California Institute of Technology

# Caltech Veus

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Not many people know that the three largest trees in Caltech's acreage in the Nelder Grove are named for Millikan, Hale, and Noyes.

One of the giant sequoias in Caltech's acreage rises toward the sky.

# Visiting Caltech's giant sequoias

#### by Ted Combs, BS '27

Not many people—not even Caltech oldtimers—know that the Institute owns an acreage of giant sequoias in the remote Nelder Grove area just south of the Yosemite National Park boundary. Although some of the trees date back to before the birth of Christ, Caltech's chapter in the history of the trees begins in 1922. It begins, actually, with Arthur H. Fleming, wealthy Pasadenan and benefactor of Throop Polytechnic Institute and of Caltech.

Arthur Fleming was born in Canada in 1856, the oldest of ten children. When he was in his early twenties, he moved to Detroit and became a U.S. citizen. Having studied law, he began his practice there, and married a Miss Clara Fowler. Clara's father was a successful lumberman, a holder of mineral rights, and vice president of his brother-in-law's business. The brotherin-law was Cyrus McCormick.

Before long, Arthur also became involved in his father-in-law's lumber business. In 1896, in a move related to Clara's health, the Flemings came to Pasadena, and Arthur's lumber interests also moved to include California. When Clara's father died, Arthur continued the business, and soon owned, among a number of other enterprises, the Sugar Pine Lumber Company in Madera County, a 1540-acre tract of forest containing more than 100 giant sequoias.

Fortunately for Caltech, soon after Fleming arrived in Pasadena, he was induced by President Edwards of Throop Polytechnic Institute to help support the school. In fact, he became its principal benefactor. In 1903, he was elected to the board of trustees. In 1910 he became the board vice president, and in 1917, board president. It seems that the Institute had trouble balancing its budget, and Fleming provided funds every year to offset the deficit. He even took over much of the

#### Continued on page 6

# Barish chosen Linde Professor

Barry C. Barish has been named the first Ronald and Maxine Linde Professor. The professorship was established by Caltech trustee Ronald K. Linde (MS '62, PhD '64) and his wife, Maxine, with part of the Linde Fund, which they created at Caltech in 1975 and recently augmented.

In establishing the chair, the Lindes stated that the professorship would not necessarily reside permanently in a particular division, but could be used wherever it would be the most beneficial.

The Lindes founded Envirodyne Industries in 1970 and built it into a Fortune 500 company. Ronald is the former chairman of the board and Maxine is former corporate secretary and general counsel of the corporation, which was sold in May 1989. In 1988 Envirodyne was ranked as one of the United States' fastest growing companies. It was a worldwide leader in the development and manufacture of food packaging materials and systems, operating in virtually every country of the world from 26 manufacturing and finishing plants in North America and Europe.

The Lindes are residents of Chicago. Both earned their undergraduate degrees at UCLA. Maxine was a research engineer at JPL in the early 1960s. She received her JD degree from Stanford in 1967.

Ronald Linde has been a Caltech trustee since 1989. He is also a life member of the Alumni Association. Among his many technical achievements, he has done pioneering research in various fields of physics, chemistry, and engineering, and in the development of new empirical techniques. He is the author or coauthor of approximately 50 technical publications, and has invented and patented equipment for enhancing chemical reaction rates. Barry C. Barish has been a professor of physics at Caltech since 1972. He joined the faculty in 1963 as a research fellow. His current research is on the search for a magnetic monopole in Italy. He has been involved in studies of high energy neutrino interactions and electron positron annihilations, and has conducted experimental research on large accelerators at Brookhaven, Fermilab, and the Stanford Linear Accelerator Center. and a state of the state of the

40), vice president; Doris Pankow, president; Edith Roberts, secretary; and J. Howard Marshall (BS '57, PhD '65), treasurer. Not present is Jesse Graner (BS '43), vice president.

# Fraser named first Rosen Professor

Scott Fraser, professor of biology, has been named the first Anna L. Rosen Professor. The professorship was established by Caltech trustee and board vice chairman Benjamin M. Rosen (BS '54) of New York; his brother, Harold A. Rosen (MS '48, PhD '51) of Santa Monica; and his sister, Ruth Rosen Weisler of New Orleans.

The chair is restricted to the Division of Biology, with a preference for biotechnology.

We wish this chair to be a fitting remembrance to our mother, who was instrumental not only in sending us all through school, but also in instilling in us an appreciation of education. We hope that it will contribute in some way to advancing the frontiers of science and benefiting all of mankind, a goal that she would have supported enthusiastically," the Rosens said in a statement upon making the gift.

The new Anna L. Rosen Professor joined the Caltech faculty in January, 1991. Previously he had been professor and acting chairman of the Department of Physiology and Biophysics at UC Irvine. He joined the UC Irvine faculty in 1980 as assistant professor and was named associate professor in 1986. Before that he was an associate research scientist in the Department of Biophysics at Johns Hopkins University. Fraser earned his PhD from Johns Hopkins University in 1979, and his BS degree in physics from Harvey Mudd College in 1976. Fraser's research interests are developmental neurobiology, regulation of cell lineages, cell-cell communication, pattern formation, experimental embryology, and theoretical biology. He is a member of the American Association for the Advancement of Science, the Society for Developmental Biology, the Society for Neuroscience, and the Biophysical Society.

# Parsons awards \$333,000 grant to Institute

The Ralph M. Parsons Foundation has awarded Caltech a \$333,000 grant to support a research project in developmental biology entitled "How The Gene Regulatory System Transforms An Egg Into An Embryo." The principal researchers will be Leroy Hood and Eric Davidson. Hood is the Ethel Wilson Bowles and Robert Bowles Professor of Biology and director of the Science and Technology Center for Molecular Biotechnology, and Eric Davidson, the Norman Chandler Professor of Cell Biology.

One of the basic problems in modern biology is how an organism starts as a single cell, the fertilized egg, and grows to become a complex adult organism. For humans, the 100,000 units of information (genes), contained on our 23 pairs of chromosomes and present in each cell, encode the information upon which development is based.

The goal of the research project will be to identify and describe the events that occur in the genes as an egg begins to be transformed into an embryo. All of the cells formed in the early embryo contain the same complete set of genes formed when the sperm and egg nuclei fuse at fertilization. This set of genes is known as the genome of the organism, and is formed from the maternal and paternal chromosome sets. Early in the development of every embryo, however, different cells begin to express different sets of genes. For example, some cells become part of the muscle tissue because they express muscle-specific genes. Others give rise to nerves, others to intestine, etc. "If we can understand how different gene function arises, we can see how the complex organs and structures are formed later on in development," said Hood. The sea urchin, an animal used in studies at Caltech for the past 50 years, will be the focus of the research.

# Freshman meritbased scholarship established

Harrison C. Lingle (BS '43) and hi wife, Dorothy B. Lingle, have established a merit-based award fund for incoming freshmen at the Institute. Th fund will make it possible to offer a \$5,000 merit award to an entering freshman in the fall of 1991. The scholarship will be awarded based on the student's "demonstrated exceptiona. character, plus an outstanding academic record, particularly in math and science with an expressed interest in pursuing a career in the field of science and engineering."

If the student continues to remain in good academic standing, the scholarship will be renewed each academic year. Additionally, a merit award will be offered to a member of each subsequent entering freshman class. Ultimately, it is anticipated that a full tuition scholarship will be awarded to a freshman each year, and continued every year so long as that student remains in good academic standing at the Institute.

The Lingle Scholarship Fund will be the first merit-based endowed scholarship fund for freshmen to be established at Caltech. Harrison Lingle, the retired founder and president of Hartco Co. in Skokie, Illinois, believes strongly that excellence and achievement should be recognized and hopes that a freshman financial award, based solely on merit, without regard to need, will encourage additional high school students of exceptional character and intellect to apply to Caltech.

Jennings speaks at Provost's

Members of the new Executive Committee of The Associates: Millard Jacobs (BS



# Circle dinner

The Provost's Circle dinner in the Athenaeum this winter brought together 83 members to hear Paul Jennings, vice president and provost. Jennings described for the group some of the exciting work being done at the Institute through membership contributions. Greeting guests was Robert D. Volk, chairman of the circle. Fifteen faculty members were hosts. Members of the Provost's Circle are Life Members of The Associates who contribute between one and six thousand dollars a year to the Institute.

# Grant supports outreach program for biology

High school biology education in the Los Angeles educational community is getting a boost, thanks to a \$500,000 grant to Caltech from the W. M. Keck Foundation. The grant will support a five-year outreach program headed by Leroy Hood, the Ethel Wilson Bowles and Robert Bowles Professor of Biology at Caltech and director of the Science and Technology Center for Molecular Biotechnology, which is funded by the National Science Foundation.

An intensive summer workshop on the Caltech campus for 10 high school biology teachers is planned for 1992, according to Sue Lewis, administrative manager for the Science and Technology Center. The workshop will be the first in a series of four, to be held during consecutive summers. Teachers will be selected chiefly from schools with large minority student populations in Pasadena and surrounding local districts. Focus of the workshop will be on the development of an updated, relevant, biology laboratory curriculum.

"Through the project, high school teachers will be offered a meaningful biological science curriculum to take back to their classrooms," said Thomas E. Everhart, Caltech president. "There, students will learn that science is both interesting and fun. The result should be a better-informed citizenry and a broader commitment to advanced science studies."

Each afternoon, teachers in the workshop will be given several laboratory experiments for their classrooms, along with all the support materials necessary to actually conduct the experiments. Much of the money from the Keck grant will go to buy the support materials, Sue Lewis explained. "Teachers in the schools we'll be working with have limited budgets for equipment," said Lewis.

The summer of 1991 will be spent developing the workshop and support materials. In the fall, recruitment of participating teachers for the following summer will begin. cates part of its resources to primary grant programs in science, engineering, and medical research. Foundation support is also focused in four other areas: arts and culture, civic and community services, health care, and precollegiate education. In all of these areas, the Foundation supports projects that creatively and cost-effectively address pervasive societal needs and encourage collaboration rather than duplication of existing resources.

### Associates welcome new members

Doris Pankow, president of The Associates, welcomed 74 new members, as well as their sponsors, and members of The Associates Board, at the annual new member dinner at the Athenaeum in February. She introduced President Thomas E. Everhart, who spoke on the history and accomplishments of Caltech, and its future plans. The guests mingled with faculty members, who were hosts at each table.

# Scholarship honors two alumni

Yoshinao Nakada (BS '40, MS '41), has established a memorial fund honoring two friends from his student days, Richard Merrill Rowell (BS '38) and Richard Harvey Allen (BS '38), both of whom were killed in World War II. The income from the endowed fund will benefit the Caltech Athletic Department.

Richard Rowell, Richard Allen, and "Yosh" Nakada were members of Ricketts House and participated in athletic activities together. Nakada served with the 442nd Combat Team, the war's most decorated unit, made up entirely of Japanese Americans. His family was assigned to an internment camp in Heart Mountain, Wyoming.

Nakada has wanted to memorialize his friends for many years and was very pleased to accomplish his goal.

For those interested in making donations to the Rowell and Allen Memorial Fund, contributions may be sent to the Office of Donor Relations, Mail Code 105-40, Pasadena, California 91125.



Caltech has received a \$500,000 grant from The Seaver Institute to support research by Leroy Hood into the causes, diagnosis, and treatment of autoimmune disorders. This is the second year that The Seaver Institute has provided \$500,000 to support this research.

Hood is the Ethel Wilson Bowles and Robert Bowles Professor of Biology at Caltech, and director of the National Science Foundation Science and Technology Center for Molecular Biotechnology, established at Caltech by the NSF to develop new technology in protein and genetic engineering.

The Seaver-funded project headed by Hood concentrates on isolating and analyzing the genes that code for the development of receptors on immunesystem cells known as T cells. It has been theorized that autoimmune disorders are triggered when T-cell receptors, which stimulate the immune system into attacking and destroying infectious agents, are improperly activated by the body's own tissue. T-cell receptors are also believed to be involved in organ graft rejection.

The Seaver Institute was founded in 1955 by Frank Roger Seaver. Since his death in 1964, the foundation has supported education, cultural activities, and scientific research that is primarily directed at medical research.

Greeting guests at The Associates new member dinner are Charles Pankow, Doris Pankow, president of The Associates; Doris Everhart, and President Thomas E. Everhart.



New Associates members Joan and Gilbert Smith and their sponsor, Edith (Mrs. John) Roberts.

Besides the summer workshop, there will be four to six additional meetings during the year on the Caltech campus, for program participants to attend "Frontiers in Biology" lectures and to review curriculum development and applications.

"Conservatively, we assume that a secondary population of 9,000 students will be served by the program at the end of the five years," said Hood. "The outreach program is aimed at developing strategies that increase not only an interest in science in student populations traditionally not involved in technical fields, but also this population's further educational and career opportunities."

The W. M. Keck Foundation dedi-

George Bush to speak at commencement

Caltech's centennial year commencement speaker will be President George Bush. Although the president was invited a year ago, the White House had requested that no announcement be made until shortly before the event. Additional seats and bleachers will be added to the usual setup; and, for security reasons, tickets will be required for admission.



1400



**The Caltech** Flyfishing and Canoeing Club is open to all members of the Caltech community. The club is in need of used fly rods and reels, and wood, aluminum, and Fiberglas canoes. Anyone interested in joining the club or in donating equipment may contact instructors Tom Perry (818/356-4705) or Hal Ginder (818/356-4701) during working hours. Above: Trying their luck in **Millikan Pond are** Ginder; Christopher E. Brennen, dean of students; and Perry.

# SPORTS

#### **Basketball**

The Tech basketball team began its preseason schedule by winning the Hi-Tech basketball tournament on the campus, defeating Holy Names, Arizona Bible School, and Cal Maritime. The team lost two players with injuries before conference play, however-Keith Oslakovic and Larry Ahle-and was unable to win a conference game. Nevertheless, for the first time since 1970, a Caltech player, Bill Swanson, made all-conference. In addition, Swanson won the SCIAC Ted Ducey Award and was presented the Caltech Vesper Trophy as the team's most valuable player at the recent basketball awards dinner.

"The kids gave full effort all year long," said Coach Gene Victor. "Twenty men came out and two were injured; the others stayed with it. They practiced hard, and struggled to improve. We will have four returning lettermen back next year, and they should all be starters, so the season looks promising."

#### Fencing

The fencing team concluded conference play with 8 wins and 6 losses, finishing fourth among a field of 10. "This was a young team," says Coach Robert Randolph. "There were no juniors or seniors. Our goal was to provide a strong base that will bring championship results in seasons to come.' The season was marked by some fine individual performances. Sabre captain Keith Seitz entered the San Bernardino championships, and won the gold medal in the Division II event and the silver medal in the Division I competition. These results qualify Seitz to fence in both the Pacific Coast Sectional Championships in San Diego in May, as well as in the national championships in Chicago in June.

#### Swimming

Both men's and women's swim teams finished fifth in the SCIAC conference, the men with a 3 and 7 record, the women with 2 and 8. "The kids tried hard," said Coach Clint Dodd. "About 50 percent hadn't been on a swim team before. To me, an important test of any team is its ability to win close races. This year, both the men's and the women's teams were superb in that respect." Coach Dodd termed the conference this year "as tough as nails."

There were no seniors among the women swimmers this year. The team included 3 sophomores, 1 freshman, and 2 juniors. "Hopefully," says Dodd, "all of them will be back next year."

In individual performances among the women, breast stroker Monica Holboke swam well all year and was awarded the Martha Wayne trophy as the outstanding female swimmer. In the individual medley, Karen Ross won all the close matches. Vania Lee performed well in the 100-yard butterfly.

Four new school records were set by the female swimmers. Monica Holboke set a new record in the 200-yard breast stroke, swimming 2:48.50. Three relay records were established, in the 200yard freestyle relay, the 400-yard medley relay, and the 400-yard freestyle relay.



#### Focus: women in science

"We have so few role models, and that really hurts," said the female graduate student, one of three waiting to discuss her research with guests at a reception after a "Women in Science" lecture. "We have to figure out for ourselves what we're supposed to be like as female scientists."

Another talked about how much a young tenured female professor in her division had meant to the female students there. "She's so bright and on top of things, and always so helpful. She had a baby last year and we went through that experience with her. We saw that it was possible to be a committed scientist, and to be a mother too."

Entry level positions for young female scientists are fairly abundant today, the women agreed, but advancement opportunities continue to be limited, and upper echelon positions dominated by men.

"In another generation, that ought to

#### presented."

Meanwhile, in Millikan Library, visitors could view a photo display on the history of women at Caltech, a Centennial feature assembled by Mary Terrall, a science historian. "I like the exhibit because it makes visible some of the people who may have been relatively unknown, but who broke barriers for women at Caltech," Terrall says.

The "Women in Science" program is one of an ongoing series of Centennial events, which recently included a symposium honoring Linus Pauling on his 90th birthday, a "Turn of the Century" band concert by the Caltech wind ensemble, an outreach program which sent three graduate students to lecture in the Pasadena public schools, and a special Centennial celebration dinner in the Athenaeum, focused on "Caltech, Past, Present, and Future." An ongoing series of Watson lectures is in progress.

The Eureka Conference, the 5t annual National Undergraduate Research Conference hosted by the Institute, attracted more than 1,000 students and 300 faculty members from other schools around the country to share their research. Presentations were offered in science, engineering, the humanities, dance, and art. Sunney Chan, the Caltech Centennial Committee chairman, said, "I think that there exists a set of values unique to Caltech that has brought the Institute to its present distinction. The Centennial presents an opportunity for those of us who presently work here to reflect on these values, to undertake some finetuning, and maybe some reinterpreting to meet changing times, but more importantly to reaffirm our commitment to that subset that is so enduring as to ensure the Institute's greatness for another 100 years."

Meanwhile, in February, épée captain Peter McCann entered the southern California Division II épée championships and made the final round, taking fifth place overall. On the men's team, 4 foreign countries were represented. Leading the swimmers were Barry Stipe and David Geraghty. Stipe placed fourth in the 100-yard backstroke and set a school record in the 200-yard backstroke, missing participation in the nationals by less than a second. Stipe's record in the 200-yard was 20.43. Geraghty did well in the 1650 freestyle, placing sixth. Geraghty also placed fifth in the 200yard backstroke.

"This was a very positive season," says Clint Dodd. "We didn't have stars as a whole, but the teams were fun to coach. The men just missed beating Occidental, a team with four All Americans, and did defeat UC Riverside, a much larger school." change," one said hopefully.

Guests drifted in, discussing the lecture by Maxine Singer, president of the Carnegie Institute, who had talked on "Line 1. Family of Human Transposable Elements." They had been listening to one of three lectures in the "Women in Science" Centennial series that is sponsored by Caltech, the Caltech Y, the Society of Women Engineers, Women in Science and Engineering, the Organization for Women at Caltech, ASCIT, and the Graduate Student Council.

"The whole community response to the series has been very good—better than I expected," said Lucy Guernsey, director of the Caltech Y and one of the series sponsors. "More than 100 people came to hear Ann Fausto-Sterling. Some of them stayed for two hours after her talk to argue about the ideas she



# New Y director heads vigorous program

"I fell in love with the Caltech students."

And that, says Lucy Guernsey, is why she left a job created for her at Fuller Theological Seminary to become director of the Caltech Y in 1989.

The dynamic brunette, who had been director for student concerns at Fuller, found the young people at the Institute different from what she had expected. "My initial impression was that Caltech tends to be isolated, and its students not that interested in getting involved," says Guernsey. It was wonderful to discover how many do care deeply about social, political, and environmental issues, and about their fellow classmates." Guernsey became a Pasadenan in 1980, two years after her husband, Dennis Guernsey, accepted a faculty position at Fuller. With their two daughters, Sheryl and Shannon, they left Yorba Linda, after two years during which Dennis Guernsey commuted. In Yorba Linda, Guernsey had been a social worker for an adoptive agency. Her family welcomed the move to the Pasadena area. "More and more, we had become convinced that we wanted to be in an ethnically diverse environment," she says. "In southern California we live on the Pacific rim, and we wanted to experience some of the diversity that's characteristic of the region." Within a month after the move,

Guernsey was asked to become registrar at Fuller, and this career move motivated her to begin a master's degree in higher education administration at Cal State Los Angeles. A reputation for making registration fun and for having a high degree of commitment to the students led to her next position as director for student concerns. The new role also led her to seek a graduate degree in student development at Azusa Pacific University. She finished that degree in 1985, after two years as a full-time employee and a full-time student. "For those two years," she says, "my family put up with a raving maniac." Guernsey was having no thoughts of making a career move when she received a call from Marshall and Marguerite Ernstene, personal friends and members of the Caltech Y Board, in the summer of 1989. "Get your resume together," they told her. "We want to tell you about a job that we think would be wonderful for you." As the interview process proceeded, Guernsey became increasingly interested in the position. "From 1946 to 1976, the Y was shaped by Wes Hershey," she says. "He and the Y were doing student-life activities before there was a student-life movement. In the late 1930s, anyone exploring university campuses across the country would only have found academic programs."

Another reason for her growing interest was her fondness for young adults. "I really believe in them," she says. "I can't think of a better way to spend my life than to help them develop their potential. We have a great staff and a supportive board of directors here. And the environment offers a wonderful place to grow and develop."

Guernsey wondered whether she might find the Y no longer as necessary as in its earlier days, but she discovered variety of reasons. The academic environment at Caltech is intense, and this makes it important to have nonacademic options for students. As Wes Hershey once said, 'The Y tries to round out the squares, make lounge lizards out of snakes, and politicians out of hermits, and activists out of pacifists." It brings fun and energy to the campus, and helps young adults develop during the years that are so important in shaping their identity."

This year, under Guernsey's leadership, a major focus of Y activities has been to get students involved in volunteerism. Twenty students have been working with the Pasadena Unified School District, tutoring youngsters after school. Several Techers have signed up to serve on Saturday nights as a part of the bad-weather shelter team that checks in homeless people to stay overnight at the Pasadena First Covenant Church. Thirty students worked at Union Station on Easter and Thanksgiving, serving dinner to the homeless. A work team from campus helped at LaCasa, an institution for homeless children, painting fences and cleaning the yard.

A unique experience this year pairs a group of Caltech students with young people from a neighborhood with many social problems. The two groups joined in six days of Outward Boundfacilitated mountain climbing activities that challenged participants to take risks. "The first experience," says Guernsey, who was a participant herself, "was to blindfold ourselves and to climb up a rock face into a cave. The whole experience offered wonderful opportunities to build confidence working together as teams, doing things one person couldn't do alone." Two other programs are planned for this spring.

The Y Executive Committee showed a special interest in debates this year, and this led to a series of on-campus debates by authorities in their field.

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that "it is more viable than ever, for a

Continued on page 7



A climber scales a rock face at Red Rock Canyon during a Caltech Y mountainclimbing expedition that paired Caltech students with young people from an at-risk neighborhood.

#### Continued from page 1

financial and business managementand earned a reputation for being a nitpicker, giving emphasis to the tiniest details.

By 1922 Robert Millikan was aboard, and Arthur Fleming had reached the age where he was thinking of estate matters. Millikan was a most persuasive fund-raiser. Fleming gave his entire estate to the Institute, retaining for himself only an annuity and management of the estate. His Sugar Pine Lumber Company was sold-to Caltech's benefit-except for 160 acres of forest transferred directly to Institute ownership.

I was a freshman in 1923, and I recall the daily arrival of Fleming's Hispana Suiza sedan-with liveried chauffeur-which parked in the alley behind Throop Hall while Fleming went upstairs to see Dr. Millikan. A student saying of that time was, "Founded by Millikan, funded by Fleming." During the Depression of the thirties, however, Fleming's annuity defaulted, and his personal income was insufficient. Caltech supported Fleming until he died in 1940 at the age of 84.

As to Caltech's forest property, from time to time over the years, the U.S. Forest Service wanted to get custody of the Institute acreage in order to provide forestry management and to develop a recreational area adjacent to the Nelder Grove campground. The first of their proposals was made in 1926. After the matter was discussed by Caltech's board of trustees, it was decided (on a motion by Mr. George Patton-father of General George Patton-and seconded by Mr. Dabney-donor of Dabney Hall) that the property be held and that the largest three trees be named for Millikan, Hale, and Noyes. (No name plates were provided.)



Another proposal was made in 1962 and another in 1966. During the latter year, Caltech's treasurer, Ivan Betts, and I, together with our wives, decided to visit the property. As far as we knew, we were the first people from Caltech to make that trip since 1922. We stayed overnight at Bass Lake, and the next morning were driven to the propertyin a Jeep-by a Forest Service representative. We were accompanied by a lady reporter/photographer from the Fresno Bee. I still have a copy of her feature story that appeared in the paper.

on the Caltech

property,

At that time, the records showed that Caltech's parcel was only 20 acres! We saw the five specimen-size trees (giants), with diameters ranging from 108 to 220 inches, and heights from 190 to 206 feet. We also learned that a north-south ridge runs through the Caltech property, and that the westerly portion had burned in the twenties and had reseeded itself. It was again a beautiful forest of Sequoia giganteas, some 75 to 80 feet in height.

It was to be 24 years before I saw Caltech's forest again. Last year in September, my wife, Carmen, and I again headed for the Nelder Grove area. With us this time were Stan Johnson, alumnus of the class of 1933, and his wife, Mary, and Giles Hall, retired staff member of Caltech's Industrial Relations Center.

To reach the Nelder Grove campground, we left Highway 41 at Sky Ranch Road and drove eight miles to our camp. Our hosts, retired foresters John and Marge Hawksworth, visited us at our campsite that night, and the next morning, John drove Stan, Giles, and me to the head of the Shadow of the Giants trail. We followed the trail to a point nearest the northeast-corner stake of the Caltech property. John now believes it may be 40 acres instead of 20! There we started uphill through a jungle of fallen timber and forest debris. No trail! Stan, who was having trouble with his Achilles tendon, stayed behind. The going was really rough. John led us to the five giants, one by one. He pointed out one huge stump and the felled trunk belonging to it. Only a short section of the tree had been hauled away-many years before. That short section had become fence posts or grape stakes. What a wasteful extravagance! We saw that one of the Caltech giants has a deep burned cavity on one side. As is, it is probably the second largest sequoia in the world, if measured by girth rather than height. John pointed out how debris collects on the uphill side of a giant, providing fuel that might burn for days during a fire,

eating its way into the slow-burning sequoia.

We discussed access to the Caltech property. With Forest Service assistance and the use of prison labor that the Forest Service often employs, John suggested that it would be possible to clear a wide strip up the ridge, leaving beneficial ground cover that could be cleared by bulldozer for a fire trail in case of a nearby fire. It might even be used by Jeeps occasionally. But, because of the steep terrain, there appears to be little possibility of developing a campsite on the Caltech property.

Going back down the slope to the Shadow of the Giants trail was as difficult as going up. In all, the round trip from the trail took about an hour and a half. Withal, we found the Nelder Grove area unique and very, very interesting. Those giant sequoias

This stake marks the northeast corner of **Caltech's** property.



captivated us, and we want to go back and learn more.

I returned home with a few ideas regarding the property: that a title search should be made to trace ownerships (since the original grant of 1922 was for 160 acres); that the two other giants should be named; that appropriate plaques should be provided for all five trees; that the possibility of providing access should be pursued; and that the property be given an appropriate name.

Now, a few months later, some of the ideas have been turned into action. Caltech's property manager has arranged for a title search to trace how the original 160 acres became 20-or 40. The Alumni Association and the administration are working together toward high visibility and recognition of this historically and ecologically invaluable resource.



# Campaign Report

# ACTIVE PHASE OF THE CAMPAIGN FOR CALTECH

#### Gordon & Betty Moore Pledge \$16.8 Million

The Campaign for Caltech, the Institute's first major fund-raising initiative since 1974, was announced formally March 11 at the Regent Beverly Wilshire Hotel amid gala festivities marking Caltech's 100th birthday. The campaign's objective is to raise \$350 million in endowment, capital gifts, and operating funds by the end of 1993.

Spirits at the party ran high as alumni, faculty, students, and friends remembered major accomplishments of the past but also celebrated bright prospects for the future and the success of this campaign. Ruben Mettler, chairman of the Board of Trustees, and President Thomas E. Everhart announced that commitments of \$120 million already have been pledged, including a lead gift of \$16.8 million from Intel Corporation cofounder Gordon E. Moore and his wife Betty, a \$4.7 million gift from the Carl F Braun Trust for a new campus athletic facility, and a \$3 million challenge grant from alumnus Hugh Colvin.

The Moore gift will fund a new five-story electronic materials and structures laboratory that will contain muchneeded classrooms, labs, and office space. A rapidly expanding area of study, research in electronic materials and structures has produced computer chips, tiny electromechanical or electro-optical devices, and new high-performance materials leading to improved information systems. Electrical engineers, computer scientists, materials scientists, and applied physicists are among the faculty whose research will be carried out in the new building.

Trustee Gordon E. Moore (PhD '54) and his wife, Betty, have pledged a lead gift for the campaign — funding for a new electronic materials and structures laboratory.

"Gordon is one of the electronics industry's most gifted leaders and one of our most distinguished alumni," Everhart says. "He understands that while Engineering and Applied Science is only one of six divisions at Caltech, more than 50 percent of our undergraduates and 40 percent of our graduate students are enrolled in engineering and



applied science programs, causing considerable overcrowding. Gordon and Betty Moore's latest generosity will provide much needed laboratory and office space that will encourage the first-class contributions to knowledge and creative design that have been a hallmark of Caltech."

John Seinfeld, Louis E. Nohl Professor and chairman of the Division of Engineering and Applied Science, says: "The world has witnessed a great revolution with the development of semiconductor-based information technology. The new laboratory will promote the continuation of that revolution by providing Caltech electrical engineers, materials scientists, computer scientists, and applied physicists with the facilities they need to grow and flourish.

"Caltech is uniquely suited to lead the continuation of this revolution," Seinfeld adds. "The new laboratory will allow us to consolidate our strength and expand our efforts in electronic materials and devices. Scientists and engineers already at the forefront of the field will be brought together in working proximity, which will increase opportunities for the multidisciplinary connections that have become vital to success in modern research and absolutely essential to the Institute's leadership position in computation and neural systems and in biotechnology."

Gordon Moore earned his PhD in chemistry from Caltech in 1954 and cofounded Intel in

1968. In 1979 he became chairman of the board and chief executive officer of Intel, a position he held until 1987. He has served on Caltech's Board of Trustees since 1983.

The Campaign for Caltech's overall goal of \$350 million includes \$100 million in endowment. The largest share of that amount is targeted for support of faculty, researchers, and students, whose talents contribute so much to the Institute and its endeavors. *Continued on back* 

#### A MESSAGE FROM THE CHAIRMAN



March II was a great night. What a birthday

party!

I can't think of an

institution more worthy of celebration. A review of Caltech's first century of accomplishments inspires great appreciation for what mankind can achieve, but even more, great hope for what welleducated men and women will achieve in the future.

As chairman of The Campaign for Caltech, I will be asking each of you to help us toward our goal of \$350 million. Our aim is to assure Caltech's continuing preeminence in scientific and engineering education and research during the 1990s and into the next century. Providing the funds Caltech needs to remain at the leading edge will be extremely important to the advancement of science and engineering throughout the world.

The campaign has been received enthusiastically in every constituency of the Caltech community — faculty, alumni, staff, students, and friends. We announced the public phase of the campaign March 11 with \$120 million in gifts and pledges already in hand. Virtually every trustee has made or will make a Top left: Taking special pride in Caltech's birthday party are, from left, Trustee William Kieschnick, his wife, Keith Ann, Master of Ceremonies Walter Cronkite, Luanne Wells, and Trustee Frank G. Wells. Frank Wells and the Kieschnicks cochaired the dinner committee.

Top right: R. Stanton Avery (left), chairman emeritus of the Board, and his wife, Ernie, with Mrs. Frederick G. Larkin and Richard C. Gilman, reflect the evening's high spirits.

Bottom right: Deep in preprandial discussion are Hugh F. Colvin (BS '36) (left), creator of the Alumni Centennial Challenge, and Arnold O. Beckman (PhD '28), honorary chairman of the campaign and chairman emeritus of the Board of Trustees.









Top: Exchanging views: Master of Ceremonies Walter Cronkite (left) and Sunney I. Chan, professor of chemical physics and biophysical chemistry and chairman of the Caltech Centennial Steering Committee.

Doris Pankow, president of The Caltech Associates, chats with her husband, Charles (center), and Thomas W. Anderson, vice president for Institute Relations.

Below: Four Caltech presidents celebrate achievements of the past, present, and future: (from left) former presidents Marvin L. Goldberger, Harold Brown, Lee A. DuBridge, and current president, Thomas E.



Above: A man with a lifetime of Caltech memories, Rolf H. Sabersky (BS '42, MS '43, PhD '49) (left), professor of mechanical engineering, emeritus, and a member of the Board of Directors of the Alumni Association, pauses with his wife, Bettina, and E. Micheal Boughton (BS '55), Association president.

personal commitment to the campaign.

We invite each of you to join these

generous people in this unprecedented

opportunity to help influence the course

of the 21st century and Caltech's second

century of discovery.

James W. Glanville





Chairman of the Board Ruben F. Mettler (BS '44, MS '47, PhD '49) shares a moment with his wife, Donna.



### The CAMPAIGN for CALTECH A SECOND CENTURY OF DISCOVERY



Chairman of the Campaign James W. Glanville (MS '46, ENG '48) with President Thomas E. Everhart (left) and Trustee Benjamin M. Rosen (BS '54) (right). All three serve on the campaign executive committee.

#### 1 OOTH BI HDAY CALTECH!

B ejeweled and bedecked, some 700 glittering guests — including Nobel prizewinners, industry executives, and Caltech faculty, students, and benefactors — gathered at the Regent Beverly Wilshire Hotel March 11 to help celebrate Caltech's 100th birthday. Walter Cronkite, serving as master of ceremonies, narrated video highlights of Caltech's first 100 years. "Caltech is a remarkable institution," he concluded. "You don't have to wait for the evening news to know that." Distinguished Caltech faculty Harry B. Gray, Arnold O. Beckman Professor of Chemistry and Director of the Beckman Institute; Leroy E. Hood, Ethel Wilson Bowles and Robert Bowles Professor of Biology and Director of the Center for Molecular Biotechnology; Carver A. Mead, Gordon and Betty Moore Professor of Computer Science; and Edward C. Stone, vice president and director of the Jet Propulsion Laboratory and professor of physics, gave guests a glimpse of pioneering research efforts now under way at Caltech that could have enormous impact on the way we live and view our world in the 21st century. As President Thomas E. Everhart pointed out, the Caltech community provides fertile ground for brilliant minds. "One outstanding mind, properly educated and motivated, properly supported and stimulated, can discover and create a thousandfold or a millionfold more than a mind that is merely good." Everhart asked five of Caltech's outstanding young minds — Eugene Lit ('91), Andrea Mejia ('92), Jack L. Prater ('91), William J. Swanson ('91), and Regina Dugan, a graduate student in mechanical engineering — what has been special about their experience at Caltech. These students came expecting to grow academically, but each expressed surprise to find such abundant opportunities and encouragement to grow in other areas as well, through student government, athletics, and, yes, even music and the humanities. The talents of Caltech students cover an amazing range, as Scot Fagerland ('93) proved. The sophomore engineering and applied mathematics major demonstrated a language he developed by reorganizing words so that the letters appear in alphabetical order. "Good evening, Mister Cronkite" became "Dgoo eeginny, Eimrst Ceiknort." He speaks spontaneously, translating as quickly as normal speech — with no rehearsal. Whatever the frontiers being explored, the essence of the Institute was captured in an original song performed by the Caltech Glee Clubs: "In this atmosphere so conducive to searching for the elusive . . . . "Harry Gray showed guests that science can be fun and accessible to all. How? Through a scientific experiment, of course. On cue, guests unwound triangular paper clips of "memory metal" and watched them spring back to their original shape when dipped in hot water. The clips were made of Nitinol, a compound of nickel and titanium that "remembers" the shape originally formed in the manufacturing process and reverts to it when heated. A bit of science to take home to the kids. Trustee James W. Glanville, chairman of the campaign, announced the Institute's intention to raise \$350 million by the end of 1993 to assure Caltech's continuing leadership in science and engineering education and research. Trustee Chairman Ruben F. Mettler welcomed guests, which in-The Caltech Glee Clubs cluded four of the 20 Nobel laureates among Caltech's faculty toasted the Institute with an original composition, "Caltech 100th." and alumni - William A. Fowler, Murray Gell-Mann, Donald A. Glaser, and Charles H. Townes - and Crafoord laureate Gerald J. Wasserburg. A fifth Nobelist in the audience, Yuan T. Lee, is a Caltech trustee. Three former Caltech presidents also attended — Lee A. DuBridge, Harold Brown, and Marvin L. Goldberger - as well as two former Caltech trustee chairmen, Arnold O. Beckman and R. Stanton Avery. The birthday party was a huge success, thanks in great part to the work of the dinner committee: Frank G. Wells, Keith Ann Kieschnick, and William Kieschnick, cochairs, and members Kay Onderdonk, Nancy Petersen, Sheila Weisman, and Walter Weisman.

Top: Joseph B. (Ben) Earl (BS '44) (second from left), former president of The Caltech Associates and key volunteer for the Alumni Fund, compares notes with his wife, Pat, and fellow alumni and Associates E. Eric Johnson (EX '48) (left) and F Otis Booth, Jr. (BS '44).

Bottom: Anna Jaeckel ('92), president of the Women's **Glee Club, introduced Ruben** F. Mettler, chairman of the **Board of Trustees.** 







During its first 100 years, Caltech's scientists discovered the positron, the nature of the chemical bond, quarks, left-brain/rightbrain functions, and the dangers of lead in the environment. They helped develop earthquake science, the foundations of molecular biology, and the principles of modern aviation and jet flight. With the continued generosity and vision of private donors, Caltech steps confidently to the starting gate of its second century of discovery.

#### CALTECH RECEIVES \$1 MILLION FROM ARCO FOR EARTHQUAKE RESEARCH/RESPONSE SYSTEM

ne outstanding
mind, properly
educated
and motivated,
properly
supported and
stimulated,
can discover and
create a
thousandfold or

a million-

fold more than

a mind that

is merely good.

– Thomas E.

Everhart

Arco Foundation will significantly boost Caltech's ability to quickly determine the size and location of southern California earthquakes and to speed life-saving information to disaster relief agencies.

The ARCO grant will fund Phase II of a \$4.2 million research and publicsafety system called TERRAScope, which promises to be the most advanced seismological system yet developed.

TERRASCOPE'S first phase, the Whittier Advanced Geophysical Observatory, funded by the L. K. Whittier Foundation, already is up and running with five geophysical stations located in heavily populated areas throughout southern California.

Phase II, slated for construction over the next two years, will include a cluster of three permanent and three semipermanent geophysical stations, also to be located in heavily populated southern California sites. This network will be called the ARCO Advanced Geophysical Observatory.

When completed, the ARCO and Whittier observatories will allow Caltech scientists to assess the size and location of most earthquakes that occur in the

#### JOIN THE CENTENNIAL CHALLENGE

Distinguished alumnus and former president of the Caltech Associates Hugh F. Colvin has made one thing perfectly clear. He wants every Caltech alum to support the Institute and The Campaign for Caltech through generous gifts to the Annual Fund — and he has issued a \$3 million challenge to encourage them to do so. The Challenge is effective for gifts made between January 1, 1990, and December 31, 1993. Gift comparisons will be made on prior Fund-year giving. The Fund year runs from July 1 to June 30. The maximum amount to be matched per person per year is \$25,000. Here is how it works:

region. The geophysical stations will telemeter seismic data to Caltech's Seismological Laboratory in Pasadena, where scientists will process the data and be able to provide nearly immediate information about the size and intensity of tectonic disturbances. Such information will enable emergency personnel to respond more quickly to areas likely to have experienced the greatest damage.

The geophysical stations are designed to withstand even the largest temblors and will provide continuous and immediate data to Caltech during and after an earthquake. The need for such a capability became apparent during the 1987 Whittier Narrows earthquake. The force of the temblor drove all of Caltech's instruments off-scale and delayed transmittal of information concerning the quake to emergency personnel.

"The entire southern California community will benefit from Caltech's improved ability to pinpoint earthquakes and guide emergency response," says Lodwrick M. Cook, ARCO chairman and chief executive officer. "Caltech is already the best in the world in earthquake research, and TERRASCOPE will make them that much better."

• Any *increased* portion of a gift from an alum will be matched two to one. If an alum who gave \$100 last year increases the gift to \$125 this year, Colvin will contribute another \$50 to the Institute.

• Any new or increased portion of a gift from a *young alum*, someone who earned a B.S. degree at Caltech within the past nine years, will be matched three to one. For example, a young alum who increases his or her Annual Fund contribution by \$20 triggers another \$60 unrestricted gift from the Centennial Challenge. A new gift of \$25 from a young alum means the Institute receives another \$75 from Colvin's Challenge. TERRASCOPE will provide data to Caltech seismologists and to southern California's new Earthquake Center, funded by the National Science Foundation. The Earthquake Center is a consortium of seven universities and the U.S. Geological Survey. Caltech will operate the primary data center in Pasadena.

#### CAMPAIGN LAUNCHED WITH \$350 MILLION GOAL

Continued from cover

The goal includes \$20 million for endowed professorships, \$10 million for postdoctoral fellowships, \$15 million for graduate fellowships, and \$15 million for undergraduate scholarships, plus \$30 million in unrestricted endowment funds and \$10 million for an endowed venture fund to support exciting new research directions.

In addition, the campaign seeks \$115 million for capital projects — \$105 million for new buildings and \$10 million to renovate aging existing facilities.

A goal of \$135 million has been set for current operations and new and existing programs.

The campaign objectives have been shaped by an in-depth aims-and-needs study recently completed by Caltech faculty. In addition to pinpointed areas of need, campaign contributions will support six broad areas of concentration identified as focal points for future Caltech research and teaching programs:

Foundations of Life and Mind;

• Any new gift from an alum who has not contributed to the Annual Fund in the past Fund year (in this case, July 1, 1989-June 30, 1990) will be matched two to one. For example, a gift of \$50 will result in an additional \$100 gift to the Institute from the Centennial Challenge. The Centennial Challenge invites every alum to participate in The Campaign for Caltech in whatever way possible. The Annual Fund is an important source of unrestricted funds, which are essential to the overall health and strength of the Institute. a construction and second second second second

- Informatics and Complex Systems;
- Molecules, Materials, and Microdevices;
- ♦ the Universe;
- Earth and Environment; and

 Human Values and Institutions. Guiding the campaign effort are
Campaign Chairman James W. Glanville,
Caltech trustee and general partner with
the investment banking firm Lazard
Frères, and Honorary Chairman Arnold
O. Beckman, trustee chairman emeritus
and founder of Beckman Instruments.





Continued from page 5

Drug-legislation problems in the educational system, and environmental issues, were among the topics featured. Two community meetings were held as a result of the Persian Gulf War.

As usual, the Y sponsored decompression on the Saturday and Sunday nights prior to finals week. A magician and a comedian entertained, and on Saturday the students played the dating game. Contestants chose a date based on answers from persons behind a screen, and the couple won tickets for and Al Schaff, vice president of Ametek. Still another experience for the Y leaders has been the conferences they've attended with student leaders from other schools, to share experiences and help motivate them to experiment with new programs on campus.

Meanwhile, the Y has continued its ongoing services of offering discount movie, theater, and sporting event tickets, renting camping and backpacking equipment, maintaining a campus lostand-found center, and offering emergency student loans, traditional functions over many years. Other staples have been backpacking trips to the High Sierra, noon concerts, ballroom dancing lessons, and the broom-ball competitions each term.

"We see our goals as offering community service, campus service, leader-



A pinata prepares to meet its demise at a party for students in summer session at Lucy Guernsey's home.

dinner or a movie. Cartoons continued to be popular decompression movie subjects.

Count Robert Begouen, an archaeologist specializing in Ice Age art, was featured on the Distinguished Speaker Series, as were an Israeli journalist and writer Ray Bradbury. The Y helped coordinate the Women in Science Focus, which had as sponsors the Organization for Women at Caltech, the Graduate Student Council, and the Association of Caltech Students. Maxine Singer, a molecular biologist and president of the Carnegie Foundation, was one of the participants.

Again this year, the Y sponsored the Annual Leadership Institute in cooperation with the Industrial Relations Center. Forty-four student leaders participated in the program, which featured workshops on how to lead meetings, how to solve problems, and how to organize time and work together as a group. For the Leadership Institute, the IRC tailored the programs it created for business leaders so they would be appropriate for students. "In the future, we anticipate two programs," says Guernsey, "one for graduate students and one for undergraduates." Another Y-sponsored program has been a series of entrepreneurial dinners. At these events, leaders in their field share their successes and pass along ideas to members of the audience. Among the speakers have been Joe Coulombe, the founder of Trader Joe's,

ship training, social and recreational events, and cultural and educational events," says Guernsey. "We try and create programs for the campus in all those areas.

"But most of all, we feel that the Y's purpose is to help students better understand themselves and their place in the world."

And that goal should give Lucy Guernsey plenty of interesting challenges for some time to come.

### **Centennial Notecards**













*Centennial Notes* are printed on folded cards with charming old pictures of the Caltech campus. They come with envelopes in packages of twelve (two cards each of six images). To order, please complete the form below and return it with your check to:

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At the symposium in honor of his 90th birthday, Linus Pauling visits the class of Nathan S. Lewis, professor of chemistry.



# ALUMNI

# Seminar Day research seminars announced

From robotics to lost civilizations to the genome initiative, Seminar Day will offer alumni and guests a rich selection of seminar lectures. Speakers and their topics include: James M. Bower, associate professor of biology, on *Caltech and Elementary School Science;* Joel W. Burdick, assistant professor of mechanical engineering, *Robotics: The Lunatic Fringe;* Peter B. Dervan, Bren Professor of Chemistry, A Chemical Approach to Reading the Genetic Blueprint; Charles Elachi, assistant lab director for space science and instruments, JPL, In Search of Lost Civilizations.

Doug Flamming, assistant professor of history, Measuring Worker Satisfaction: Caltech's Industrial Relations Center and its Employee Opinion Polls 1945-1970; Leroy E. Hood, the Ethel Wilson Bowles and Robert Bowles Professor of Biology and director of the Center for Molecular Biotechnology, The Genome Initiative, Biology, and Medicine of the 21st Century; Steven E. Koonin, professor of theoretical physics, Supercomputers—A Microscope for the Subatomic World; Julia A. Kornfield, assistant professor of chemical engineering, A Short Talk About Long Molecules; Elliot M. Meverowitz, professor of biology, Molecular and Genetic Models for Flower Development; Duane O. Muhleman, professor of planetary science, Flash Photography of Mars from Earth; Frederick J. Raab, assistant professor of physics, Lasers, Mirrors, and Gravita-

# Frank Press to speak at general session

Frank Press, president of the National Academy of Sciences, is recognized internationally for his pioneering contributions in geophysics, oceanography, lunar and planetary sciences, and natural resources exploration. He will speak at the Seminar Day general session at 2:15 p.m. in Beckman Auditorium on "Global Warming: What To Do About It?"

Press has been a leader in major national and international projects, the most famous of which is the International Geophysical Year, which he helped organize. At Caltech, he became professor of geophysics in 1955, and is perhaps best remembered for being director of the Seismological Laboratory from 1957 through 1965, when he left to become head of the Department of Geology and Geophysics at MIT. In 1981 he was elected to his present position, and was reelected in 1987 to a second six-year term.

As NAS president, Press continues a long career of public service, in addition to his distinguished scientific work. He has served by appointment on committees in the Kennedy, Nixon, Ford, and Carter administrations, and was a member of the U.S. delegation to the nuclear test ban negotiations in Geneva and Moscow. He helped organize and gave impetus to the International Geophysical Year, the first coordinated worldwide attempt to measure and map various geophysical phenomena, a decade-long effort that involved international explorations of Antarctica and the oceans.

His unique distinction lies perhaps in the dual contribution of the impact of his scientific work on the development of modern geophysics and the influence of his personal leadership in national science planning and administration.

## From the alumni president

By E. Micheal Boughton

By now, you have received information on the Centennial Seminar Day/reunion weekend, and realize that it will be a sensational four days. Beginning Thursday, May 16, with the 50th reunion of the class of 1941, the weekend will reach a climax with the spectacular all-classes reunion at the Ritz-Carlton Huntington Hotel (formerly the historic Huntington) the evening of Saturday, May 18. Sandwiched in between are countless activities in which to participate—many of them new.

If you haven't been back to the campus for awhile, you won't want to miss "The Heritage of Caltech's Early Architecture," a walking tour and slide presentation of the campus. You will be impressed with the blending of the old architecture with the new. A tour of the Jet Propulsion Lab will also be available on Friday afternoon.

There are several special-for-1991 activities for alumni and guests. One is an alumni/student barbecue to be held on Friday, May 17, in Dabney Garden with seating by house or option. This will be a great opportunity to visit with former housemates and current students. After dinner, visits to the houses should bring back memories of your student days at Tech. Later Friday evening, you may want to participate in the alumni/student bridge tournament in Dabney Lounge, or enjoy the Glee Club Concert. The concert is always a favorite and the special Centennial performance will be expanded to include the Caltech/Occidental Orchestra.

Friday afternoon is Lab Day. The Divisions of Biology, Chemistry, and Physics, Mathematics and Astronomy, and the department of electrical engineering, will have labs open for viewing, providing you with an opportunity to check out current research at Caltech.



I hope that during the festivities you will take the opportunity to stop by the Red Door Cafe located next to Chandler Dining Hall. Run by graduate students, its cozy atmosphere offers a respite from planned activities. The Red Door is open Monday through Friday, 2:30 to 5:30 p.m.; Tuesday and Wednesday 9 to 11 p.m.; and Thursday and Friday 9 to midnight. You may not want to wait until May to drop by. Alums are always welcome.

Saturday, Centennial Seminar Day, will bring a host of activities, including expanded lectures and exhibits, tours of the Huntington Library, and a wine reception at the end of the day.

Then put on your party clothes and come to the big Centennial reunion celebration at the Ritz-Carlton Huntington. Seating at dinner will be by class, but this all-classes reunion offers the opportunity not only to see classmates, but to renew acquaintances from other classes as well.

Several classes have elected to organize special activities during the weekend. If yours is one, you should have already received information.

This is a weekend you won't want to miss. Caltech will have only one Centennial celebration, and it is in your lifetime and mine! I look forward to meeting you there.

tional Waves.

Wallace L. W. Sargent, Ira S. Bowen Professor of Astronomy, Progress on the Keck Telescope; Stephen Saunders, senior research scientist, JPL, The Geologic Exploration of Venus; Thayer Scudder, professor of anthropology, What It Means to be Dammed; Robert P. Sharp, Robert P. Sharp Professor of Geology, Emeritus, Caltech from the Inside; Stephen R. Wiggins, assistant professor of applied mechanics, The Discovery of "Chaos" and Its Present and Future Impact on Science and Technology.

Three undergraduate students will discuss their summer research projects as Summer Undergraduate Research Fellowships (SURF) students. They are Joseph Bach, *Feasibility Testing of the Martian Snake;* Jeannie Barrett, *Turning a Synthetic Polymer into a Catalyst;* and Rajeev Ram, *Strained V-Groove Quantum Well Lasers.* 



A performance of the campus production, Working. followed by dessert at the Alumni House, created a stimulating evening for a group of alumni. Among them were: William M. Whitney (BS '51); Henry Shapiro (BS '50, MS '51, Eng '52); Mrs. Shapiro; and Donald P Wilkinson (BS '48).

# Alumni Activities

April 6-Joshua Tree camp-out with Robert P. Sharp, the Robert P. Sharp Professor of Geology, Emeritus.

April 15-Tri-state chapter event: Charles Plott, Edward S. Harkness Professor of Economics and Political Science, guest speaker.

April 16-Washington, D.C. chapter event: Jeffrey Dubin, associate professor of economics, guest speaker.

May 7-Denver chapter event: Jean-Paul Revel, Albert Billings Ruddock Professor of Biology, guest speaker.

May 16-Class of 1941 50th reunion dinner, the Athenaeum.

May 17-Half Century reception and luncheon, the Athenaeum.

May 17-Class of 1951 40th reunion dinner, the Athenaeum.

May 17-Alumni/student barbecue (seating by House), Dabney Garden.

May 17-Student House receptions for alumni.

May 18-Centennial Seminar Day, registration Dabney Lounge.

May 18-All-classes reunion dinner, The Ritz-Carlton Huntington Hotel.

May 19-Caltech's annual Sports Day. For information, call Karen Carlson, 818/356-6593.

May 31-Boston chapter event: Kerry E. Sieh, professor of geology, guest speaker.

June 20-Alumni Association annual meeting and honorary alumni dinner, the Athenaeum.

June 23-30—Yellowstone travel/study program with Robert P. Sharp, the Robert P. Sharp Professor of Geology, Emeritus, and Leon T. Silver, the W. M. Keck Foundation Professor for Resource Geology.

July 11-Solar eclipse viewing, Big Bear Solar Observatory.

# Owens Valley/Yosemite trip open to alumni

Don't miss out on the Alumni Association travel/study program through Owens Valley and Yosemite National Park scheduled for September 27-30. With California now in the fifth year of drought, the trip will focus on water and power resources, particularly with respect to southern California, and on the flora and fauna of the area, including the vegetation recovery from several forest fires. Le Val Lund (BS '47), the former engineer in charge of the Los Angeles Aqueduct, and Suzanne Granger, associate curator of the Los Angeles County Arboreta and Botanic Gardens, will lead the group.

Highlights of the program will include a visit to Fossil Falls, where remnants of a water course from 15,000 years ago are still visible, and Caltech's

Owens Valley Radio Observatory. In addition, participants will observe the tufa (starkly shaped calcium formations) at Mono Lake, one of the oldest lakes in North America. After spending time exploring Tuolomne Meadows and Yosemite Valley, alumni will visit the Hetch Hetchy Reservoir, source of a water supply for San Francisco. At the conclusion of the trip, the group will take part in a once-in-a-lifetime experience at the dedication of five giant sequoias in Caltech's Nelder Grove, just south of Yosemite. (See article on page 1).

For more information about this travel/study program, please call Helen Shafran, program coordinator for the Alumni Association, at 818/356-8364.

#### **THE LEGEND LIVES!**



In celebration of Caltech's Centennial, the Alumni Association is offering a limited-edition two-volume boxed set of Legends of Caltech, and More Legends of Caltech. The soft-bound volumes are encased in a handsome leather-like gray box with the Centennial seal embossed in gold. Relive the pranks and exploits of Caltech students through the ages! To order your set, complete the form below and return with your check to:

of the Department of Civil Engineering at UC Berkeley led the tour.

earthquakes. Professor Vitelmo Bertero

Chapters maintain

Stimulating speakers brought out

chapter members to meetings across the

country during February and March.

Barclay Kamb, the Barbara and

the Colorado chapter members on

He described the way in which the

response of large ice sheets to atmo-

25 alumni and guests attended the

Orange County Chapter

row" was the title of the talk by

President Thomas E. Everhart at the Orange County Chapter meeting of the

Alumni Association. Some 48 alumni

and guests attended the dinner meeting on March 6 at the Pacific Club. The

talk generated many questions from the

in the future of Caltech and in the issue of science literacy at the elementary and

The Orange County Chapter is form-

ing an advisory committee to prepare for election of officers. Anyone interested in

A tour of the Earthquake Engineer-

ing Laboratory at the Richmond Field

and guests out for a field trip. The

facility includes a large "shake table,"

withstand such shaking as occurs in

used to test the ability of structures to

Station on March 9 brought 40 alumni

being on the committee can contact

Hans Linhardt, president, 714/646-

San Francisco Chapter

guests who were particularly interested

Stanley R. Rawn, Jr., Professor of Geol-

ogy and Geophysics at Caltech, spoke to

February 20, discussing "Disintegration

Mechanism for the Antarctic Ice Sheet.'

spheric warming may have major conse-

quences for worldwide sea level. About

"Caltech: Yesterday, Today, Tomor-

Chapter meetings are summarized

below.

meeting.

high school level.

5533.

Colorado Chapter

busy schedule

#### Chicago Chapter

Michael R. Hoffmann, professor of environmental chemistry at Caltech, spoke to the Chicago chapter members on "The Chemical Transformation of Chemical Compounds in Ultrasonic Fields of Water." His talk was at the Tower Garden Restaurant, Skokie, Illinois. Ed Seidman is the new chapter president.

September 27-30-Owens Valley and Yosemite travel/study program, with Le Val Lund (BS '47), civil engineer of water resources and earthquake engineering, and Suzanne Granger, associate curator, Los Angeles Arboreta and Botanic Gardens.

October 19-25-Hawaii travel/study program with Robert P. Sharp, the Robert P. Sharp Professor of Geology, Emeritus.

Unless otherwise indicated, for information, please contact Arlana Bostrom for chapter events at 818/356-8363; Patsy Gougeon for reunion and Seminar Day events at 818/356-8366; or Helen Shafran for trips and local social programs at 818/356-8364.

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# PERSONALS

#### 1925

ROBERT J. STANTON, EX, of Lake San Marcos, California, and his wife, Audrey, celebrated their 65th wedding anniversary on January 4 at the Hotel del Coronado, in San Diego. Joining the celebration were their children ROBERT J. STANTON, JR., BS '53, PhD '60, and Barbara, and their spouses. At the time of his retirement, Stanton was co-owner and president of Male & Stanton Corp., Printers/Stationers, in Los Angeles. Stanton and his wife have two children, five grandchildren, and ten greatgrandchildren.

#### 1932

MERIT P. WHITE, MS, PhD '35, has recently been elected an honorary member of the American Society of Civil Engineers.

#### 1938

DANIEL A. OKUN, MS, presented the first Allen Hazen Lecture to the New England Water Works Association on October 16, 1990. On May 13, he will give the second Abel Wolman Lecture, which is sponsored by the Water Science and Technology Board of the National Research Council. In addition, on June 24, he will receive the Abel Wolman Award of Excellence from the American Water Works Association.

#### 1944

WILLIAM R. DAVIS, MS '47, has retired from Lockheed Space Systems. He is now calling square dances and writing square-dance material, and is on the board of directors of the National Callers.

JOHN B. NELSON retired from Chevron Research & Technology Co. on July 31, 1990, after 43 years. He is living happily with his wife, Karyn, and younger daughter, Kirstin. His older daughter, Joanna, will enter Carleton College in September, after spending a year working and traveling.

#### 1946

JAY W. STUART, JR., MS '48, ENG '51, who at five feet six inches was point guard on Caltech's 1945 "B" basketball team, and who participated in alumni-varsity games from 1981 to 1987, played point guard for nine years with the Senior Olympics championship team. In 1984, his last year, he had the high score-19 points-and was pronounced MVP. On the same team with him were former Caltech varsity coach Carl Shy and Los Angeles sports writer Sam Baxter. Stuart is also a life member of the United States Badminton Association and plays in the annual U.S. Open Senior Championships. At age 65, following a left-hamstring pull and right-knee arthroscopic surgery, he played his all-time best in 1990, achieving consolation

Districts and as professor and director of environmental engineering programs at the University of Southern California. He has also served as a consultant to the Smithsonian Institution and the United Nations Development Program. He has published over 100 articles, and he has received many honors throughout his career.

#### 1959

JOSEPH M. COLUCCI, MS, of Clarkston, Michigan, has been elected both a fellow of the Society of Automotive Engineers (SAE) and a member of its board of directors for a three-year term. Colucci has spent his entire career at General Motors Research Laboratories, where he is currently head of its fuels and lubricants department. In his work he has pursued petroleumproduct improvements through research on fuels, engine oils, transmission fluids, and other lubricants, and the SAE, in electing him a fellow, cited "his sustained technical contributions to enhancing the compatibility of fuels with hightechnology automobile engines," and "his leadership in the search for gasolines that contribute to reduced emissions and clean air." Colucci also received the SAE's Forest R. McFarland Award in 1986 for his outstanding work organizing technical sessions, and he is a member of Sigma Xi and the American Association for the Advancement of Science, among other organizations.

#### 1962

RICHARD I. HESS writes, "I'm in my 25th year of employment with Logicon, Inc., the last several as VP and manager of the Analytic Applications Subdivision, providing mission planning software and services to the Department of Defense."

#### 1973

JONATHAN V. POST, of Altadena, California, and his wife, Christine Carmichael, (who has a PhD in solid-state physics), have a two-year-old boy, Andrew Carmichael Post, born January 24, 1989. "Between us," Post writes, "we have over 600 publications, presentations, and broadcasts to our credit. Two-thirds of us are professional science fiction, fantasy, science, and poetry authors in our nonaerospace 'spare time,'" while "the other one-third tells good stories but can't yet write."

#### 1974

REX V. GIBBONS, PhD, of Saint John's, Newfoundland, resigned in 1989 from his position as senior geologist with the Newfoundland Department of Mines, and was elected to the Provincial House of Assembly for the District of Saint John's West. Since May 1989 he has been Minister of Mines and Energy in the Newfoundland government. His wife, Marge, works for the Canadian Imperial Bank of Commerce, and his daughter Kim, a graduate of the Memorial University of Newfoundland, is a high-school science teacher. His daughter Emily and his son, Vince, are still in school. 10 1.0

Oct. 28. Tony is an associate professor of chemistry at Colorado State University, and Carla is president of a scientific software firm, both in Ft. Collins."

PAMELA LOGAN, MS '82, has sent a postcard from Xining, Qinghai Province, the People's Republic of China. "I've temporarily given up science for a stint of exploration and adventure, with the help of a Durfee Foundation Grant," she writes. "For two months I was riding a mountain bike around Yunnan Province, between Burma and the Tibetan Plateau. Now I'm getting ready to ride south along the eastern edge of the plateau, visiting Kumbum and Labrang monasteries and witnessing their New Year's festivities. I expect to be in West China for another six months or so."

#### 1982

RANDEL R. CASTLEBERRY and his wife, Jil Goebel, write that their son, Parker Ross Castleberry, was born on January 30.

#### 1983

KRIS SELLGREN, PhD, has been awarded the 1990 Newton Lacy Pierce prize, which is awarded annually by the American Astronomical Society to an outstanding observational astronomer under the age of 35. She is currently an assistant professor in the astronomy department at Ohio State University. Joining her in Columbus, Ohio, is DAVID J. ENNIS, PhD '82, who is working at the Ohio Supercomputer Center. Also with her are her two cats, Eowyn and Galadriel.

#### 1984

MARK D. LINDSAY, of Charlottesville, Virginia, received his PhD in experimental atomic physics from Harvard University in June 1990. In October he married Holly Ann Chung, who in June had received her EdD in educational administration, also from Harvard. Lindsay is a research associate in physics at the University of Virginia.

#### 1985

BRIDGET O'CALLAGHAN-HAY, MS, PhD '89, of Westminster, California, writes, "My husband, Jon, and I are happy to announce the birth of our second child, Maura, on August 17. Our son, Jonathan, really enjoys having his sister around. We never cease to be amazed at how the two children grow and interact with each other."

#### 1987

CORA Y. CHOW and ANDREW V. MILLER II, BS '88, were married at Dabney Garden on August 5, 1990.

# **OBITUARIES**

#### 1927

FRANK S. HALE, of Green Valley, Arizona, on December 6, 1990, of cancer. In 1940, as a reserve officer, Hale was called to active duty. In 1941 he headed all military construction on the Olympic Peninsula, and in 1943 he was reassigned to England, where he served on the staffs of Generals Patton and Eisenhower; among his responsibilities was the mapping of Omaha Beach, prior to the Normandy invasion. In later years he served on U.S. Navy construction and engineering staffs in Spain and at Port Mugu, California. A painter, he was a member of Artists 13. He was also a member of many service clubs and community organizations, and he was a certified duplicate-bridge director. He is survived by his wife, Helen; daughters, Sharon Graham and Betty Valles; sisters, Esther Hunick and Ruth Pitman; brother, Walter; seven grandchildren; and ten great-grandchildren.

#### 1928

GUY L. CHILBERG, MS '29, on December 24, 1990. From 1921 to 1970, Chilberg had a distinguished career with the Bell System. A lieutenant colonel in the U.S. Army during World War II, he served as division signal officer with the headquarters of the 42nd Infantry Division, in Salzburg, Austria. He was a volunteer consultant for Taiwan Telecommunications from 1971 to 1972 and was active in the Coronado Cays Yacht Club. He was a life member of The Associates and, during his Caltech years, a member of the Gnome Club. He served as freshman-class vice president, sophomore-class president, and, his senior year, student-body president; was a member of the freshman debating, tennis, and swimming teams; and earned three letters in varsity football. He is survived by two sons, George and Joseph; two daughters, Joyce Morse and Barbara Zink; six grandchildren; and one great-grandchild.

#### 1930

KATSUNOSHIN SUZUKI, of Tokyo, Japan, on December 26, 1990. After graduating from Caltech, Suzuki received his master's in mechanical engineering from Cornell. In 1934 he returned to Japan and went to work for Mitsubishi Electric Corp., from which he retired in 1985. Throughout his 85 years of life, he was noted as a man of gentle demeanor. He is survived by his two daughters in Japan and one son in California.

#### 1932

RAYMOND HOWARD GRIEST, MS '33, PhD '37, on November 17, 1990, of cancer, at his home in Rancho Bernardo, California. He was 81. He is survived by his wife of 51 years, Alberta Miller Griest, son Raymond H., daughter Joan Ellen Kunzler, granddaughter Wendy, and sister Peggy McClelland.

status in the three Super Grand Master events he entered: mixed doubles, doubles (with BER-NARD O. STEENSON, MS '48, PhD '51), and singles. A bicycling fall caused by a passing cyclist has forced Stuart to miss the 1991 championships, but his fractured shoulder is healing well without complications, and he expects to be back at play soon.

#### 1947

FRANCIS R. BOWERMAN, MS '48, director and chief engineer of Orange County's Integrated Waste Management Department, has received the Distinguished Engineering Merit Award of the Institute for the Advancement of Engineering. This award, one of the highest tributes an engineer can receive, was prompted by Bowerman's work defining and then implementing a solid-waste management program for Orange County; its landfill system is currently considered one of the most outstanding in the state of California. Bowerman has held a variety of positions over the years, including assistant chief engineer for the L.A. County Sanitation

#### 1981

JAMES J. ANGEL, of Oakland, California, is finishing up his PhD at Berkeley and will be taking a position as assistant professor of finance this fall at Georgetown University, in Washington, D.C. Hazelden Education Materials will be publishing his book, Giving Up the Food Game, this summer. "The book," he writes, "describes how I lost 110 pounds and kept it off for nine years." He and Amy Juliet Becker were married last July 4 in the Oakland Rose Garden, and honeymooned at Big Sur. He says hello to all his friends at Caltech.

CARLA J. CASEWIT, PhD, and ANTHONY K. RAPPÉ, PhD, of Fort Collins, Colorado, write, "We are thrilled to report that daughter Mollie, 4, now has a baby sister, Kelly, born

#### 1988

DAVID GOLDREICH, of Pittsburgh, Pennsylvania, and his wife, Deborah Tishman, "had their first child, Jamie Beth, on December 10, 1990. David is a grad student in financial economics at Carnegie-Mellon University."

#### 1989

BRADLEY A. SCOTT reports that, after graduating from Caltech, he spent a year working for Perkin-Elmer, seven months of it in a German branch of the company. While in Germany, he watched the Berlin Wall come down. He also improved his German considerably, and he spent a lot of time seeing Europe, especially Norway, before returning to the United States. He is currently at Boston University working on his master's degree in English.

#### 1990

PETER J. CAMPO, PhD, of Schenectady, New York, has joined the GE Research and Development Center as a control systems engineer.

#### 1933

WALTER LYDE MCCLEERY, of Laguna Hills, California, on February 1. McCleery, a Grand Bachelor of Sigma, spent his professional life with Ewa Plantation Company in Hawaii, working as a civil and mechanical engineer. After retiring, he lived in Incline Village, California, and established a winter residence in Laguna Hills. He is survived by his wife, Edith; daughters, Elizabeth Bright and Charlotte Duerkson; and his grandchildren, Pamela and Suzanne Duerkson and Julie and Robert Bright.

#### 1934

WILHELM S. EVERETT, of Ventura, California, on November 1, 1990. Everett was president and founder of Pulsation Controls Corporation, an engineering and manufacturing firm specializing in the control of noise and vibration. After selling the company in 1970, he continued doing consulting work. He was a life fellow of the American Society of Mechanical Engineers,

and a member of the Acoustical Society of America, the Consulting Engineers Association of California, and the Society of Agricultural Engineers. He is survived by his wife of 53 years, Geneva; his son, Robert; and his daughter, Susan Grosso.

GERARD J. ("BUCK") FORNEY, EX, of San Francisco, California, on January 17, after a long illness. After leaving Caltech, Forney graduated from West Point. He served in the Army Corps of Engineers during World War II, and afterward he was placed in charge of the Oak Ridge nuclear facility. He retired from the army to manage large international projects for American Cyanamid and for Bechtel, and later became a vice president of Bechtel. He is survived by his wife, Enid; one son; two daughters; and several grandchildren.

#### 1936

DAVID HARKER, PhD, of Buffalo, New York, on February 27, from the effects of a heart condition and pneumonia. Harker was a pioneer in the use of X rays to study the threedimensional structure of molecules, particularly of substances critical to the life process of cells. In 1967, a Harker-led group at the Roswell Park Memorial Institute in Buffalo determined the structure of ribonuclease, the enzyme that breaks down ribonucleic acid. After receiving his doctorate from Caltech, Harker spent several years at Johns Hopkins University; then, during World War II, he worked for the General Electric Research Laboratory, analyzing rocket fuels and other substances. He directed the proteinstructure program at the Polytechnic Institute of Brooklyn from 1950 to 1959. From there he took his team of analysts to Roswell Park, where he directed the Center for Crystallographic Research until 1976. He is survived by his second wife, Deborah Anne Maxwell Harker, as well as by two daughters by his first wife, who is deceased; they are Titiana Harker Yeats and Ludmilla Harker.

#### 1937

DON C. DEVAULT, of Champaign, Illinois, on November 26, 1990, of a stroke. A biophysicist specializing in photosynthesis, he had received his doctoral degree in chemistry from UC Berkeley and had been at the University of Illinois since 1977; prior to that, he had raught at the College of the Pacific and the Johnson Foundation at the University of Pennsylvania. He published *Tunneling in Biological Systems* in 1979. A conscientious objector, he spent two years in prison because of his convictions. He also attended meetings of the Society of Friends in Pennsylvania, and he was a member of the American Civil Liberties Union. He is survived by his wife, Roberta; a daughter, Julie Anne; two

#### 1943

PAUL E. LENK, EX, of Newport Beach, California, in November 1990.

PAUL R. MOORE, MS, of Kailua, Hawaii, on December 16, 1990. He is survived by his wife, Anneliese; a son, John; and two grandsons.

JOHN W. WOOD, MS, of Tyler, Texas, on February 3. Wood served with the Army Air Corps during World War II, advancing to the rank of captain, and worked for 33 years as a mechanical engineer at the Cities Service oil refinery in Lake Charles, Louisiana. He is survived by his wife, Madeline; two sons, John W., Jr., and H. Ross; a daughter-in-law, Mary Kay; a daughter, Karen; and two granddaughters, Jennifer and Diana.

#### 1949

JACK N. NIELSEN, MS, PhD '51, in November 1990. He is survived by his wife.

#### 1950

GARDNER W. EARLE, JR., of Arroyo Grande, California, on July 8, 1990, of cardiac arrest. He joined the Army Air Corps straight out of high school, serving from 1939 to 1945 and seeing duty in China, Burma, and India. After graduating from Caltech he worked for various companies, then joined the Jet Propulsion Laboratory, where he was test manager for several space probes. He retired in 1976. He is survived by his mother, Winifred; his daughter, Sandra Esselstrom; his son, Randolph; and his brother, Eugene.

#### 1951

JAMES C. NORRIS, JR., ENG, of Carlsbad, California, on November 14, 1990, after a short illness. He served in the U.S. Marine Corps from 1942 to 1962, was awarded the Bronze Star in the Pacific Theater, and retired with the rank of lieutenant colonel. He spent the next 20 years with the Pomona Division of General Dynamics. His wife, Leone, died on December 26. He is survived by his sons, James III and John; his daughter, Elizabeth Ann Larson; his brother, Pelham; his sisters Kathleen Drury and Geraldine Daniel; and a grandson, James IV.

#### 1984

BRIAN J. FITZSIMMONS, PhD, of Pierrefonds, Quebec, Canada, on June 21, 1989. He joined Merck Frosst Canada Inc. in 1983, where he held the position of research fellow at the time of his death. During his career he played a significant role in the advancement of leukotriene research and the development of novel antileukotriene drugs, publishing over 55 journal articles and contributing to four books as well as work leading to several patents. Fitzsimmons was noted for his love of his work, and the joie de vivre he exhibited in his everyday life. He is survived by his wife, Mary Ann, and his children, Vicki, Genny, and Jamie.

# Milton Plesset dies in February

Milton S. Plesset, professor of engineering science, emeritus, and an expert in the field of nuclear energy, died on February 19 at Huntington Memorial Hospital. Plesset was 83.

A native of Pittsburgh, Pennsylvania, and a graduate of the University of Pittsburgh, Plesset first came to Caltech in 1932 as a National Research Fellow in physics, after receiving his PhD from Yale University. After several years overseas and at the University of Rochester, he returned to campus in 1941, but left soon after to join Douglas Aircraft Company as head of the



Analytical Group of the Douglas Research Laboratories.

He came back to Caltech as associate professor of applied mechanics in 1948, and was made a full professor in 1951. In 1963, he was appointed professor of engineering science. He became professor emeritus at Caltech in 1978, and had been an adjunct professor of nuclear engineering at UCLA since 1976.

An authority on the problems and progress of nuclear power, Plesset served as a consultant to the Science Division of the RAND Corporation from 1948 to 1972 and as a consultant to the energy and kinetics department at UCLA. From 1975 to 1982, he served on the Nuclear Regulatory Commission's U.S. Advisory Committee for Reactor Safeguards; he was chairman of

# Charles Wilts dies while hiking

Charles H. Wilts, professor of electrical engineering and applied physics, emeritus, at Caltech, died in March while hiking on Echo Mountain in the San Gabriel Mountains north of Altadena. Wilts, 71, was taken to Arcadia Methodist Hospital, where it was determined that he had died of a heart attack.

A native of Los Angeles, Wilts received his undergraduate and master's degrees and his PhD from Caltech, all in electrical engineering. He joined the faculty in 1947, originally as an assistant professor of applied mechanics before becoming an assistant professor of electrical engineering, an associate professor in 1952, and a full professor in 1957. From 1974 until his retirement in 1984, he was a professor of electrical engineering and applied physics. In 1970-71, he was vice chairman of the Caltech faculty, and from 1972 to 1975 he served as executive officer for electrical engineering at Caltech.

Early in his career, his work focused on the development and application of large-scale analog computers, and he continued to work in international circles on possible computer applications. In 1960, he began research in ferromagnetism in metal alloys and garnets, with emphasis on the use of thin films as



research medium. In addition, he studied structure and surface properties,

brothers, George and Robert; and a cousin, George Tenney.

#### 1942

GORDON K. WOODS, of Phoenix, Arizona, on January 15. He had been an executive with Kaiser Corp. for over 30 years, including 13 years with Industrias Kaiser Argentina, during which he was named president and general manager of its subsidiary, Kaiser Chile. He finished his business career in the U.S., as general manager of Phoenix-based Theta-Com CATV. After retiring in 1973, he served as a Better Business Bureau arbitrator, a monitor with Recordings for the Blind, a member of the governor's Arizona-Mexico Commission, and an amateur radio operator for the Military Affiliate Radio System. While at Caltech, he was president of Dabney House and a member of the ski and water-polo teams; he twice won a student technical-paper competition sponsored by the ASME. Survivors include his wife, Margreta; three sons; and two grandchildren.

#### 1987

PAUL R. SCHATZLE, PhD, of Pasadena, California, on March 24, of cancer. He was a research scientist with TRW. He is survived by his wife, Gail; his daughter, Emily; his parents, George and Paulette; and his brother, Wayne. A memorial fund has been established at Caltech. Those wishing to contribute should write to the Dr. Paul R. Schatzle Memorial Fund, Office of Donor Relations, Mail Code 105-40, Caltech, Pasadena, California 91125.

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#### 1991

LOUIS J. BOSCHELLI, MS, of La Crescenta, California, on January 14. He was working locally and due to receive his master's degree in June; his degree will be awarded posthumously. He is survived by his wife, Mary Ann, and his parents, Marilyn and Louis. the panel in 1980.

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Before focusing his work on nuclear safety, Plesset's research at Caltech centered on the field of theoretical physics and atomic theory, and later the theory of cavity flows and bubble dynamics. His studies resulted in more than 100 research papers published in various technical journals.

Two funds are available for contributions in Dr. Plesset's memory—an endowed memorial fund for his first wife Isabel, which was set up in 1985, has been renamed the Isabel and Milton Plesset Memorial Book Fund, and will continue to support Asian studies. The newly created Milton S. Plesset Memorial Book Fund will be used to support the engineering libraries. Donations for either may be sent to the Office of Donor Relations, Caltech, 105-40, Pasadena, CA 91125. spin-wave resonance, and magnetization dynamics.

A member of the Institute of Electrical and Electronic Engineering, the American Association for the Advancement of Science, and Sigma Xi, he wrote numerous scientific papers and was the author of two books before retiring: *Principles of Feedback-Control* and *Climber's Guide to Tabquitz Rock* and Suicide Rock. He taught rock climbing at Caltech and was an avid mountaineer and skier. He also made several first ascents in the Sierra Nevada as well as in the Canadian Rockies.

A longtime resident of Pasadena, Wilts was active in the Sierra Club and the American Alpine Club. He also worked with the American Friends Service in bringing children from Mexico City to Pasadena to live in private homes as part of an exchange program.

# Caltech News

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In this issue

Not even many Caltech oldtimers know that the Institute owns an acreage of giant sequoias in the remote Nelder Grove area.

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# Caltech News



Centennial activities feature women in science.

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Caltech Y director Lucy Guernsey leads a dynamic program. "I really believe in young adults," she says. Frank Press will address guests at the Seminar Day general session.

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