

Great American stamp series honors Robert Millikan

On January 26, Robert A. Millikan became Caltech's first Nobel scientist to be honored on a postage stamp. Millikan's face on a blue 37-cent stamp joined the Great American Series, which includes stamps honoring Cherokee scholar Sequoia, environmentalist Rachel Carson, Sioux Chief Crazy Horse, George Mason (Virginia patriot and delegate to the Constitutional Convention of 1787), Charles Drew (scientist and surgeon who discovered a method to preserve blood plasma), and 1950 Nobel Peace prize winner Ralph Bunche.

The Marine Corps band played and the Women's Glee Club sang at the first-day-of-issue ceremony in Beckman Auditorium. Michael Millikan, Robert Millikan's grandson, now a Pasadena physician, joined representatives from the U.S. Postal Service and the Caltech community on the platform.

Philatelists came from throughout the area to purchase first-day issues at a temporary post office set up outside the auditorium. The stamp—honoring the man who for many years was administrative head of the Institute—will be used for two ounces of first class mail.

A stamp to honor Millikan was initially suggested in 1954 to the Stamp Advisory Committee of the U.S. Government Printing Office by Helen Holloway, Millikan's secretary during the last three years of his life. She reiterated her suggestion about every eight months until 1981, when she learned via telephone from Washington that her suggestion had been accepted.



Robert Millikan's Nobel medal—now with the Caltech archives.

Nobel laureates: they learn to live in the limelight

By Dennis Meredith

In a grand formal ceremony in December in Stockholm, Sweden, Caltech's Roger Sperry, dressed in white tie and tails, stepped onto a stage and received a gold medal—the 1981 Nobel Prize for Medicine or Physiology for discoveries concerning the "functional specialization of the cerebral hemispheres." According to the Nobel committee, Sperry "has provided us with an insight into the inner world of the brain which hitherto had been almost completely hidden from us."

Sperry, the Hixon Professor of Psychobiology, shared the prize with

Harvard professors David Hubel and Torsten Weisel. In accepting the honor, he also became Roger Sperry, world figure, for Nobel laureates are the sought-after international celebrities of science. To their frequent frustration, they are pursued by the press, lobbied by special-interest groups, and inundated with professional invitations.

Some deal with the fame as cleverly as they manage their scientific research. For instance, Nobelist Francis Crick devised the following checklist:

Dr. Crick thanks you for your letter but regrets that he is unable to accept your kind invitation to: send an autograph, provide a photograph, cure your disease, be interviewed, talk on the radio,

appear on TV, speak after dinner, give a testimonial, help you in your project, read your manuscript, deliver a lecture, attend a conference, act as chairman, become an editor, write a book, accept an honorary degree.

Sperry's prize, consisting of the medal and \$90,000, will obviously affect his life and his work, but it will also affect Caltech, as have the other 18 prizes awarded Institute faculty and alumni. For one thing, the honor contributes to Caltech's world reputation. As *Scientific American* wrote in its account of this year's awards:

"The selection of the 1981 Nobel Prizes in the sciences confirms the continuing preeminence of the major U.S. research universities, not only as centers for the creation of knowledge, but also as magnets for scientific workers from other countries."

President Marvin L. Goldberger agrees. "As far as the outside world is concerned, the prize gives a picture of the quality of our faculty, and the presence of Nobel laureates definitely enhances the overall image of the Institute," he says. "This has several effects. First, students are attracted to institutions that have Nobel laureates on their faculty, or that have trained so many people who went on to win the prize. Second, having these people on our faculty helps us to attract other fine faculty members. People who want to contribute to research and education like to associate themselves with these great men."

Judy Goodstein, Institute archivist and keeper of Robert Millikan's Nobel medal, has observed the almost-magic reaction to the medal when she displays it.

"When I open the safe and take it out," she says, "people break into smiles. They say things like 'Gee' and 'Wow' when they hold it. Scientists obviously get a big kick out of seeing the prize, but there's no envy in their

Continued on page 2

Irvine Foundation grant to help renovate Gates Lab

Caltech has received a grant of \$1 million from the James Irvine Foundation toward the renovation of Gates Laboratory.

The second building constructed on the present Caltech campus, Gates Laboratory was built in 1917. It was seriously damaged by the 1971 earthquake and was initially marked for demolition, but a later decision was made to strengthen and maintain its outer shell and to completely renovate the interior.

The project was made possible by an initial \$1 million pledge from the Ralph M. Parsons Foundation of Los Angeles. The James Irvine Foundation grant will enable the Institute to complete the work.

President Marvin L. Goldberger said Caltech is deeply grateful to the Irvine Foundation for the gift. "The grant will enable us to complete the rejuvenation of a building that housed generations of fine scientists, and to relieve a serious space problem on campus," he observed.

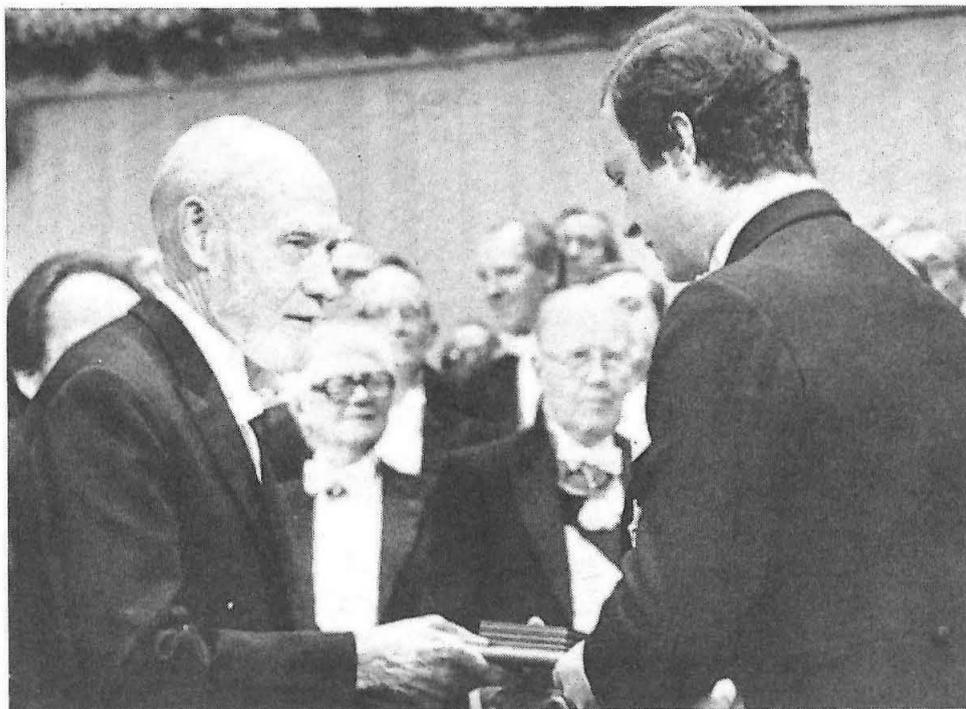
The renovated building will be called the Parsons-Gates Hall of Administration. It will contain offices of the Caltech president, provost, vice presidents, and other administrative and support personnel now quartered in Millikan Library and other buildings on campus.

A landmark on the Caltech campus, Gates Laboratory contained two undergraduate chemistry laboratories and two research groups when it was damaged by the 1971 earthquake. Its porch—on the east side of the building—had been the site of many graduation ceremonies.

Constructed for \$70,000, the building provided 16,340 square feet of laboratory, office, and storage space. Every Caltech student became familiar with it because of a required freshman chemistry course.

Restoration of the upper floor got under way this fall. The Irvine grant will be used primarily for restoration of the ground floor, which will house the Institute's admissions office, registrar, vice president for student affairs, and dean of students.

When the Gates renovation is complete, most of the Institute's administrative staff can come together in one building again—thus relieving the space crunch in the academic buildings where the officers have been located.



Roger Sperry receives his shared Nobel Prize from Sweden's King Carl Gustav.

Nobel laureates: celebrities of science

Continued from page 1

reaction. They'll comment, 'Well, I may not win one, but I've gotten to hold one.'"

Goodstein recalls reaction to the Nobel Prize with a historian's perspective. "I remember an audible gasp from the audience when Dr. Goldberger mentioned the number of Caltech's Nobel Prizes in a speech on the Institute's history to Pasadena leaders and friends of the Institute," she says.

Goodstein also recalls the special feeling on campus in 1969 when the inauguration of President Harold Brown coincided with the awarding of the Nobel Prize for Physics to Murray Gell-Mann (the Robert Andrews Millikan Professor of Theoretical Physics). It was the second Nobel Prize at Caltech that year; the first was awarded to the late Max Delbrück in medicine or physiology.

"What a warm feeling there was on campus," recalls Goodstein. "This was one of the high points in Caltech's history. There could hardly have been a more auspicious beginning for a new president's term."

Does Caltech deserve any of the credit for the Nobelists' accomplish-

ments? Goldberger thinks so. "True, the Nobel Prize is awarded for individual accomplishment," he says. "But the work of our Nobelists was carried out with some considerable degree of support from the Institute—through interaction with colleagues and students, and through Caltech's explicit support for research activities. In these ways the Institute has contributed to the individual's ability to do the work that earned the prize."

Along with the benefits that go with the prize are the negative aspects—notably celebrity status. This feature also affects the Institute.

"In one sense, the Institute suffers when a faculty member wins a prize," says Goldberger, "because being a Nobel laureate becomes almost a half-time occupation. The winners are almost under siege to give speeches or to associate themselves with a host of social issues. All of this can be a tremendous drain on their time and energy."

What's more, as all scientists recognize, the Nobel Prize itself is by no means a perfect institution. For example, the original bequest by Alfred Nobel establishing the award precludes it from being awarded for even the greatest achievements in mathematics, earth and marine sciences, astronomy, or the behavioral sciences.

Nevertheless, for those scientists such as Roger Sperry who do receive the prize, it is fitting recognition of a lifetime of excellent research. And it is certainly one indication of the continuing excellence of Caltech and its faculty.

Hugh Taylor named the Sharp Professor of Geology

Hugh P. Taylor (BS '54, PhD '59), professor of geology at Caltech, has been named the Robert P. Sharp Professor of Geology. He succeeds the chair's first occupant—Robert P. Sharp, who became the Sharp Professor, emeritus, in 1979.

Taylor, 48, received his MA degree from Harvard. He joined the Caltech faculty in 1959, and for the past 20 years has studied the oxygen and hydrogen isotope geochemistry of terrestrial rocks, meteorites, and lunar samples.

For his professional contributions, Taylor was elected last year to membership in the National Academy of Sciences and the American Academy of Arts and Sciences. He is a councillor of the Geochemical Society, and a past member of the U.S. National Committee for Geochemistry. In 1977, he was selected to give the annual William Smith Lecture before the Geological Society of London.

The professorship honors Robert P. Sharp, who joined the Caltech faculty in 1947 and was chairman of the Division of Geological and Planetary Sciences from 1952 to 1968. Sharp is renowned for his teaching, and for his research on the processes that form such geological features as sand dunes and glaciers, and on the land forms produced by wind action and glacial erosion.

Vol. 16, No. 1, February 1982

Issued nine times a year (Oct., Dec., Feb., April, June, July, and Aug.) and published by the California Institute of Technology and the Alumni Association, 1201 East California Blvd., Pasadena, California 91125.

Second class postage paid at Pasadena, California

EDITORIAL STAFF
Executive Editor: Winifred Veronda.
Staff associates: Phyllis Brewster
Diane Davis, and
Kay Walker.
Photographer: Chris Tschoegl.

USPC 085-640

A surprise for Zweig: \$220,000, no strings attached

By Phyllis Brewster

When Caltech's George Zweig got the word—on Friday the 13th of November—that he was the recipient of a \$220,000 MacArthur Foundation Prize Fellow award—one of the world's largest single gifts to an individual—he pronounced himself astonished.

"I knew nothing at all about it. This was totally unexpected," Zweig kept repeating during the flurry of attention and congratulations that followed.

Those who are familiar with the 44-year-old theoretical physicist and his research history, however, are probably not at all surprised. Especially if they also know anything at all about the John D. and Catherine T. MacArthur Prize Fellows Program. Zweig is just the kind of "rugged individualist" the Foundation is looking for.

Although the selection process is cloaked in confidentiality (self applications are *not* accepted, and the names of the carefully chosen group of "nominators" are kept secret), it is no secret that the scouts are searching for pioneers "at the frontiers of knowledge." That guideline is inspired by the late John D. MacArthur, who established the foundation and who was himself a rugged individualist. He liked "risky betting on individual explorers, while everybody else is off on another track."

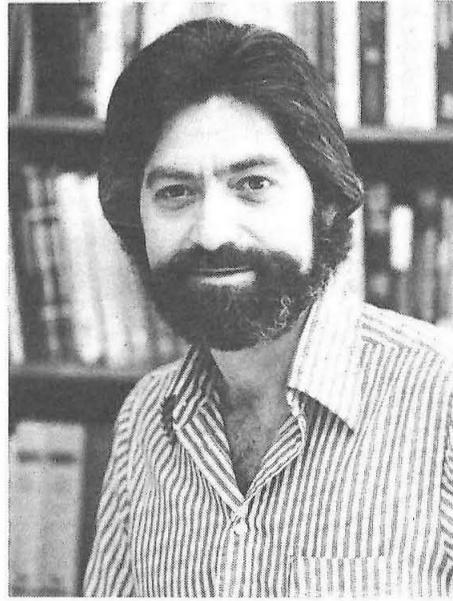
And that is indeed an accurate description of Zweig and his research.

"I have a history of working on problems that are not popular," says the Caltech professor of theoretical physics.

It was just about 20 years ago that Zweig first proposed that particles, like protons and neutrons, are composed of more fundamental particles, now called quarks. Quarks have the distinctive feature of being fractionally charged.

The idea that protons and neutrons are not in themselves fundamental particles, but are made up of elementary particles with fractional quantum numbers was, Zweig says, "too

rich for the scientific community in general." The reaction to his ideas was definitely negative. One distinguished theoretical physicist actually dubbed his research "the work of a charlatan."



George Zweig

The response, and/or lack of it, did not deter the young Zweig. Besides a certain stubbornness of character, he has (by his own definition) a free and imaginative romantic nature. And that, combined with an obsession with detail and correctness, is responsible for his resolve and his achievements.

In 1963, however, the time and the place may have had something to do with his inspiration. Zweig had just left Caltech with a new PhD, earned under the influence of Richard Feynman and, earlier, Murray Gell-Mann. He was spending a year at CERN (European Organization for Nuclear Research) in Geneva, Switzerland, and living in a villa on the banks of Lac Lemman.

"I spent a lot of time looking out over the lake—and at a haystack nearby," Zweig recalls with pleasure. The view must also have been intellectually inspirational, for it was at that time that Zweig began to work out his quark model.

"Although I didn't know it," Zweig says, "one other person was working on that theory at the same time—Murray Gell-Mann. And he was coming at it from a totally different direction."

Although not publicly or professionally applauded, Zweig continued

to demonstrate "exceptional talent, originality, self direction, and promise for the future"—qualities listed by the MacArthur Foundation as belonging to the 40 American men and women to whom the Prize Fellow awards were given last year.

The first 21 prizes, awarded by the four-year-old foundation in May 1981, were given primarily in the humanities and liberal arts. Of the second group of 19, announced in November and including a number of scientists, 15 are working in two or more disciplines.

Zweig is one of those 15.

"When I was a freshman at Michigan, I remember declaring to my roommate, Larry Fishman, 'When I'm 35, I'm going to change the direction of my work; I don't want to get in a rut.'"

True to his word, nine years ago, when Zweig was 35, he began a project in neurobiology. He wanted to investigate how a piece of the brain works; specifically he zeroed in on the question of how the brain recognizes speech.

As with the particle research, there was very little activity in brain hearing research at that time. And so for the next few years the theoretical physicist devoted full attention to hearing research. And although the new work may not have appeared to be related to the old, Zweig felt that the two had common bonds. The first was that "in principle, one doesn't know how to think about problems in either of these fields." Zweig has always been intrigued by areas where the concepts that you are supposed to use to develop the problems are not clearly defined.

The second commonality was that Zweig could, in fact, use many of the techniques that he had developed in physics and mathematics in the hearing research. His experience in physics made it possible for him to look at problems in neurobiology in ways that are not accessible to people trained in traditional branches of neurobiology.

"The idea is to make connections in areas that might seem unrelated," says the unconventional Zweig.

In 1978, encouraged by the findings of experimental physicists who found evidence for the existence of free, fractionally charged particles, Zweig returned to his search for them. While continuing to work on his neurobiology project, he and Klaus Lackner, a research fellow, worked out the chemistry of fractionally charged particles, defining such properties as electronegativity

and crystal radius.

"Now we have a better idea of what we are looking for," Zweig says.

Today Zweig is committed to the two major projects, each with its own lab at Los Alamos Scientific Laboratory in New Mexico where he is on a year's leave of absence from Caltech. He plans to continue this dual research—on fractionally charged particles and hearing—for the next few months.

Then he will think about a third dimension of work that the MacArthur gift will make possible.

"What I *don't* want is business as usual and more of the same," Zweig declares with characteristic flexibility and ingenuousness. And he adds, "I'll try to use the money to do things that are qualitatively different than what I would have ordinarily done." Which is exactly what the MacArthur people want their fellows to do.

"The purpose of this no-strings-attached program," says Foundation President, John E. Corbally, "is to assure the Prize Fellows of an adequate steady income paid in monthly stipends over a period of five years in order to relieve them of economic pressure."

The no-strings-attached aspect removes from the recipient the necessity of making reports, drawing up appealing-sounding projects, or adjusting research to fit funding patterns and publishing demands. The individual is funded, not the project. And the individuals are free to pursue any field, to focus on more than one area, or to change completely the direction of their career if they choose.

A unique and enviable set of circumstances for any researcher! And, although Zweig's career has a record of steady achievement, this recent pinnacle is a long way from what must have at some times seemed like a difficult beginning.

Zweig's parents left their native Germany in 1932, when National Socialism's anti-semitic activities surfaced there. They went east, to Russia, where, in 1937, Zweig was born. But the developing political climate in the USSR prompted them to move again. When he was only fourteen months old, his family sailed for the United States.

The Zweigs settled in Detroit, and although they had one relative nearby (an uncle was a professor of medicine at the University in nearby Ann Arbor), life was not easy for the immigrant family.

Continued on page 6

When Constance S. (Stanzi) Royden (BS '80) won a Thomas J. Watson Fellowship grant to study folk dancing in eastern Europe, she didn't dream she would be plunged into the midst of one of the most critical political crises in the area since World War II.

After graduating with dual majors in biology and engineering, Royden left for Poland in September 1980, hoping to join a performing folk dance group and to study the country's folk dances. Her trip was made possible by the Watson Fellowship Program, which supports independent study and travel abroad for recent college graduates in fields not necessarily related to their college majors.

Royden began studying folk dancing when she was in junior high school, and she was a member of performing groups in the Palo Alto-Menlo Park area throughout high school. (Her father, H. L. Royden, is dean of humanities and sciences at Stanford.) After four years at Caltech in engineering and biology, full-time immersion in folk dance seemed like a welcome change of pace.

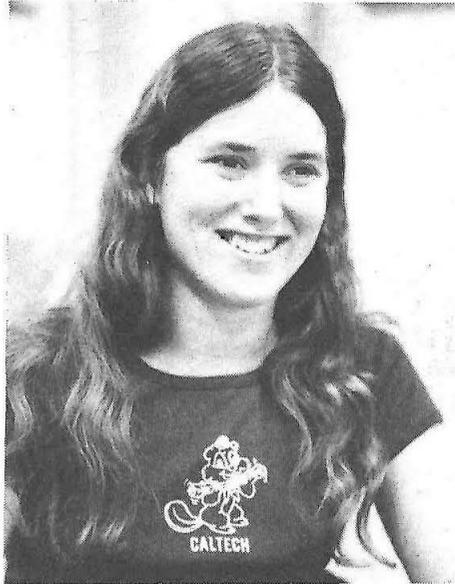
But she didn't anticipate arriving in the middle of the Polish labor movement's clash with the Polish government, and thus indirectly with the military might of Russia. Increasing shortages of food and other basic items, long lines, and growing concern over possible Russian invasion gave her study sabbatical an unexpected flavor.

In Poland Royden initially stayed in Gdańsk with the mother of a Caltech alumnus, Isabella Kierkowska (BS '79, MS '80), as she continued to study the Polish language and to contact performing groups in Krakow. From these contacts, opportunities emerged to rehearse with folk dance groups during their winter recess, and she moved to Krakow to live in a room in the apartment of a Polish family.

In finding the room she considered herself fortunate, because living space in Polish cities is at a premium. "Young married couples in Krakow often have to wait ten years for an apartment of their own," she says. "New apartments simply aren't being built fast enough to satisfy the demand. Three generations often live cramped together."

Political crisis adds the unexpected to a Polish study sabbatical

In Krakow, Royden did her own cooking and shopping, joining the lines in markets that were becoming increasingly long. She relied heavily on a diet of chicken, carrots, cabbage, and eggs, learning to cope with the daily tensions that beset the Polish shopper. "When there are so many



Stanzi Royden

shortages," she observes, "just going out to buy food creates a lot of anxiety."

Meat—in short supply for several years—became increasingly scarce, and rice, butter, oil, and cheese joined the list of hard-to-find items, along with milk and chocolate. Royden says that some of the longest lines during

her last month in Poland were of would-be vodka purchasers.

Not only were items scarce; they were also inefficiently distributed, and hoarding was rampant. "If a store brought in a supply of laundry soap," says Royden, "people would buy ten boxes at a time."

Meanwhile, tensions periodically mounted and ebbed over a possible Russian invasion, particularly in December when Radio Free Europe broadcast news of Russian maneuvers near the Polish border in East Germany. The U.S. consulate held a meeting for American students in the country, and advised them that, as U.S. citizens, they probably wouldn't be in danger if Russia invaded Poland, and would be allowed to leave on their own. Nevertheless, the possibility of being an innocent bystander at the wrong place during an invasion didn't seem pleasant.

The December crisis was followed by a new round of tension when large numbers of Polish workers stopped going to work on Saturdays, to protest the failure of the government to implement a promised five-day work week. Violence by the Polish militia against strikers touched off yet another crisis, and the day before Royden left the country, the Polish labor movement, Solidarity, called a general warning strike in protest—precipitating a new threat of Russian intervention.

At this point, after six months in Poland, Royden decided to come home. "The warning strike was the last straw," she says. She surprised her parents in Palo Alto by calling them from the United States, just hours after they sent her a telegram in Poland (which she never received) saying, "We think it's about time you come home."

(Contacted in December 1981 after martial law was imposed in Poland, Royden said she feels optimistic that, in the long run, what has happened will not result in a complete loss of the freedoms for which the Polish people have been struggling.

"The imposition of martial law was something that everybody knew could happen," she said, "so no one was actually surprised.")

Throughout the tensions, Royden enjoyed her folk dancing work, and long walks through the woods. "The Polish country is beautiful," she says, "especially in the fall." She also appreciated the warmth and hospitality of the Polish people, who were willing to share their most precious and rarest foods with a visitor.

Through all of the turmoil, the Polish people generally remained calm, sticking to their normal routines and supporting one another and Solidarity, says Royden. They waxed eloquent in expressing their dislike of Russia and its power over the country, enjoying a fairly recently earned—and much valued—right to political criticism.

Royden also stresses the vitality of the Polish Catholic Church, a strong and highly influential institution. The church attracts a dedicated following of highly devout older people, and although younger people are not as deeply Catholic, many of them attend church. For some of the young, says Royden, attending church is almost a form of political protest.

Back in the United States, Royden worked during the summer in the laboratory of John Allman (associate professor of biology) and is doing graduate work in neurobiology at UC San Francisco, toward a career in academic research.

She says she would happily repeat her experience, given the opportunity; she feels she learned a lot about politics, and what it's like to live in a very different environment. But she's glad to be back in the United States, to life without lines in the food markets or potential invaders at the border.

"I'm glad I'm not there," said Royden in December 1981. "I've been reading stories of what some students from other countries have gone through in Poland since martial law was imposed, and I'm glad to be home."

Willy Fowler celebrates 70 years



Willy Fowler's 70th birthday was actually in August, but friends made a decision to delay the official celebration until the 50th birthday of Kellogg Radiation Laboratory in November. (Fowler is the Institute Professor of Physics.) More than 200 people turned out for the celebration in the Athenaeum—among them, H. L. Crane, professor of physics, emeritus, the University of Michigan. Crane and Fowler were part of a nucleus of graduate students who ate together every evening in the Athenaeum at a round table lighted by a candle whose base was made from an electric insulator from Caltech's old high voltage laboratory. Crane eventually became custodian of the candle. He returns it to Fowler as a birthday present, above. Fowler also received a softball autographed by former fellow team members from his graduate student days, a humidor and cigars from Dunhills, and the first copy of a book, *Essays in Nuclear Astrophysics*, its chapters by his colleagues and former students.

The off-campus apartment: rising rents dull the glamour

The off-campus apartment in Pasadena—once a glamorous option for a Caltech undergraduate—is looking less and less attractive as rents top the \$400 mark for a one-bedroom accommodation. Thus students are returning in increasing numbers to more affordable Caltech-owned housing as they reverse a trend to life in privately owned accommodations that began in the late 1960s.

The desire to return to Caltech-owned residences creates a shortfall in available space. The eight undergraduate houses (including an annex for women only) can take only 550 students, and there are 850 undergraduates on campus this year. To meet the shortage, the Institute in 1978 began each summer to convert from two to eight of the off-campus houses that it owns to undergraduate residences. (Sometimes these conversions displace graduate students who had been living there, forcing them out into the Pasadena housing market.)

Most of the Caltech houses are north of the campus, in the Holliston-Chester-Wilson area. Rent in the off-campus quarters is about the same as the \$1,071 a year that it costs to live on campus. (On-campus meal service via board contract is an additional \$1,039 a year.)

The off-campus housing falls into two categories. "Alleys" are extensions of one of the on-campus residences, and their inhabitants share full social privileges with stu-

Electronics Magazine honors Carver Mead as textbook co-author

Carver A. Mead, the Gordon and Betty Moore Professor of Computer Science at Caltech, is co-recipient of the eighth Achievement Award of *Electronics* magazine.

The award was presented to Mead and to Lynn Conway "for their work in structuring the methodology of the design of very-large-scale integrated (VLSI) circuits, summed up in their basic textbook on the subject, *Introduction to VLSI Systems*."

The book has had a major impact on industry and university teaching in its field, and is now used in more than 100 universities around the world. Conway, its co-author, is research fellow and manager of the VLSI system design area at Xerox Corporation's Palo Alto Research Center.



Mark Altobelli, Chris Tiller, and Lynmarie Thompson opt for residence in an off-campus Page House alley at 515 South Wilson Avenue.

dents in the on-campus house. Residents of the alley may elect to eat at the main house via board contract, and all freshmen must eat on campus. Other apartments and houses have no connection with an on-campus entity.

This year's additions to the campus housing supply (at 344 South Catalina and 370 South Wilson) bring to 22 the number of off-campus residences. Of these, 18 are houses and 4 are apartments. They accommodate 150 students. Six of the houses are alleys; the rest have no on-campus affiliation.

Traditionalists continue to prefer life in the student houses, close to the hub of such social traditions as late-night hamburger runs on Tommy's. Senior Joe Arpaia, who has tried both an off-campus apartment and an off-campus Page-House alley, is moving back into Page House this year. "I

missed all the people," he says. "I like having a lot of people around, and I spent so much time at the house that I decided I might as well move back there."

But other students prefer the independence and privacy of an off-campus house, with a homelike atmosphere and the chance to cook for themselves rather than to eat the meals provided by board contract. One of these, senior Pam Phillips, who lives in an off-campus Dabney alley, says, "I didn't like the food service, and here I can cook for myself. And I have a terrific room, bigger than my room in Dabney." She says, "There are plenty of people here to do things with," but acknowledges that off-campus living can easily diminish participation in campus social life.

Even with the increasing conversion of Caltech-owned houses for undergraduates, there was a waiting list of nine students for these houses when school opened. (None of them were freshmen.) Meanwhile, for about 150 undergraduates who don't fit into Caltech-owned housing, Pasadena landlords and Pasadena rents remain the answer.

LETTERS

Dear Miss Veronda:

I read with complete disbelief the article on Caltech sports on page 6 of the December issue. The author completely ignored the "Golden Age" of Caltech sports in 1945. Our track team won all contests including those against USC and UCLA. Our baseball team won the championship in a league that included USC and UCLA. Our tennis team won the championship also. If I am not mistaken, some of our other teams also won championships.

It was difficult to believe that these rare championships could be overlooked in any article about the history of athletics at CIT. And then I looked at the staff roster and understood. The author and staff are all women. This would never have happened in the "good old days."

JOHN A. ANDERSON, BS '46
PORT ANGELES, WASHINGTON

Ed. note: The "Golden Age" of Caltech sports received its impetus from the Navy's V-12 program, which put records from that era into a class by themselves. The program brought athletes from other campuses to the Institute—including a substantial percentage of Stanford's football team from the preceding year. Notes the 1946 *Big T* in its football report: "The football seasons of '44 and '45 will be remembered by Caltech students and alumni as the two most successful seasons in the history of the old Alma Mater. The success of these teams was due primarily to the Navy's V-12 program, which brought to Tech the necessary brawn as well as brains."

The *Big T* continues in its report on track: "After last year's reign as Pacific Coast champions, the Tech spikesters failed to defend their title successfully. Their failure to do so is due, in part, to the transfer of most of the Navy men to other schools, as these constituted nearly all of last year's team."

The V-12 interlude in Caltech athletics was an anomaly created by a unique wartime situation; thus it was touched upon, but not stressed, in an article that focused on the more typical year-to-year fortunes of Caltech athletes.—WINIFRED VERONDA, DIANE DAVIS, KAY WALKER, AND PHYLLIS BREWSTER. (CHRIS TSCHOEGL SAYS HE DOESN'T BELONG ON THIS LIST.)

Continued on page 10

[THE WAY IT WAS]

The Way It Was features vignettes of Caltech history from three years chosen at random.

1903

The Gnome Club holds its sixth annual banquet in March at the Hotel Maryland. The *Pasadena News* reports that "covers were laid for 60 and several toasts delivered." In his remarks to the assembled group, President Walter A. Edwards terms the Gnome Club "the only organization perfected by Throop students that has survived any length of time. . . . Several societies have arisen, flourished for a short while and then vanished, all but forgotten, but the Gnome Club lives and bids fair to live as long as Throop Institute lives, because of the spirit that animates it. . . ."

Young women athletes of Throop Institute are presented the official sweater of the school during the chapel hour on June 5 by the Throop Athletic Association; the sweaters are white and "bear the orange monogram over the heart of T.P.I.," according to the *Pasadena Star*.

The *Star* reports that the Throop Institute graduating class in 1903 is the largest on record: "Throop will send into the world double the usual number" as 61 young men and women receive their diplomas at the First Presbyterian Church.

1934

"The Athenaeum Round-Table Discussions" are broadcast, beginning in February, on a coast-to-coast hookup from station KHJ in Los Angeles in a new series of programs over the Columbia-Don Lee broadcasting system. Caltech personalities and guests are featured. "The New Deal in Physics" is the first topic, and the participants are Robert A. Millikan, physicist W. V. Houston, and R. O. Baughman, curator of books at the Huntington Library.

Fifty-two high-ranking Naval officers visit Caltech in March, inspect its labs, and are entertained at a stag dinner. Admiral David F. Sellers calls the visit "the opening wedge of a closer relationship between the officers of the fleet and Caltech," and

says that "the next war will be fought to a finish in the world's scientific research labs."

1957

January *Engineering & Science* magazine reports that a grant of \$477,000 from the Public Health Service in Washington, D.C., will enable the Institute to provide a needed addition to the new Church Laboratory of Chemical Biology. Under the terms of the grant, the Institute must match the federal funds. As soon as the remainder of the grant is matched, construction will begin on a building to connect Kerckhoff and Church laboratories.

At Camp Hess Kramer north of Malibu, 60 persons participate in February in a Caltech faculty-student conference. *E&S* reports that "small informal discussion groups proved excellent for bringing forth difficult and touchy problems, and faculty and students easily reached a plane of mutual understanding." Said one student, "If we can just get it across to the faculty that we really are dissatisfied, and if we can get them to respect our opinions, then I'll be satisfied. . . ."

E&S notes in February that five women graduate students have now been admitted to Caltech since Dorothy Semenov was given permission to enroll in 1953 as the first woman student since Throop Institute. . . . All have met the Institute's stipulation that female students be "women of exceptional ability who give promise of great scientific contributions." The women also have received the approval of the committee on graduate study and the academic divisions in which they intend to work.

The faculty-student conference: part two is imminent

Almost two years had passed since the faculty-student conference at JPL in February 1980, and everyone felt it was time for a second installment. So student leaders and faculty members worked together over the fall, planning a similar event. The date was designated an academic holiday, in recognition of the conference.

February 19 was selected as the date and the Jet Propulsion Laboratory as the place; discussions would be confined to one day rather than two this time, and once again, talk would focus on undergraduate education. About 50 student leaders and a similar number of faculty members and administrators were invited.

James J. Morgan (vice president for student affairs and professor of environmental engineering science) and David B. Wales (dean of students and professor of mathematics) stood ready to take the podium. Panel discussions in the morning and afternoon would be concerned with the core curriculum and other classes; humanities and social sciences; advisers, teaching assistants, and feedback; student body size; the honor system; and undergraduate research.

ASCIT President Sue VandeWoude and ASCIT Vice President Ed Lambert worked hard on the planning, along with members of a steering committee. They were aided by advance work last spring on the part of Tim Brazy and Interhouse Chairman David Younge. (Tim Brazy was elected ASCIT president last spring

but was forced to take a leave of absence because of back surgery; Sue VandeWoude was elected to fill his term.)

Said VandeWoude, "It's good to have a conference like this every two years to help us keep the spirit of an event where faculty and students share information. This kind of meeting lets the faculty know how the students view undergraduate education, and it helps the students to know that faculty members are interested in them."

VandeWoude believes the initial conference helped to foster some long-term changes—both tangible and intangible. "The conference helped the faculty to realize that the students have original ideas and can present them in an organized and responsible way," she said, "and this sped up change. And the conference made the students feel that the faculty would respond to them if they presented their ideas in an intelligent manner. There are more ombudsman committees now, there is more communication between faculty members and students about classes, and students feel encouraged by professors to make suggestions about courses."

And on February 19, students and faculty will have another chance for a frank and friendly exchange about undergraduate education at Caltech and how to improve it.

Zweig awarded \$220,000, "no string attached" grant

Continued from page 3

Zweig attended Detroit's intercity Mumford High School, and then went on to the University of Michigan for what he calls "a very liberal education."

"I loved it there. It was like a supermarket with an enormous choice of courses," he says. He helped himself generously, not only to mathematics and science, but to the humanities—especially history.

But mathematics and physics were always first with him, and eventually he found himself a graduate student at Caltech—from 1959 to 1963. Then, after the year at CERN, he returned to the Institute as an assistant professor. He became a full professor in 1967.

THE ASSOCIATES' NEW EXECUTIVE COMMITTEE



The Associates' 1982 Executive Committee: Horace Gilbert, second vice president; Charles F. Thomas, treasurer; Berneice Anglea, first vice president; Robert L. Zurbach, secretary; and Collis H. Holladay, Jr., president.

The Caltech Y welcomes a new director

By Winifred Veronda

"If it happens at the California Institute of Technology—and it isn't seismic or genetic or astronomical or mathematical or quantum or geophysical or something else generally incomprehensible—then it's probably happening because of the Caltech Y."

With these words, the Y director-designate, Huston Horn, began describing his new job for parishioners at All Saints Episcopal Church in Pasadena where he has been the assisting minister. And on January 1, he stepped into his new role amidst enthusiastic greetings from the Caltech community.

Walt Meader, the previous Y director, resigned in April, and an ad hoc search committee (headed by Chris Wood, chairman of the Y Personnel Committee) had been hard at work to find a new director. Over the fall, Edward Hutchings Jr., lecturer in journalism and adviser to the *California Tech*, filled in as acting director.

The search committee screened 100 applications and interviewed six people, but eventually found Horn through a Y board member who is also a member of All Saints parish. Horn was encouraged to apply and—according to Chairman Wood—he was the only person considered who received a unanimous "yes" vote from all 13 members of the search committee.

"We were looking for Mr. Perfect," says Wood. "We wanted someone with a broad range of qualifications—someone who could counsel students and get along well with faculty, lead backpacking trips and offer spiritual and ethical counsel, generate creative program ideas and be effective as an administrator. And we found him."

Horn, who has been a member of the All Saints ministerial team for 12 years, was 35 when he entered the Episcopal Theological School in Cambridge, Massachusetts, to study for the ministry. Earlier he had been a writer and associate editor for *Sports Illustrated*, and a project editor for Time-Life Books. He is active in leading backpacking trips, and has been a

summer chaplain for the California State Parks. He holds a BA degree in political science from Vanderbilt University.

The Horns, who live only a few blocks from the Caltech campus, have four sons—David, 23, studying for his PhD degree in cultural anthropology at Berkeley; John, 19, studying dramatic arts at UC Berkeley; James, 17, a senior at Polytechnic School, and Joshua, a sixth-grader in the Pasadena public schools. Mrs. Horn, an attorney with a Los Angeles law firm, specializes in corporate litigation.

Horn describes himself, when he's at home, as a carpenter, auto mechanic, and general handyman—and also as the family's number-one cook. For recreation he likes to go backpacking and canoeing and to sit on the beach and watch the ocean.

A genial, charming man of 51 with a short brown beard and a gentle sense of humor, Horn says he had been interested for some time in working with young people in a university setting and had thought of becoming a college chaplain. When a spot opened up just a few blocks from home, on a campus where he had often walked and bicycled and occasionally taken part in activities, the opportunity was irresistible.

As he thinks about the new position, Horn says, "So much of what the Y has done has been successful that I don't expect to make major changes. I'll need time to learn what's working well, and what has been overlooked and needs to be added. I expect to do a lot of listening to the students of the Y Executive Committee. The members are bright and creative and they know how to attract other students.

"In the long run, I see myself working to devise programs to appeal to a broad range of tastes. The Y has long been good at providing program diversity. My task, I guess, will be to keep the cafeteria offerings as appetizing as possible—to keep the appeal high, and to attract new people to become involved."

The Y's traditional mode, says Horn, has been to discover a vacuum, move in and fill it, and then let others take over when the project has be-

come established. He expects to continue this way of functioning, and he notes that this is one reason why the Y—which led in putting together the first faculty-student conference—is only involved in a minimal way in the second one.

Of his role as counselor on spiritual and ethical matters, Horn says, "I come from a church that's very plu-



Huston Horn

ralistic. I'll like helping students explore questions of ethics, values, meaning, and purpose, but I don't need to sell my own point of view. The Y's perspective is broad based, and I'm glad this is how it is."

Horn says he's impressed by the affection with which the Y seems to be held by alumni who were active in it. "At Caltech, so much responsibility for non-academic growth falls to the Y," he says. "I hope that all the past members will continue to support the Y, because of their memories of how it helped them."

In his explanation of his new job to All Saints parishioners, Horn described the Y this way: "A kind of on-site resource for refreshment, a fount of alternative thoughts and activities. The Y sponsors counseling, noontime concerts, architectural and museum tours, river-raft trips, social action opportunities, career planning seminars, political exposures, personal development workshops, ethical/religious/philosophical discussions, ski weekends, theater trips, backpack and sailing excursions, dress-up dinner parties, dress-down midnight snacks during finals—and a wedding or two here and there.

"In short, the Caltech Y is the still, small pluralistic voice of humanism and religion and friendship in the midst of the Institute's technocratic maelstrom. It's sort of like a church,

but its creed includes everyone, and its liturgy is *ad hoc*, celebrated indoors and out, informally and not.

"And the director of the Caltech Y—me—will be involved with it all. Imagine . . ."

To that, the Caltech Y board responded with a hearty "Welcome aboard, Huston Horn," and the Caltech community added a ringing endorsement.

Cogeneration system to save Caltech \$400,000 each year

With the help of a \$400,000 grant from the Department of Energy, Caltech is building a cogeneration system on campus that will save some \$400,000 per year in electricity costs. The system's turbine generator will produce electricity as a by-product of steam from the Institute's boilers.

The project will be of great help to Caltech in its efforts to cope with soaring increases in the cost of energy, according to David W. Morrisroe, vice president for business and finance, and Institute treasurer.

The cogeneration project will cost about \$1.3 million, and will allow the Institute to produce about 6,000 megawatt-hours of electricity, or about one fifth of its annual electrical power.

Scheduled for completion in January 1983, the system will consist of a one-megawatt-maximum output turbine generator, which will be installed in an existing building in Caltech's central plant facility on Wilson Avenue in Pasadena. The turbine generator will use high-pressure steam from the Institute's boilers to generate electricity, feeding the exhaust steam at lowered pressure into the Caltech steam distribution system for heating and cooling.

Morrisroe expressed appreciation to General Manager Karl Johnson and his staff of the Pasadena Department of Water and Power for help in developing the project, and to Francis Clauser (the Clark Blanchard Millikan Professor of Engineering, Emeritus), for assistance in developing the program.

By Winifred Veronda

Few *California Tech* editors fantasize that their work on the campus newspaper is helping to prepare them for a career—or even a creative avocation. Nick Smith (Ex '71) and Dennis Mallonee (BS '76) were no exceptions to this rule. But here they are, publishing and editing *Fantasy Book*, a new fantasy magazine, and saying that their *California Tech* experience helped to bring it all about.

The idea for *Fantasy Book* was Mallonee's, and he was joined in the endeavor by Smith, who brought to the task his experience in creating games and editing a magazine for a game design and publishing company—and his contacts in the graphics world. A third *California Tech* editor, Gavin Claypool (BS '75), initially was a partner, but withdrew to devote more time to his own business of printing limited edition hard-bound books, and his work with APh Technological Consulting.

Smith was entertainment editor for the *Tech* in 1970. Mallonee was editor in chief in 1974, and Claypool was editor in chief in 1973. All three have long been devotees of science fiction and fantasy (Smith dipped deeply into *Dungeons and Dragons* after his years at Caltech) and they felt that an increasing demand for good fantasy among readers—and a dearth of good fantasy publications—created a vacuum that they could fill.

"Over the past 20 years, people have become dissatisfied with the fantasy offerings on the market," Smith says. "They want good visual and literary material, and we're trying to offer the highest quality in both."

The upsurge in interest in fantasy, Smith and Mallonee believe, was stimulated by the success of the Tolkien books and by the *Star Wars* movies—the latter being productions that are more fantasy than science fiction. The Tolkien books, says Smith, proved to publishers that fantasy could sell, and paved the way for more and better writers to enter the field.

In his discussion, Smith makes a clear distinction between science fiction and fantasy. In science fiction, he explains, the writer extrapolates from a realistic situation, projecting the unknown from the known with as

much accuracy as possible. This feat is difficult to achieve, and many writers get bogged down in the process of trying. One *Tech* alumnus who is succeeding, says Smith, is David Brin, (BS '73), who writes "excellent technological science fiction." Brin, unlike many writers in the field, brings to his craft an excellent background for making the extrapolations successfully.

By contrast, fantasies can take the reader to a world where everything is

Popular during earlier periods, fantasy suffered during the Victorian era when it was sentimentalized to the point that it lost its vigor, Mallonee asserts. When the Victorian era faded, so did fantasy.

An earlier *California Tech* editor, L. Sprague de Camp (BS '30) helped in its renaissance, Mallonee and Smith feel. De Camp and Fletcher Pratt wrote a series of stories that placed contemporary individuals from our own culture into the middle

Having fun is one of the reasons why the editors started the fantasy magazine, and they are continuing to pursue it as a part-time labor of love, working at other jobs while the magazine is in the fledgling stage. Mallonee, who earned a graduate degree in economics at UC San Diego, works with his father in property management. Smith, who was part owner in a Pasadena bookstore after he left Caltech, now manages several departments for another bookstore in the city.

The editors are pleased with the direction in which *Fantasy Book* sales are heading (It has been especially well received in England.) "It should soon reach a point where we can anticipate its success on a long-term basis," Smith says. The publication has a distribution of four thousand copies, including direct sales, and the editors recently completed an arrangement with two large subscription services to list the magazine at a discount. (Readers wanting to subscribe are welcome to send \$16 for 6 issues, or \$30 for 12, to P.O. Box 4193, Pasadena 91106.)

The magazine is proving popular as an outlet for writers (The editors pay 2 to 4 cents a word) of all kinds of fantasy material: epic stories, heroic and humorous pieces, horror tales, and fables—as well as an occasional science fiction piece or a bit of science fiction with a fantasy angle. Mallonee's favorite is a whimsical piece called, "Won't You Have a Cup of Tea, Dearie," about an old lady who does magic for her friends and suddenly finds that the magic is actually working.

Mallonee is himself a writer of fantasy, but he says that his own work won't appear in *Fantasy Book*. "I'm not objective enough about my own writing to decide if it belongs in the magazine," he says. Smith is using his contacts in the graphics world to attract artists to the publication, and is excited at his success in bringing in talent from other media—television, commercial art, etc.—and seeing them create successful illustrations for fantasy.

Both the editors agree that *Fantasy Book* would never have come into being without the *California Tech* to get them involved in the world of words and word production—all of which proves that a Caltech education can and sometimes does yield unforeseen benefits.



Magazine publishing: no fantasy for these former *Tech* editors

different—or where everything is familiar except for one set of parameters that have been altered. This, the editors believe, is one reason why reading good fantasy limbers up the psyche.

Says Smith, "Fantasy is an exercise in jumping beyond the familiar and experiencing reality in a whole new way. If a story is told from the perspective of a dragon—and told well—then reading it extends your ability to look at reality from another viewpoint than that of the standard six-foot hero."

of a series of well-known legends—letting us see how these familiar characters would react within an alien structure. "These stories were the outstanding pre-Tolkien fantasies," says Smith.

The distinctions between science fiction and fantasy buffs, and their attitudes toward the material they revere, extend right down to the kinds of costumes they wear to science fiction conventions. The science fiction fans are into power or hero trips and tend to come as military figures, while "the fantasy people want to become somebody interesting," Smith says. "They're more playful and whimsical—caught up in the fun of it. The science fiction person takes it all more seriously. He's probably more preoccupied with whether his fake blaster has the proper number of bells and whistles than with simply having fun."

Beavers impressive in fall sports forays

Men's cross country team 3rd in championship race

The 1981 Caltech cross country team was characterized by both quality and quantity as Coach Leroy Neal experienced the largest turnout for the team in his nine years at the helm. A total of seven women and twenty men suited up and, most importantly, the team featured a better-than-usual balance between newcomers and returning runners. This fact was largely responsible for the good team performances this year.

With three seniors, nine juniors, four sophomores, and eleven freshmen, the team responded with a dual-meet record of five wins and six losses, and then took a strong third place finish in the SCIAC championship meet men's race.

As an important first, Caltech entered a legitimate women's team in the championship race at Occidental and surprised everyone by coming within eight points of a fourth-place finish. Said Coach Neal, "It was a tremendous credit to the desire and motivation of the team that such an inexperienced group of runners could compete so strongly in a championship event."

According to Neal, however, the most encouraging aspects of the season are: 1) The top five runners will be back next year. 2) A two-year trend indicates that in 1982 Caltech will finally overtake the perennial power, Occidental. (Two years ago, the Caltech team's average time was three minutes behind that of Oxy; last year it was two minutes back. This year the difference was only one minute. 3) Most important, the Caltech runners now believe they can beat Oxy.

Pomona-Pitzer continued its domination of the SCIAC this year by winning all of its dual meets and decisively defeating runner-up Occidental in the conference meet.

Football team matches Tech's 1931 record

The Caltech football team finished the season with six wins and two losses, tying the record of the 1931 team for most victories. (One of these came via a forfeit from the Mexicali

Spartans.) New interest in the team seemed to bloom as 38 men turned out for the 1981 squad.

The Beavers were paced by freshman star Jonathan Brown, who achieved rushing games of 199, 216, and 247 yards in Caltech victories. Offensive shows came at the expense of the Valley Eagles (21-0), the Lakewood Norsemen (35-6), and Tehachapi prison (33-32). Capping the competitive season were twin wins over the West Valley Express from Woodland Hills, California (27-16 and 39-21).

Student athletes selected for post-season awards included Captains Brad Anton, John Humphrey, and Les Poltrack. Mike O'Loughlin was named the Most Versatile Beaver, and Brad Anton was selected Rookie of the Year. Curt Trimble was named Best Defender, while the Irv Noren Trophy for outstanding back went to Jonathan Brown. Dave Brinza earned the Max West Award for outstanding lineman, and the coveted Wheaton Trophy was awarded to Les Poltrack by vote of his teammates.

Elsewhere in the SCIAC, the Whittier College Poets were undefeated in conference play as they won their 22nd championship—the most ever by a SCIAC team.

40 players turn out for strong soccer program

Interest in soccer at Caltech continues to grow. This season about 40 players turned out, producing a strong junior varsity as well as varsity program.

"The varsity team was our best in ten years," according to coach Don Cameron. "Every game was competitive and exciting and our biggest loss was by only two goals." The season record: four wins, eight losses, one tie.

For the first time in recent memory, a player—Stefan Feuerabendt—scored four goals in a single game for a 4-2 victory over Occidental. To prove this performance was no fluke, he repeated it by scoring four goals in a 7-0 victory over Southern California College.

A season highlight was the defeat of Whittier College, the first in many years. In that 3-1 victory, Lance Dixon scored two times but the outstanding performance was by Luis Monslave. Monslave shut down the Whittier striker, Fitzsimmons, who was voted the conference outstanding player.

John McNally was once again selected for the All Conference team, and as Caltech's most valuable player. Greg Haussmann was named most valuable player for the JV team.

Caltech women stiff competition in volleyball

The third year of women's volleyball at Caltech was very successful. The level of competition within the league was stronger than in past years, and the Caltech women offered stiff competition to all their opponents. The season record: eight wins, ten losses, and two ties.

Early in the season, Caltech played superb volleyball against Pomona, winning 15-11 and 15-10. Another highlight came in mid-October when Caltech tied with Claremont-Mudd-Scripps for third place in the Redlands JV tournament. The Tech women finished behind two powerful teams: the College of the Desert varsity squad, and Occidental. A week later, Caltech again proved itself by defeating CMS 15-5 and 15-11.

The Tech players then went on to defeat two teams that had beaten them earlier in the season. Redlands traveled to Caltech to face a contingent that had improved immensely: Caltech won that match by the tight scores of 15-10, 13-15 and 15-13. Whittier also was surprised when final scores showed in Caltech's favor—15-7 and 15-13.

Throughout the season, co-captains Sue Fuhs and Sandra Loh consistently played an excellent game. Fuhs's setting, along with that of freshman Chris Tiller, complemented the superb hitting of Sandra Loh. Defense, however, was the team's greatest strength; Lynmarie Thompson, Noemi de la Puente, and Julie Kornfield protected against opponents' hard hitting. Ace server Susanna Chan; defensive specialists Eliza Sutton, Irene Repogle, and Kelley Scott; and hitters Margaret Short, Lucy France, and Catherine Petroff added depth to a starting line-up.

Water polo team finishes third in SCIAC conference

The 1981 Caltech water polo team finished with an impressive 14-9 record and a third place in the SCIAC conference. Led by two All Americans—senior Matt Wette and sophomore Don Hendrix—Caltech broke into winning ways for the first time in 13 years and turned around last year's record of 4 wins and 12 losses. Coach Clint Dodd was named SCIAC Coach of the Year for his efforts.

Said Coach Dodd, "It was total team effort all season. With a core of

seniors back, plus the added strength of two transfers (junior Bill Polson and senior goalie Russ Barnes), we knew the team would be good."

The season started, after three days of practice, against five eastern teams in a tournament hosted by Washington and Lee University. Here Tech swam away to a 15-9 win over MIT in the first athletic meet between the two institutions.

Matured by the tournament, the team came home to reel off 8 wins and 1 loss, including a 12-6 varsity win over the alumni. This victory broke the alumni's nine-year stranglehold over the varsity.

In conference play Caltech lost to Occidental, then defeated Whittier 10-9 and Pomona-Pitzer 9-8, respectively. After the first round, Tech found itself only one win away from the conference lead. Final conference record: 5 wins, 5 losses, including a shoot-out against Pomona-Pitzer when a new single-game scoring record was set. Caltech defeated Pitzer 20-18.

End-of-the-season awards came to several Caltech players. Matt Wette was named First Team All Conference, and was runner-up in voting for Conference Player of the Year. He was also given a special award as Caltech's high scorer. Russ Barnes made Second Team All Conference, was named best goalie at the SCIAC tournament, and won the Coach's Cup as Caltech's most valuable player.

Chris McKinnon was named to the Second Team All Conference while Peterpaul Vita, Don Hendrix, and David Dowling were given Honorable Mention All Conference. Bill Polson received a special award as Caltech's Most Improved Player.

Weinberg recipient of Colburn Award

W. Henry Weinberg is the recipient of the 1981 Allan P. Colburn Award of the American Institute of Chemical Engineers. Weinberg is Caltech's Chevron Professor of Chemical Engineering Related to Energy, and professor of chemical engineering and chemical physics.

The Colburn Award was created to encourage excellence in technical publications by younger members of the Institute, and was given to Weinberg for his creative work in surface structure and reaction kinetics. The award consists of a certificate, a plaque, and \$1,000.

ALUMNI ACTIVITIES

Tuesday, March 2

Salt Lake City chapter meeting, the Hotel Utah, Main at South Temple. Reception, 6:30 p.m.; dinner, 7 p.m. Robert P. Sharp (the Sharp Professor of Geology, emeritus) will speak on "Martian Geology: A Second Look from the Viking Landers."

Thursday, March 4

New Mexico chapter meeting. Robert P. Sharp will speak on "Martian Geology: A Second Look from the Viking Landers." Time and place will be announced.

Tuesday, April 20

Miami chapter meeting. Robert P. Sharp will speak on "Martian Geology: A Second Look from the Viking Landers." Time and place will be announced.

Saturday, May 1

Boston chapter meeting. A tour through the Woods Hole Oceanographic Institution will be featured. Time and place will be announced.

Monday, May 3

New Jersey chapter meeting. Caltech President Marvin L. Goldberger will be the speaker. Additional details will be announced.

Saturday, May 15

Alumni Seminar Day, Caltech campus.

LETTERS

Continued from page 5

Re: Discobolis (October 1981 *News*)
Dear Editor:

In the early 1950s, the Discobolis spent most of its time in Blacker House. During the overlap of Peter Mason (BS '53) and John Getz(?) (BS '54), we could always win in cross country (Mason held the 2-mile record) and water polo (Getz was rather good). I was co-athletic manager for Blacker in 1952-53, and don't recall losing the trophy for more than two weeks.

I have no recollection whatsoever of the trophy being lost nor being a replacement. Perhaps the jocks at Fleming considered it lost simply because they were unable to win it from Blacker during those years.

EDWARD GAUSS, BS '54

Ed note: We've been unable to locate a John Getz among Caltech alumni. Could the individual with prowess in water polo have been John G. Goetten?

Honoring alumni scholars



Five outstanding students—along with donors to the Alumni Scholarship Fund—were honored in December at the annual award dinner hosted by the Alumni Association. Above: Senior Alan Dellamore (right) with Cydnor Biddison (BS '40) and Mrs. Biddison.

Exploring Hawaii's volcanoes



The Alumni Association's spring trek to Hawaii's volcano country was so popular that the trip was repeated in November. Above: Guide Robert Sharp (the Sharp Professor of Geology, emeritus) describes the geological features of Kilauea Crater. (Photo by Craig Elliott.)

Obituaries

1925

ROBERT H. DALTON, MS '26, PhD '28, on November 1 in West Palm Beach, Florida. At the time of his death he was a consultant for Corning Glass Works, having retired in 1967 as associate director of chemical research after 37 years with the company. He was awarded more than 20 patents for his research at Corning. Dalton was a Ramsay Fellow at Oxford University in 1929-30 and received the Wetherill Medal from the Franklin Institute in 1953. Survivors include his wife, Claire, three sons, Robert, Thomas, and Christopher (BS '65); and a granddaughter, Kathryn. A memorial fund has been established in his honor at Caltech to benefit the chemistry department. Send contributions to the office of memorial funds, 1-36, Caltech 91125.

1927

FLORENT H. BAILLY on April 28 after a long illness. He was retired from his position as director of research and development for the Variperm Company in Arcadia, California. He is survived by his wife, Bertha.

1931

LUCAS A. ALDEN, PhD '35. Formerly with W. R. Grace and Company in New York, Alden was employed as a consultant in Locust Valley, New York.

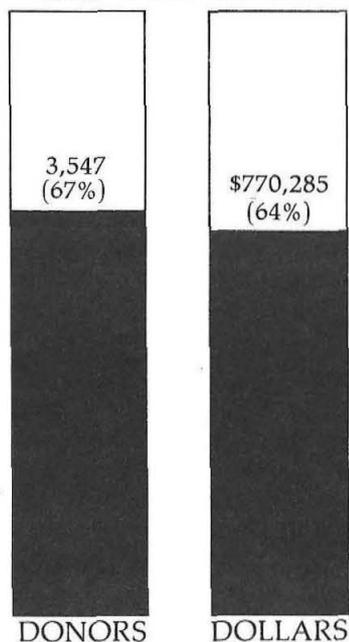
1934

JOHN F. PEARNE on September 6 in Cleveland, Ohio, of cancer. Student body president at Tech, Pearne went on to George Washington University Law School for his JD. He practiced patent law throughout his career, and at the time of his death was senior partner in Pearne, Gordon, Sessions, McCoy & Granger. He served as president of the Cleveland Patent Law Association in 1967-68. He is survived by his wife, Jean, and three children, Sally, Chris, and Dennis.

1935

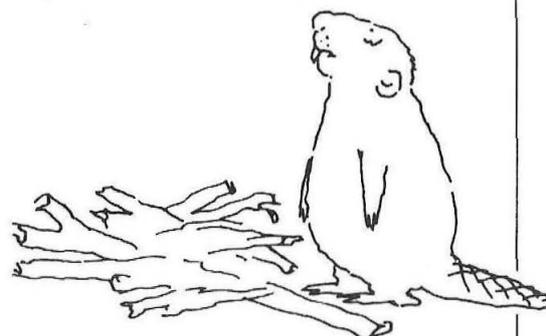
FRANK J. MALINA, MS, MS '36, PhD '40, on November 9 near Paris, France, of a heart attack. Malina, co-founder, with Theodore von Kármán of the Jet Propulsion Laboratory and of the Aerojet General Corporation, helped create Caltech's Rocket Research Project in 1936. When that project became JPL in 1944, Malina was the lab's first director, making fundamental contributions to both liquid fuel and solid fuel rocket technology. He left JPL in 1947 and moved to Paris, where he worked with UNESCO until 1953, heading that agency's division of scientific research. He then set up a studio as a graphic artist, and became the creator of "kinetic art." In 1967 he founded *Leonardo*, the *International Journal of Contemporary Visual Artists* to explore the interplay between art and science. He is survived by his wife, Marjorie, and two sons, Roger and Alan.

5,300 Goals \$1.2 million



The Alumni Fund 1981-82

As of January 16, 1982
(time elapsed, 54%)



NORWOOD L. SIMMONS, JR., MS, on October 11 of lung cancer. His wife, Helen, writes, from Pauma Valley, California, "He has always been very proud of his association with Caltech and I think that, in turn, his life gave you reason to be proud of him. He retired from his work with Eastman Kodak Company in December 1972 and turned at once to growing avocados here in north county and was as keenly interested in the complete culture as he had been in any scientific endeavor. I wish you continuing success in your relationships with men as fine as Dr. Simmons."

1937

ARTHUR C. W. BASKIN, MS, on August 30. He had been retired since 1968 from a position with the Spartanburg (South Carolina) Kool-Vent Metal Awning Company. He is survived by his wife.

1942

ROBERT E. DENSMORE, JR., in 1979 of cancer. He had been a chemical process engineer with Filtrol Corporation in Los Angeles.

1943

DeWITT R. GAYLE, MS, on April 20, 1980. Previously a consulting meteorologist for A. H. Glenn and Associates in Houston, Texas, Gayle was a self-employed consultant at the time of his death.

1948

GEORGE R. SCHULL, MS, on June 26. He had been a senior staff engineer with TRW Systems in Redondo Beach, California. He is survived by his wife.

1963

JOHN K. LINK, PhD, in August 1980 of injuries received in a mountaineering accident in Colorado. He had been a research associate at the University of Colorado in Boulder.

Personals

1914

VIRGIL F. MORSE, who, at over 95, is Caltech's oldest living alumnus, is residing with his wife, Stella, at the Granada Hills (California) Convalescent Hospital.

1922

HAROLD R. HARRIS, retired from the U.S. Air Force, was named an honorary fellow of the Society of Experimental Test Pilots in 1980. In 1981 he received the Peruvian government decoration "Gran Cruz al Merito por Servicios Distinguidos." Harris lives in Falmouth, Massachusetts.

1927

VERNON P. JAEGER, Ex, is serving on the Governor's Advisory Committee to the Oregon Department of Veterans' Affairs. Jaeger, a retired Army colonel, lives in Portland.

1935

ALAN BEERBOWER writes from San Diego, "I was elected a Fellow of the American Society of Lubrication Engineers this year and was presented with a plaque at the national meeting. I continue to function as a research engineer at UCSD, though they don't pay me anything and most days I don't even earn that. I am also as associate editor of the ASME *Journal of Lubrication Technology* and a staff contributor to *The Engineer of California*."

1938

PHIL SHEPHERD sends us this update from Coronado, California: "In January 1977 I resigned as president of Circle Seal Corporation, a relatively small—400 employee—manufacturer of fluid system components located in Anaheim, concurrent with acquisition of Circle Seal by Brunswick Corporation.

In June 1980 I became a registered bum devoting my management skills to improvement of the game of tennis and the subtle art of boogie-boarding in the cool waters of the Pacific Ocean. We are now living in Coronado, which is where Lesley and I met and started our married life, and alternate with our condominium in Indian Wells. The only business activities I currently pursue are director-type activities with California Elwyn, in Fountain Valley, and the Southern California District Export Council."

1940

HAROLD S. MICKLEY, MS '41, formerly executive vice president-technical of Stauffer Chemical Company in Westport, Connecticut, has been elected vice chairman of the company.

1944

RUBEN F. METTLER, MS '47, PhD '49, a Caltech trustee, has received the first Roy Wilkins Memorial Award from the NAACP. Mettler, chairman of the board of TRW, was recognized for his support of equal opportunity programs in the Los Angeles area and throughout the nation.

1946

JULIAN COLE, MS, Eng '46, PhD '49, professor of engineering and mathematics at UCLA, has accepted an appointment as Distinguished Institute Professor of Applied Mathematics at Rensselaer Polytechnic Institute, beginning in the summer of 1982.

1947

SEYMOUR LAMPERT, MS, Eng '48, PhD '54, a senior research associate at USC, reports that he is editor-in-chief of the *Journal of Solar Sciences*, a new Van Nostrand/Rhienhold publication.

1948

J. FRANK VALLE-RIESTRA, MS '49, writes from Walnut Creek, California, to catch us up on his activities over the years. "Since my graduation I have worked for Dow Chemical USA, mostly at the Pittsburg-Walnut Creek site in northern California. A few weeks ago I was promoted to senior associate scientist, from my previous position as associate scientist. I asked my boss what the significance of the promotion was, and he kindly reminded me that "senior" was a synonym for "old." At any rate, my current responsibilities lie in the broad area of technical support for process development activities. I also teach in the graduate school of the department of chemical engineering at the University of California in Berkeley, and I am finishing a book on project evaluation in the chemical process industry, to be published by McGraw-Hill in a year or so. For many years I have tried to promote career guidance for the disadvantaged, and I am involved in a number of activities centered upon the environment and its preservation—a hobby and a challenge."

1949

AKIRA KOBAYASHI, MS, formerly associate professor at the University of Tokyo's Institute of Space and Aeronautical Science, was promoted to professor on the engineering faculty for the university's Institute of Interdisciplinary Research (IIR). He was also appointed special assistant to the director of the Institute, which was established in April 1981.

COL. ERIC C. ORME, MS, writes from Penn Valley, California, "After eight post-military retirement years with the governor's office in Sacramento, am interested in applying fluent Chinese and familiarity with the Far East to assisting U.S. business and other groups in their transactions with China."

1955

FRANCESCO BEUF reports, "I was recently remarried (to Barbara Fitch Holliday) and now share four children, three of mine and one of Barbara's. I completed my pediatric residency training in 1979 at Children's Hospital of Philadelphia, and am now practicing pediatrics in my home town (Sheridan, Wyoming)."

1959

J. PHILIP BROMBERG, MS, announces that he has opened a law office in Pittsburgh and has seen publication of his textbook on physical chemistry.

DONALD CLAYTON, MS, PhD '62, professor in space science at Rice University in Houston, has been chosen as the 1981 George Darwin Lecturer of the Royal Astronomical Society. His December lecture was titled, "Cosmic Chemical Memory; A New Astronomy."

1960

MEL E. HOLLAND, MS '61, reports that he has become associate professor of civil engineering at the California State University at Sacramento.

1963

BRIAN BELANGER reports from Rockville, Maryland, "In addition to my position as chief of the office of measure-

ment services at the National Bureau of Standards, I recently started a hobby-related mail-order business called The Old Radio Place, selling radios, parts, and service literature to antique-radio buffs."

1966

STEPHEN D. CLAMAGE, senior member of the technical staff at Ocean Technology, Inc., in San Diego, reports the birth of a daughter, Jessica, to him and his wife, Lynne, in July.

1967

GERARD BLOCH announces that he has set up practice in Paris, France, as a patent attorney and that he is interested in corresponding with other alumni dealing with patents, trademarks, and copyrights.

1969

RON MIYAKAWA, MS, who is a member of the technical staff with the space and communications group of Hughes Aircraft in El Segundo, California, announces that he and his wife, Marilyn, have a new son, Ryan Hiroshi, born October 22.

1974

JAMES R. LEGER writes that he married Perry Ludwig last summer and is now a senior engineer at the 3M Company in St. Paul, Minnesota.

1976

KAREN E. MAPLES, who is in her second year of residency in obstetrics-gynecology at the Los Angeles County-USC Women's Hospital, married GREGORY S. GIBSON (BS, MS '77) on August 8.

1978

ED FALL, MS, and his wife, Theresa, announce the birth of their daughter, Erin Colleen, on October 23. Ed is an engineering geologist with Geotechnical Consultants in Burbank, California.

1980

JIM FRUCHTERMAN, MS '80, who is on leave from a PhD program in electrical engineering at Stanford, tells us about his adventures outside academia. He worked as chief electrical engineer on the GCH, Inc., Percheron rocket project, which blew up on the launch pad in Texas in August. A happier outcome of the project was that all the engineers involved formed their own Palo Alto company, Phoenix Engineering, Inc., of which Fruchterman is vice president. The firm does consulting in rocket engine design.

Rose Bowl prank blocked on 50-yard line

A great Rose Bowl stunt, engineered by several Lloyd House students, was foiled for the second year in a row—this time by an unknown but sharp-eyed individual who detected an irregularity in the turf along the 50-yard line a couple of days after Christmas.

Beneath the irregular piece of sod were two boxes containing a hydraulic lift and a cylinder that enclosed a four-foot balloon imprinted with the word, "Caltech."

A buried connecting wire, 75 yards in length, ran from the device to a spot on an aisle where it would have been activated by a switch after half-time ceremonies. At this point, the lift would have pushed the upper box to the surface and released the balloon—the latter trailing a 25-foot streamer bearing the word, "Beavers."

"It wouldn't have worked anyhow," said Bill Wilson, Rose Bowl manager, as quoted in the *Los Angeles Times*. "There was just too much helium."

Not so, contended an anonymous Lloyd House spokesman; the people who found the box simply didn't know how it was supposed to function. "It's irritating to have someone say it wouldn't have worked when we tested it tens of times and it worked perfectly," the spokesman said. "The people who found it must have tried to set it off the way you would a bomb."

The anonymous Lloyd House resident also took issue with Wilson's contention that the device "would have blasted a big hole in the turf on the path the teams take to the dressing room. Somebody could have got hurt. Where would you find enough dirt to fill the hole in the middle of the game?"

In reality, said the student spokesman, the hole would have been only about three inches wide by three inches deep by one and a half feet long—surely not beyond the capacity of a Rose Bowl ground crew to repair. The device even came equipped with an envelope on top, containing directions on how to dismantle it.

Last year, four Lloyd House students were arrested on December 31 while on their way to bury a similar device on the Rose Bowl sidelines. They were scaling the fence at 4:30 a.m. with the device and a post-hole digger when they were spotted by an extra security guard on duty inside the Bowl.

This year, buttressed by their knowledge of the engineering that went into last year's effort, the students put the box in place a couple of days before Christmas—and before the Bowl's security force was stiffened. But sharp eyes on the part of someone inside the Bowl foiled their plans.

Will they try again this year? "Well," acknowledges the Lloyd House spokesman, "there are already a lot of rumors . . ."

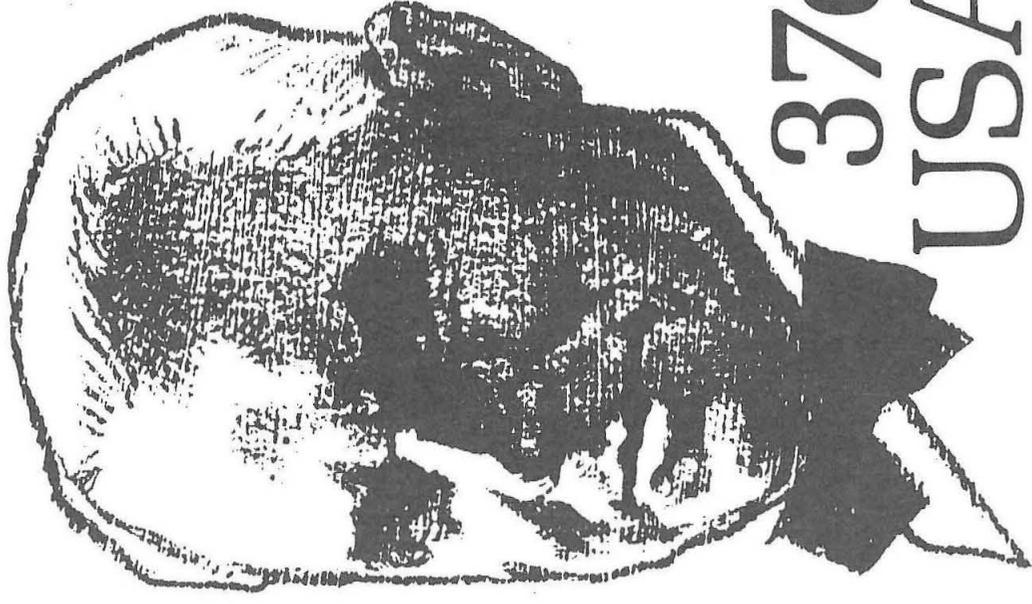
CALTECH NEWS

California Institute of Technology
1201 E. California Boulevard
Pasadena, California 91125

Published for Alumni and Friends of the
California Institute of Technology
Volume 16, Number 1, February 1982

CALTECH NEWS

Robert Millikan



37C
USA

The U. S. Postal Service's Great American series honors Robert Millikan.

February 1982