes that the 1980 squad "will be awesome. The members have enough success to build up a winning tradition and now will shift emphasis from dual meets to championships."

Receiving awards for achievements this season were Rich Holmes for his school record on the home course, and Bob Murtha for the Most Improved Runner. Bill Gould was honored as the Outstanding Runner, winning the Paul Barthel Memorial Award for his leadership, dedication, and high level of achievement.

### Women's cross country

Caltech's women's cross country team displayed unexpected strength in its first full year of existence as an intercollegiate squad. Led by nationally ranked marathoner junior Celia Peterson, the team posted a creditable record of five wins and four losses.

Though Caltech lacked the required number of runners for ranking at the SCIAC championship meet, the team managed to beat rival teams from Whittier, La Verne, Redlands, and defending SCIAC champion Occidental College. Peterson finished second overall in the SCIAC finals; freshmen Julie Kornfield and Karen Close came in fourteenth and twenty-third; and team captain Susan Gardner, a sophomore, finished thirty-second. Freshman Thelma Nunez was injured and unable to compete.

At the conclusion of the season, Gardner was honored as the most improved runner on the team, while Peterson received accolades as she set a women's school record on the 2½-mile home cross country course. Kornfield was named outstanding runner, exhibiting the highest qualities of achievement, leadership, and dedication.

"Prospects for the women's team are very bright," says Coach Neal. "With all these strong runners due to return next season, the 1980 cross country team should be very competitive, possibly even challenging for the SCIAC title."

## Football

Caltech's football program started off the year with a squad 30 strong, and under the direction of new coach Bob Davies, who called precedent-setting 5:50 a.m. practices that produced a few groans from team members. The extra practices (in addition to early evening workouts) made for a successful pre-season and enabled the Beavers to defeat their first opponent, Mexicali. Caltech emerged a 28-6 victor.

But the contests that followed against Redlands J. V., Claremont-Mudd J.V., and Chapman College were lost by lopsided scores. Dwindling numbers and injuries took their toll as Caltech (down to only 20 healthy people) unsuccessfully faced La Verne.

What proved to be the team's last game was scheduled to be played in the Rose Bowl against Tijuana Tech. The opponents never showed up, however, and Caltech accepted the forfeit win to boost its ledger to 2-4. Due to injuries, the remaining two games were canceled as the Caltech gridders licked their wounds and returned to the classroom.

## Soccer

The Caltech soccer team had an enjoyable season in what proved to be a very competitive conference this year. The record of 2 wins and 10 losses in the league does not indicate the true strength of the team; almost all of the games were decided by one or two points. The season's high point was a 3-2 near miss against Claremont-Harvey Mudd, last year's league champions and this year's runner-up. Caltech also managed to score more goals against the league winner, Pomona-Pitzer, than any other team in the league.

The team is looking forward to next season as ten of the eleven starters will be returning. This includes the team captain and most valuable player, Bryan Dunkeld, and sophomore standout John McNally, both of whom were named to the All-Conference Second Team. Strong performances were also put in by midfielder Larry Friedrich and senior defender Rono Mathieson.

## Water polo

Caltech's water polo season got off to a slow start with a 12-17 loss to across-the-street rival Pasadena City College, but Techers followed up with wins over Loyola and Pierce. However, conference powerhouse Occidental College outscored Caltech, and Tech also sustained losses at the hands of Whittier and Pomona-Pitzer. The Beavers lost 8-16 in a hard-fought game with Claremont-Harvey Mudd but came back to beat Redlands 19-12.

Leading the team was captain Bill Power, the only senior. Junior Todd Olson, a steady player, was joined by sophomores Matt Wette, David Dowling, Arlen Anderson, Peterpaul Vita, and freshmen Chris McKinnon, Bob Golden, Bjorn Matthias, Steve Chin, Dave Huff, and Brent Stuart.

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# LOST ALUMNI

The Institute has no record of the addresses of these alumni. If you know any of their addresses, please relay the information to the Alumni Office.

Adodra, Surendra	1967	Clark, Albert	1948
Alexander, Joseph	1950	Clark, Morris	1941
Aliferis, Eudoxia	1964	Clarke, Fredric	1947
Allen, Robert	1916	Clay, William	1946
Allen, Thomas	1949	Clements, Robert	1947
Allison, Charles	1946	Clementson, Gerhard	1945
Allison, Donald	1930	Coles, Alan	1970
Amster, Warren	1944	Collins, Burgess	1948
Andrews, Thomas	1949	Collins, Hugh	1947
Anspach, Kenneth	1943	Compton, Arthur	1940
Arbo, Paul	1952	Conrad, Robert	1946
Ari, Victor	1945	Cooper, Harold	1949
Arosemena, Ricardo	1951	Cotreau, Gerald	1968
Artaud, Alain	1968	Couch, Harold	1966
Asher, Rolland	1947	Cousin, Michel	1962
Atencio, Adolfo	1947	Cox, Edwin	1922
Au, Yin-Ching	1948	Crosthwait, Ted	1943
Audet, Clement	1962	D'Arbaumont, Michel	1962
Baeckelandt, Victor	1959	Dagnall, Brian	1947
Barriga, Francisco	1944	Daleon, Benjamin	1943
Barron, Robert	1966	Davidson, Harold	1949
Baummann, Laurence	1949	Davis, John	1967
Baumgarten, Werner	1941	Davis, Roderic	1937
Bebe, Mehmet	1942	Dawson, Thomas	1959
Behroon, Khosrow	1946	De Medeiros, Carlos	1944
Bell, William	1944	De Witte, Leendert	1947
Benjamin, Donald	1944	Delsemme, Jacques	1973
Berkant, Mehmet	1944	Dessinger, Jerry	1967
Bertram, Edward	1935	Diercks, Allen	1956
Birlik, Ertugrul	1944	Dirickson, Luiz	1953
Bissett, Charles	1952	Dorlhac, Jean-Pierre	1962
Blondy, Philippe	1967	Doyle, Richard	1970
Boissaye, Eric	1972	Drake, George	1970
Boss, David	1970	Dubois, Jean	1962
Bowen, Mark	1946	Dupont, Michel	1967
Bradford, Robert	1956	Dyson, Jerome	1946
Brthes, Alain	1955	Easley, Samuel	1941
Brinkhaus, Harvey	1946	Easton, Anthony	1937
Brody, Julian	1950	Eaton, Warren	1943
Brown, James	1943	Edsforth, John	1957
Brown, John	1949	Edwards, Robert	1956
Bucy, Smith	1952	El-Hussaini, Jassim	1954
Bunce, Capt.	1948	Elliott, Stephen	1971
Burch, Joseph	1944	Emre, Orhan	1942
Burk, Thomas	1933	Eris, Altan	1966
Burke, William	1944	Esner, David	1946
Burnight, Thomas	1937	Evans, M.	1935
Byles, David	1958	Facon, Pierre	1963
Byun, Chai	1959	Fagundes, Helio	1970
Campbell, Richard	1951	Farley, Alan	1957
Carroll, Clark	1959	Fateh, Hassan	1946
Cauley, Joseph	1960	Fitzgerald, Larry	1962
Cebeci, Ahmed	1944	Fleuret, Jacques	1968
Cerne, James	1969	Fong, Conrad	1946
Chalier, Philippe	1965	Forrester, Herbert	1950
Chang, Tzeu-Ching	1964	Fossard, Andre	1959
Chao, Chung-Yao	1930	Foster, Francis	1949
Cheema, Inder	1965	Foster, R.	1946
Chen, Ke-Yuan	1946	Frank-Jones, Glyn	1941
Cheng, Ju-Yung	1937	Freire, Luis	1946
Christensen, Ronald	1959	Gardner, John	1958
Chu, Tao-Hung	1948	Geitz, Robert	1941
Chung, Ta-San	1947	Genachte, Paul	1935

Gentner, R. Adm.	1940	Krasin, Fred	1949	Peterson, Frank	1927	Stuteville, Joseph	1957
Gibson, Arville	1940	Kraus, Alfred	1953	Peterson, Norman	1940	Summers, Allan	1951
Gibson, Charles	1945	Krauss, Max	1949	Peterson, Roger	1965	Sunlap, Halit	1944
Gill, George	1946	Kwok, Chung-Mo	1964	Petrulas, Thomas	1949	Sutton, Donald	1952
Gillam, Eric	1947	Labanauskas, Paul	1944	Petty, Charles	1949	Swain, John	1948
Giraudbit, Georges	1964	Lacrouis, Jean	1958	Pi, Te-Hsien	1944	Takahashi, Nobuyoshi	1953
Girguis, Atef	1970	Lafdjian, Jacob	1951	Pines, Barry	1962	Tanyildiz, R.	1944
Given, Frank	1942	Larsen, William	1933	Pjerrou, Gerald	1958	Taylor, Garland	1944
Go, Chong-Hu	1942	Latson, Harvey	1948	Prasad, K.	1946	Tezduyar, Tahsin	1972
Goehring, E.	1944	Lau, Kam	1929	Rau, William	1932	Thompson, Russell	1947
Gold, E.	1956	Leeds, William	1943	Reed, Dwain	1961	Thompson, Wilfred	1925
Goldstein, Mark	1969	Lennox, Stuart	1953	Reimers, George	1941	Tileston, Peter	1943
Goldwasser, Robert	1967	Lentz, John	1938	Rhett, William	1938	Tracy, Willard	1924
Goodell, Howard	1951	Leo, Fiorello	1947	Rice, Jonathan	1945	Treyer, Andre	1957
Goodman, Hyman	1938	Leonard, Ronald	1959	Rice, Winston	1933	Trimble, William	1944
Graham, Ralph	1971	Leroux, Pierre	1949	Riddell, Richard	1944	Tsao, Chi-Cheng	1938
Grange, Jean-Marie	1964	Levin, Daniel	1942	Ridlehuber, Jim	1944	Tung, Yu-Sin	1946
Green, William	1940	Lewis, Frederick	1946	Ringness, William	1949	Tung, Necat	1945
Grey, Jerry	1952	Lewis, Stanley	1911	Rivas, Dagoberto	1935	Turteltaub, Matias	1965
Gridley, Horace	1924	Li, Chung	1950	Roberts, Fred	1943	Uththoff, John	1957
Griffith, Richard	1963	Linton, William	1947	Robinson, Frederick	1941	Uyterhoeven, Willem	1929
Gross, Arthur	1938	Lotzkar, Harry	1937	Robinson, True	1929	Van Hise, Albert	1951
Guebert, Wesley	1954	Lovoff, Adolph	1940	Robison, William	1952	Van Riper, Dale	1936
Guillemet, Michel	1959	Lowe, Frank	1938	Roe, George	1948	Vanden Heuvel, George	1947
Gutierrez, Arnulfo	1938	Lowrey, Richard	1949	Roesch, William	1949	Vicente, Ernesto	1943
Hall, George	1957	Lunday, Adrian	1952	Rogers, Berdine	1954	Vidal, Philippe	1965
Halvorson, George	1946	Lundquist, Roland	1943	Romney, Carl	1945	Voelker, William	1948
Hamel, Armando	1959	Luo, Peilin	1952	Rona, Yavuz	1969	Vosseller, A.	1934
Hansen, Raymond	1925	MacDuffie, Duncan	1956	Rosen, Moe	1936	Waddington, Bruce	1972
Hardy, Donald	1949	Macke, Etienne	1961	Roth, Stanley	1959	Waits, Harold	1964
Harrington, Walter	1947	MacNeill, Robert	1948	Rouvillois, Xavier	1959	Waller, Conrad	1925
Harrison, Charles	1944	Majerovic, Isaac	1970	Rubin, Arthur	1960	Wan, Pao	1947
Harvey, Donald	1941	Mampell, Klaus	1943	Ruddick, Robert	1962	Wang, Tsung-Su	1940
Hatch, G.	1967	Manoukian, John	1947	Salbach, Carl	1946	Washburn, Courtland	1943
Hauvillier, Claude	1972	Mantarakis, Petros	1970	Samuelson, Lee	1963	Watkins, James	1940
Havens, Byron	1939	Marshall, John	1944	Sappington, Merrill	1947	Watson, James	1938
Hayne, Benjamin	1946	Martin, Francis	1928	Sayegh, Samir	1965	Weaver, Robert	1941
Heiman, Jarvin	1949	Martinez, Victor	1942	Scavennec, Michel	1967	Weeks, Richard	1952
Hemmingway, Richard	1959	Mason, Herman	1948	Schaefer, Brian	1968	Wegener, Paul	1971
Henry, Irvin	1954	McBreen, Kenneth	1944	Schmidt, Howard	1950	Welch, Donald	1955
Hill, David	1956	McCollam, Albert	1948	Schneider, William	1950	Wellman, Alonzo	1947
Ho, Chung-Pen	1945	McElligott, Richard	1949	Scholz, Dan	1943	Welte, Robert	1950
Holdridge, Douglas	1957	McNeal, Don	1935	Scott, Francis	1954	West, William	1931
How, Kum	1966	McNeely, William	1971	Scudder, Nathan	1926	White, Dudley	1930
Huang, Ea-Qua	1947	Menis, Luigi	1940	Serafin, Robert	1966	White, Ray	1957
Huang, Fun-Chang	1935	Michal, Edwin	1933	Servet, Abdurahim	1937	Whitehill, Norris	1950
Huang, H.	1946	Miller, James	1907	Shannon, Leslie	1943	Winkler, Robert	1948
Huang, Y.	1926	Moise, Norton	1959	Shappell, Maple	1933	Widess, Paul	1960
Huber, William	1955	Molloy, Charles	1967	Shaw, Thomas	1937	Widess, Ruben	1931
Hutchinson, James	1970	Molloy, Michael	1947	Shepard, Elmer	1946	Wiget, Clark	1937
Hylton, Frank	1949	Moorehead, Basil	1947	Shuler, Ellis	1937	Wight, D.	1944
Ikeda, Takehiko	1964	Morane, Didier	1959	Shults, Mayo	1944	Wilkening, John	1949
Imbert, Nicole	1970	Moyers, Frank	1930	Shultz, Frederic	1966	Wilson, Howard	1952
Ingram, Wilbur	1946	Moyson, Jean	1967	Silgado, Enrique	1944	Wilson, Warren	1939
Isaacs, Ernest	1960	Muller, Jerry	1933	Slachmuylders, Erik	1961	Wimberly, Clifford	1947
Jenkins, W. Hugh	1956	Sledge, Edward	1923	Slusher, John	1948	Winkler, Robert	1965
Jimenez, Herberto	1954	Slusher, John	1929	Smith, Harvey	1946	Winniford, Robert	1948
Joffres, Pierre	1960	Smith, Lewis	1946	Smith, Warren	1961	Winters, Edward	1947
Johnson, William	1944	Spence, William	1939	Snow, Neil	1935	Winters, Herbert	1954
Jones, Paul	1937	Spiegelman, Will	1944	Solelha, Bernard	1965	Wolf, Paul	1949
Jones, Winthrop	1939	Srinivasan, Prabandam	1956	Solomon, Salim	1949	Woodbury, William	1938
Kane, Richard	1943	Stadum, C.	1941	Spence, William	1956	Woods, Marion	1948
Kanus, Karl	1964	Standridge, Clyde	1941	Spiegelman, Will	1963	Wright, William	1969
Karubian, Ruhollah	1940	Stanford, Harry	1944	Srinivasan, Prabandam	1956	Wright, John	1944
Keenan, Robert	1963	Stein, Roberto	1944	Stadum, C.	1941	Yik, George	1944
Kelley, William	1930	Stenberg, Gunnar	1958	Standridge, Clyde	1941	Ying, Lai-Chao	1947
Kelly, James	1956	Stephens, Melvin	1965	Stanford, Harry	1944	Yoshioka, Carl	1931
Killian, Roy	1945			Stein, Roberto	1944	Young, Larry	1936
Kitten, Roland	1961			Stenberg, Gunnar	1958	Yui, En-Ying	1941
Koch, A.	1933			Stephens, Melvin	1965	Zola, Colman	1941
Koch, Robert	1943						
Koch, Walter	1938						



# PERSONALS

1937

OWEN C. JOHNSON writes, "Just a word of updating. After a very interesting and fulfilling career in the field of engineering I've finally retired — something I never thought I would do. There are many advantages, and it is fun to discover them, one by one. We took a round-the-world cruise early this year, then bed-and-breakfasted all through southwest England, ending up in Oxford. We've escaped from the traffic and the smog, and are settled in mile-high Idyllwild [California] where the pace is calm and the air cool and clear."

1942

DONALD K. JEPHCOTT reports, "As of December 1, 1979, I will be living in Sacramento. I was appointed chief structural engineer of the Office of the State Architect in charge of the structural safety section. This division has the responsibility for approving the construction of all hospital and public schools in the state of California for earthquake safety."

1942

CARL H. SAVIT, MS '43, senior vice-president, technology, of the Western Geophysical Co. in Houston, Texas, was given the Virgil Kauffman Gold Medal Award by the international Society of Exploration Geophysicists (SEG). The award recognizes activities that include membership on both presidential commissions investigating the 1969 Santa Barbara oil spill, assistance on earth, sea and air sciences to the President's science adviser in 1970, and service on numerous committees of the National Research Council of the National Academy of Sciences. Savit is currently serving a two-year term on the Energy Research Advisory Board of the U.S. Department of Energy.

Savit has also received the 1979 Compass Distinguished Achievement Award of the Marine Technology Society. The award was given for his outstanding contributions in both national and international organizations, contributions that have led to significant advances in such areas as instruments, recording equipment, and navigation systems.

1944

RUBEN F. METTLER, MS '47, PhD '49, chairman of the board and chief executive officer of TRW Inc., has been named to receive the National Human Relations Award, highest honor of the National Conference of Christians and Jews. Conference president David Hyatt, in announcing the award, said, "Throughout his career as one of the most brilliant scientist-engineers of our country, Dr. Mettler has applied the philosophy of the brotherhood of man to every day 'bread and butter' problems, especially in the upgrading of employment, job opportunities and education for the disadvantaged. He has consistently championed minority causes that help people take their place in the economic and educational life of America."

1949

ARTHUR E. BRUINGTON, MS '50, advises us that he has left the Los Angeles County Flood Control District after 29 years to become the general manager of the Irvine Ranch Water District. The District, serving 55,000 people in southeast Orange County, has a program that includes returning treated wastewater for use as irrigation on agricultural lands and on community landscaping. Along with the job change, Bruington and his wife, Louise, have moved from San Gabriel to Irvine.

1951

RICHARD G. BREWER has received The Franklin Institute's Albert A. Michelson Medal. Brewer, an IBM Fellow at IBM Research Laboratory in San Jose, California, was cited



Richard Brewer receives Michelson Medal

"for his many discoveries and contributions to laser physics in the area of nonlinear interaction of intense laser light with molecules."

1952

B. KENNETH KOE, PhD, has been appointed research adviser in pharmacology in the research laboratories of Pfizer Inc. in Groton, Connecticut. The post is a principal scientific position in the company's central research division. Koe was cited for his "extensive and productive research in the field of psychopharmacology." He is known internationally for his research on biochemical mechanisms of the action of drugs affecting the central nervous system, and one of his many publications, among the most widely cited scientific works ever published, deals with his landmark discovery of the biochemistry of p-chlorophenylalanine.

1955

F. CURTIS MICHEL, PhD '62, writes from the Centre d'Etudes Nucleaire, Saclay, and the University of Paris, #4, "I am here on sabbatical leave from Rice University (Dept. of Space Physics and Astronomy) and am also a Guggenheim Fellow, and have a desk at Saclay (CEN) and at Palaiseau (Centre de Physique Théorique) since the two are 'dividing' me. Both have interests in astrophysics, which is my present field."

1959

DAVID G. LUENBERGER, professor of engineering-economic systems and of electrical engineering at Stanford University, has had published *Introduction to Dynamic Systems: Theory, Models, and Applications*, by John Wiley & Sons, Inc.

1962

LAUREN V. MERRITT, MS '63, informs us, "I am currently self-employed as an electronics consultant specializing in control systems, motors, the servos required to control them, and the computers required to control the servos." Merritt and his wife, Stephanie, live in Los Altos, California.

1965

VIRGINIA TRIMBLE, MS, PhD '68, associate professor of physics at UC Irvine, and visiting associate professor of astronomy at the University of Maryland, has been appointed a Phi Beta Kappa Visiting Scholar for 1979-80.

1966

JOHN D. ROUSE, section head at Hughes Aircraft, El Segundo, California, announces that he and his wife, Sharon, have adopted a son. "A charming little boy, John Patrick, was born January 24, 1978, and we got

him in May of '78. He is now 20½ months and very active. Hopefully he'll be among Caltech's class of 2000."

1967

PHILIP L. PAINE, a cell biologist for the Michigan Cancer Foundation, has been awarded a grant from the National Institutes of Health for a three-year study of protein distribution in the cell. Paine heads a section of the cellular physiology lab at the Meyer L. Prentis Cancer Center in Detroit, where his protein distribution study examines how proteins regulate the genetic messages that cause cells to behave normally or abnormally.

1970

MICHAEL L. KAHN has been appointed an assistant professor in the department of bacteriology and public health and in the genetics program at Washington State University. For the past three years, Kahn was a postdoctoral fellow at UC San Diego.

GERALD F. ROBERTSON, MS, an associate senior research engineer at the General Motors Research Labs, has joined the staff at Lawrence Institute of Technology in Southfield, Michigan, as a lecturer in the School of Engineering.

1972

JAMES C. PEARCE, MS, PhD '76, has been appointed senior research engineer at Chevron Oil Field Research Company La Habra, a subsidiary of Standard Oil Company of California.

1974

JOHN A. MORGAN reports, "After completing my doctorate at Rice University in May, I have taken up a two-year appointment as a research fellow in astronomy at the University of Sussex, near Brighton, in the United Kingdom. Good beer, bizarre cuisine. No Mexican food."

1976

KARL STEPHAN informs us, "After a year of graduate work at Cornell and two years at Motorola's Ft. Worth mobile radio facility, I am now with Scientific-Atlanta's cable TV division in Georgia. Next April 8 the former Pam Simons and I will observe our second wedding anniversary."

1979

DAVID K. ERWIN, PhD, has been appointed assistant professor of chemistry in the College of Arts and Sciences at Memphis State University in Memphis, Tennessee.

## ALUMNI ACTIVITIES

January 1

*Rose Parade Special.* Begins in the Athenaeum with a continental breakfast, 7:30-9 a.m. Walk down to Colorado and Holliston for grandstand seats; return to Athenaeum around 11:30 a.m. for a buffet lunch. For those who already have game tickets, transportation to the Rose Bowl and a box lunch will be provided.

Price for those wishing buffet lunch: \$27.00 per person. For those with game tickets: \$35.00 per person.

March 7 and 14

*Wine tasting programs.* Details to be announced later.

March 9

*Gnome Club Founders' Night Dinner,* the Athenaeum.

## Sports summaries

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### Women's volleyball

The first year for Caltech's women's volleyball club, coached by former Occidental varsity player Yela Luzar, was a successful one. The team's final record stands at 7-3.

Caltech won its first two games against Whittier and Scripps, then lost to Redlands and won a second game against Whittier. The remaining games with Pomona-Pitzer (two) and with Occidental, Scripps, Redlands, and La Verne resulted in four wins and two losses. The team also participated in a junior varsity tournament at Cal State L.A. Although they didn't place, the members enjoyed the opportunity to compete.

joyed the opportunity to compete.

The six starters were Sue Fuhs and Chris Bockenstette as setters, and Toni Claudio, Kay Strong, Sandra Loh, and Norma Ofsthun as hitters. Other team members included Chris Wood, Sue Vandewoude, Leslie Rusch, Lynmarie Thompson, Lynn Hildemann, Cathy Kirschvink, and Noemi de la Puente.

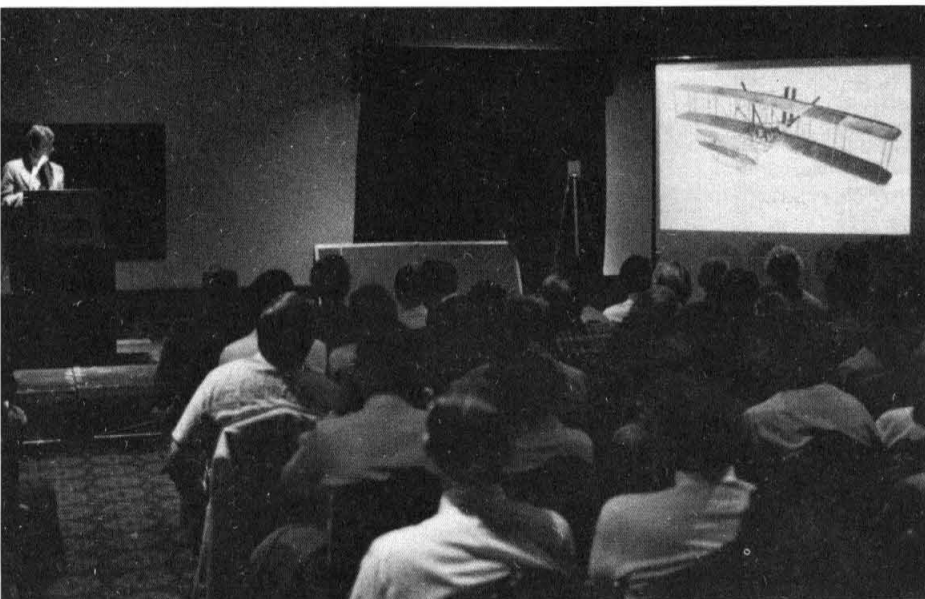
If you are moving, please notify the Caltech Alumni Association of your new address (please print):

NAME \_\_\_\_\_

YEAR \_\_\_\_\_

NEW ADDRESS \_\_\_\_\_

## Seminar Day in San Francisco



Some 120 alumni turned out this fall for the second annual Mini Seminar Day in the San Francisco Bay Area, sponsored by the San Francisco alumni chapter. Six Caltech faculty members described their research during the all-day program. Above: Fred E. C. Culick, professor of applied physics and jet propulsion, talks about the Wright brothers' aeronautical achievements.

## OBITUARIES

1929

CHARLES A. BOSSERMAN on October 5. Bosserman, a self-employed writer and inventor who had been an engineer at Boeing for 31 years, died at his home in Seattle. He is survived by his wife, Charlotte, sons Charles and Peter, a daughter, Sister Anne Bosserman, and 15 grandchildren.

1933

VICTOR ELCONIN, MS '35, PhD '52, on October 27. Elconin was president emeritus of West Coast University in Los Angeles. He had served as president from 1960 until June 1979.

1968

THOMAS R. McGETCHIN, PhD, on October 21, of cancer. McGetchin had taught at MIT,

organized the Geosciences Division at the Los Alamos National Laboratory, and served as director of the Lunar and Planetary Science Institute in Houston, Texas, until his recent illness. He was recently awarded NASA's medal for public service "in recognition of leadership in the NASA transition from lunar science toward a broadly based planetary science program." McGetchin is survived by his wife Carlé, son Douglas, and daughter Margaret.

1978

LAURANCE A. WEBER, MS, on October 11, from a combination of Hodgkin's disease and pneumonia. Weber had been working at Bell Labs in Holmdel, New Jersey.