

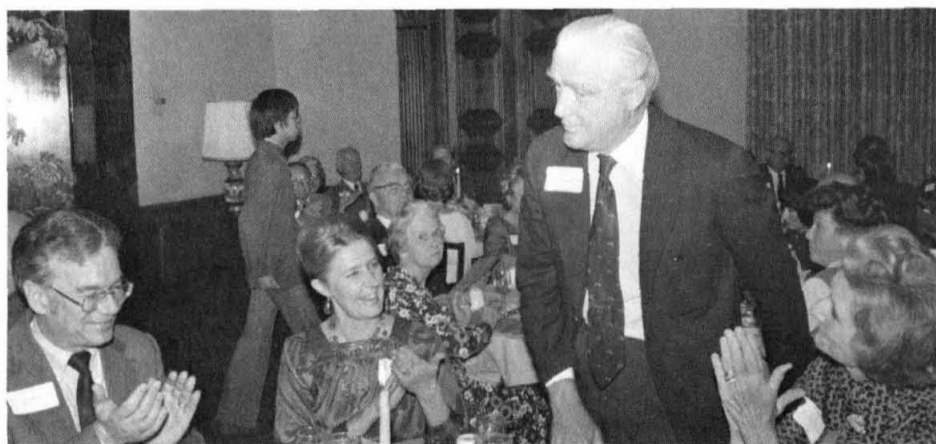
CALTECH NEWS

PUBLISHED FOR ALUMNI AND FRIENDS OF THE CALIFORNIA INSTITUTE OF TECHNOLOGY

The Associates honor their new members



The Associates honored 59 new members at a dinner and reception during March. Of the total membership, 215 converged in the Athenaeum to hear Leroy E. Hood, Ethel Wilson Bowles and Robert Bowles Professor of Biology, discuss disease, immunity, and current research in the field at Caltech. Above, from left, new members of The Associates, Mrs. Allen V. C. Davis and Mr. Davis, are welcomed by Mr. and Mrs. Joseph B. Earl and Mrs. George D. Jagels and Mr. Jagels.



New members of The Associates at dinner in the Athenaeum are, from left, Mr. and Mrs. Donn Schoenmann and Mr. and Mrs. Henry O. Eversole, Jr.

Lost asteroid rediscovered in solar system survey

Looking for a needle in a haystack is easy compared to looking for an asteroid that's lost in space. But one such asteroid, Adonis, lost since it was discovered in 1936, has been found by Charles Kowal, an associate scientist at Caltech and an observer for the Hale Observatories, as part of his survey for new and lost objects in the solar system.

Kowal, who discovered Jupiter's 13th moon, found the lost asteroid on Valentine's Day as he was searching for it with the 48-inch Schmidt telescope at Palomar Observatory. The asteroid showed up as a streak on a photographic plate that had been exposed eight minutes while the telescope tracked a star field. Adonis wasn't where it was supposed to be because its orbit had been disturbed through a close approach to Venus in 1962.

In 1936 the asteroid passed within a million miles of the earth, a near miss by astronomical standards. Adonis's orbit is inclined only one degree from the plane of the earth's orbit and this means it might collide with the earth some day — perhaps millions of years in the future — unless it hits Venus first, according to Kowal.

The rediscovered asteroid is one of a group called "Apollo type asteroids" whose paths regularly cross that of the earth. More than a dozen craters or other geological scars in the United States presumably were

made by asteroids of this type that struck the earth during the last half-billion years.

An estimated 800 Apollo asteroids about one-half mile in diameter are in orbit around the sun, according to Eugene Shoemaker, professor of geology, who is supervising a search for them. Shoemaker believes some of them are the degassed nuclei of old comets.

ALUMNI ACTIVITIES

April 27

Washington, D. C., chapter meeting. Norman H. Horowitz, Caltech professor of biology and a principal investigator in the Viking biology experiments, will discuss the search for life on Mars.

May 13 and 14

Class of 1952 reunion on campus.

May 14

Alumni Seminar Day on the Caltech campus. U. S. Senator Harrison H. Schmitt, BS '57, scientist-astronaut on the Apollo 17 mission to the moon, will be the general session speaker.

June 6

New York spring chapter meeting. William H. Corcoran, vice president for Institute relations and professor of chemical engineering, will speak.

Leroy E. Hood named to Bowles Professorship

Leroy E. Hood, BS '60, PhD '68, internationally known for his research on the immune system — especially as it relates to cancer — has been named the Ethel Wilson Bowles and Robert Bowles Professor of Biology at Caltech, acting president Robert Christy has announced.

The named chair is funded by the Ethel Wilson Bowles and Robert Bowles Memorial Fund established by the late Ethel Bowles, a physician, to support medical research and treatment facilities, and by the gift of Mr. and Mrs. Emrys J. Ross.

Dr. Bowles, who practiced in the San Francisco Bay Area for many years, was one of the earliest graduates of the University of California at Berkeley Medical School. She was deeply interested in medicine throughout her lifetime. She and Mr. Bowles, an oil developer and investor, moved to Oklahoma where they were principal stockholders and officers in the Cimarron Oil Company. Dr. Bowles lived in Pasadena late in her life.

According to Mr. Ross, a Pasadena attorney and co-trustee of the

His work also is shedding light on how the great diversity of antibodies is generated, and he is concerned with the evolution of antibody molecules and in the study of fossil proteins. In addition, he is interested in the chemical structure of antigens, the invaders that stimulate the body to produce its defenders — antibodies.

In 1974 he won a Camille and Henry Dreyfus Teacher-Scholar Grant for outstanding teaching. He also is a recipient of a career development award of the National Institutes of Health.

Pulsating stars perplex astronomers

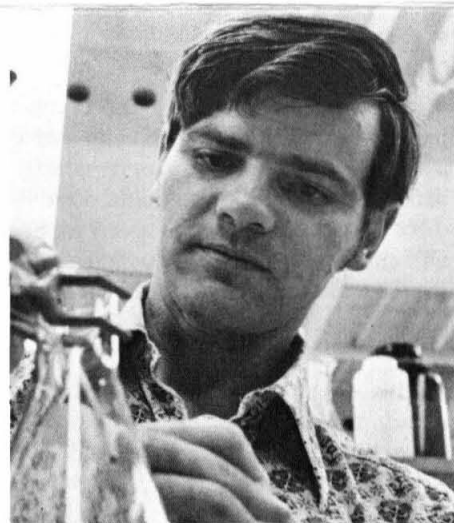
An unusual type of pulsating star with a mass two to three times larger than expected is puzzling astronomers. Leonard Searle and Robert Zinn of the Hale Observatories are considering several theories to explain the unexpected mass of the star type, including the possibility of the merging of two members of a double-star system.

Another possible explanation is that these pulsating stars were formed only one billion years ago — rather than 10 billion years ago like the other stars in their parent galaxies.

The stars are found in five of the six low-mass galaxies of the dwarf spheroidal type that are neighbors of the Milky Way Galaxy. They also have been detected in another neighbor of the Milky Way, the Small Magellanic Cloud—but not in this galaxy's companion, the Large Magellanic Cloud.

Using the 200-inch Hale Telescope at Palomar, Searle and Zinn determined that the pulsating stars have 1.5 times the mass of the sun. Their significance to astronomy, the astronomers feel, depends on the final interpretation of their origin. If they are young and were formed only a billion years ago out of the gas of a galaxy like the Draco Galaxy, for example, then their existence upsets a current theory. This theory holds that small galaxies such as the Draco are so loosely constructed and have such a small gravitational field that all of the gas should have escaped soon after the galaxy formed 10 billion years ago.

If the pulsating stars were created by the merging of two stars, then their presence in the Draco Galaxy is understandable—but their absence in the Large Magellanic Cloud is a puzzle. Such enigmas are the stuff of astronomy, however, so Zinn and Searle are continuing to seek the solution.

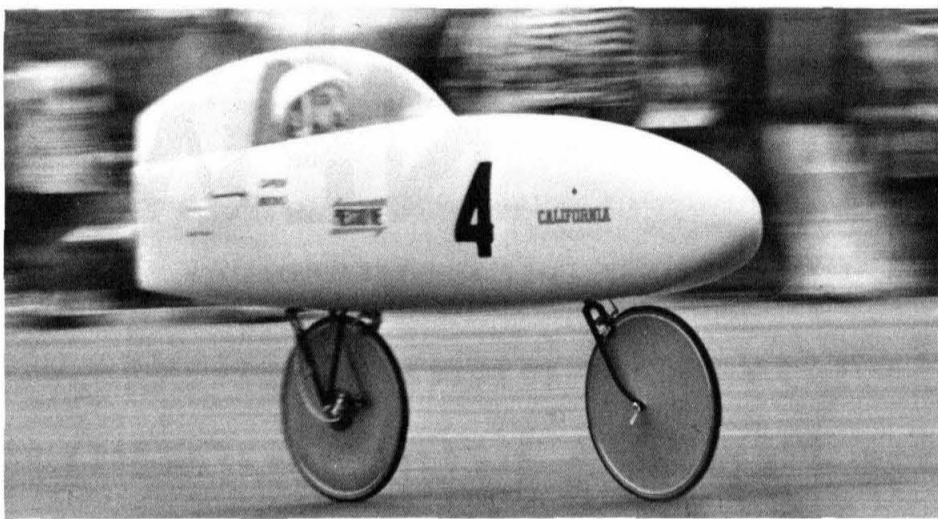


Leroy E. Hood

Bowles Memorial Fund with Mrs. Sally A. Terry of San Marino, Dr. Bowles was interested in supporting medically related research at Caltech because she believed that major discoveries at the Institute could advance the field of medicine.

Christy said that the naming of Hood to the Bowles Professorship is a tribute to the significance of his research. Hood, 38, a professor of biology, becomes the second Bowles Professor at the Institute. He succeeds Jerome Vinograd, who died last July 3. Hood, who holds a degree in medicine as well as a PhD in biology, is Caltech's faculty adviser to undergraduates planning a career in medicine.

His research has made important contributions to the understanding of the structure and diversity of antibodies, the body's first line of defense against bacteria and other invaders. He has made significant advances in determining the structures of proteins that are important in the immune system.



This exotic vehicle placed ninth in last year's International Human Powered Speed Championship. Entered by Alec Brooks while he was a student at UC Berkeley, and by a friend of Brooks's, it was called the Pressodyne and was propelled by push-pull linear pedals. Another of Brooks's co-entries, the Bunburner, placed fourth in the same event. This year Caltech students, under Brooks's leadership, hope to produce an entry for the race that will influence the design of future bicycles.

Caltech students create the bicycle of the future—today

If you can build a better bicycle, the world may not beat a path to your door but you *may* win several thousand dollars in prizes. Even more important, you may influence designers to create more efficient bicycles.

These are the goals of four Caltech students who are developing an entry for the third annual International Human-Powered Speed Championship — a sporting event to be held April 30 at the Ontario Motor Speedway.

Masterminding the design project is Alec Brooks, candidate for an MS degree in civil engineering, who in last year's race co-entered a model that placed fourth, at 44.08 mph. Working with Brooks are Derek Davis, a sophomore majoring in electrical engineering, Pat Huber, a sophomore majoring in materials science, and Colleen Ruby, a freshman majoring in biology.

In the race, they will try to break the 50 mph barrier on a level 200-meter stretch after a flying start. Any vehicle that moves is legal in this competition so long as it is strictly human powered and unassisted by towing or motor-pacing machines. Previous entries have shown how dramatic the designers can become as they think of ways to get around under their own power. Last year's winner — who achieved a speed of 47.8 mph — treadled inside a slick streamlined shell built of spruce wood and plastic film. The shell fit so tightly that it took his pit crew almost 30 minutes to wedge him in — obviously not useful for quick trips to the grocery store.

The Caltech entry will be more practical than this exotic machine, according to Brooks, who wants to increase the efficiency of a conventional 10-speed bicycle by improving its design. "We may not win but we hope our innovations will be used

on all commercially marketed bicycles within five years," Brooks said. "That's our major goal."

To achieve greater efficiency, the students are working on ways to lower the bike's wind resistance. This, according to Brooks, is the secret to improving the speed of a human-powered vehicle. Wind drag causes over 90 percent of the retarding force against an ordinary bicycle moving at 25 miles an hour. A bike with a streamlined shell surrounding the rider requires less energy per mile per pound than any other machine in history. But the lack of ventilation inside a shell can create considerable discomfort, while sensitivity to crosswinds and difficulty in climbing in and out cause other problems. The Caltech design crew will probably settle for a handle-bar mounted windshield.

"We want to clean up the components on a standard bike instead of putting the rider under a shell," Brooks said. "A windshield can reduce drag by about 35 percent and still maintain good crosswind stability. We also want to streamline the frame tubes, wheel rims, legs, and spokes."

The entry Brooks is helping to create will be less dramatic in appearance than the one he rode last year. Called the Bunburner, it was enclosed in a futuristic shell; Brooks rode it lying on his back, facing forward.

The students hope to enlist one of the top cycle sprinters on the west coast to ride their bike in the contest. A sprinter riding a conventional bike can achieve a speed of about 42 mph for 200 meters. In comparison, an average human in moderately flabby condition can manage about 20 mph on a flat stretch. If the students are successful, their design will boost the sprinter over the 50 mph mark — and bring the world a better bicycle.

Viking photographs of Mars offered to interested alumni

A panoramic color photograph of the Martian landscape, taken by cameras on board the Viking lander, is available to any interested alumnus. If you would like to receive the photograph, detach this coupon and return it to the Caltech Alumni Association, Caltech, Pasadena, 91125.

Please send a photograph of the Martian landscape to:

NAME _____
ADDRESS _____
CITY _____
STATE _____ ZIP _____

Mathematicians triumph

Caltech defeats 344 teams to win the Putnam again

They've done it again! For a record-breaking fifth time out of the past six years, Caltech's three-man mathematics team has placed first in the William Lowell Putnam Mathematics Competition. This year the team won over 344 competing groups from throughout the United States and Canada and became the only school in the 37-year history of the Putnam competition to achieve such a consecutive record.

As usual, a coterie of Caltech students won individual honors. Four of them placed in the first 20 out of 2,131 contestants.

community — on campus, at JPL, and within alumni circles. A perfect score on this marathon is 120. According to Caltech's team coach, Gary Lorden, associate professor of mathematics, this year more than 800 of the 2,131 competitors scored zero. "And this," he says, "is no disgrace." Tyler, for example, earned his ninth-place standing with a score of 54.

Many members of the Caltech faculty and JPL staff eagerly look forward to trying their hands — and heads — at Putnam problems after the exam has been given. Lorden



Caltech's victorious Putnam mathematics team examines its trophy: From left—Christopher Henley, Karl Heuer, Bert Wells, and Coach Gary Lorden.

Senior Christopher Henley placed among the top six (whose exact ranks are not announced) and became, for the second year in a row, a Putnam Fellow with a \$250 cash award. Henley is also winner of the \$3,500 1975 Putnam Prize Scholarship, given annually to only one of the Putnam Fellows.

Senior Doug Tyler placed 9th in the competition, winning \$100; Bert Wells, ASCIT president, earned honorable mention for placing 12th; and sophomore Karl Heuer won honorable mention with his 20th place.

Henley, Wells, and Heuer were chosen in advance to represent Caltech in the team competition. (Team scores are determined by averaging the members' individual ranks.)

That the Putnam exam is notoriously difficult is well known among members of the Caltech mathematics

remembers one year when a JPL staff member solved in two days one of the problems that none of the students could work during the exam.

Lorden maintains that excellence in math doesn't guarantee excellent scores on the test. The Putnam competition is, he says, very different from most standard college-level math exams. The emphasis in the Putnam is on speed (working full steam), not getting discouraged easily, and above all, being a problem solver.

"Success doesn't rest," says the coach, "on sophisticated knowledge or on specialized math techniques. It depends much more on the ability to call on a general math background and to analyze and work a tough problem quickly."

The \$500 team prize money is used toward prizes for undergraduate research in mathematics.

Gnomes celebrate founding

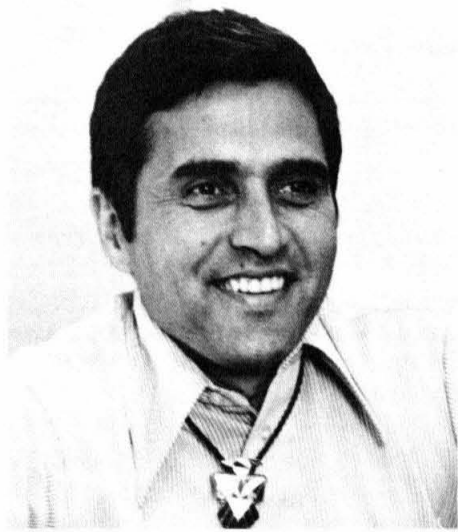


Caltech's first social organization, the Gnome Club, formed 80 years ago when the institution was known as Throop Polytechnic Institute. Of the fraternal organizations that once existed on campus, only the Gnomes continued to initiate new members after 1932; thus they remain a thriving group of alumni. Recently the Gnomes celebrated their heritage at their annual Founders' Day Dinner in the Athenaeum. In the picture above, 1976-77 President Fred A. Wheeler, BS '29, center, receives a certificate of commendation from Oliver H. Gardner, BS '51, 1975-76 president. G. L. Fletcher, BS '56, MS '57, 1977-78 president, is at right.

Preview: Seminar Day research lectures

Harrison H. (Jack) Schmitt, BS '57, U.S. Senator from New Mexico, will address the general session at Alumni Seminar Day on Saturday, May 14. Scientist-astronaut on the Apollo 17 mission, Schmitt will speak in Beckman Auditorium at 2 p.m.

During the morning and after Schmitt's talk, 12 faculty members will describe new developments in research and education at Caltech in



Harrison Schmitt

talks that are previewed below. The lectures will begin at 9:30 a.m. after registration at 8:30 a.m. in Dabney Lounge.

Following Alumni Seminar Day tradition, alumni and their guests will be served picnic lunches outside the Athenaeum at 12:30 and 1:15 p.m. with the Caltech Dixieland Band providing background music. Members of the class of 1952, which is celebrating its 25th reunion, will have lunch in Dabney Gardens.

After the talks have concluded, guests can meet their friends in the Athenaeum for a social hour at 5:30 p.m. and dinner at 6:30 p.m. Then the Caltech Men's and Women's Glee Clubs will give their traditional home concert at 8 p.m. in Beckman Auditorium. The program will feature a Polynesian review.

High school sons and daughters of alumni who may want to apply for admission to Caltech will be offered campus tours at 12:30 p.m. and conferences with members of the Admissions Office staff at 4:15 p.m.

Summaries of Seminar Day talks by Caltech faculty members and JPL staff appear below.

Immunology, Disease, and Caltech

By LEROY E. HOOD
ETHEL WILSON BOWLES AND
ROBERT BOWLES PROFESSOR OF BIOLOGY

Perhaps no other fundamental discipline of modern biology is so intimately associated with modern medicine as is immunology. Studies in this field have contributed to our basic understanding of infectious disease, allergy, cancer, and the body's autoimmune system. Moreover, fundamental advances are rapidly translated into practical medical applications. In his talk Hood will explain the function of the immune system and explore relationship to such topics as the swine flu program, organ transplantation, and cancer. Finally, he will describe Caltech's new medical science program in immunology.

Radio Astronomy Using Very Long Baseline Interferometry

By MARSHALL H. COHEN
PROFESSOR OF RADIO ASTRONOMY

Radio astronomers now regularly use telescopes separated by thousands of kilometers as elements of a radio interferometer. The baseline can be nearly a billion wavelengths long, and the angular resolution 100 micro-arcseconds. This extraordinary angular sensitivity is being used at Caltech in probing compact radio sources in galactic nuclei and in quasars.

Congress: Keystone of the Washington Establishment

By MORRIS P. FIORINA
ASSOCIATE PROFESSOR OF
POLITICAL SCIENCE

Political scientists have not yet arrived at a satisfactory explanation for the growing advantage of incumbency in a congressional race. It may be that congressmen are now judged less as national policy makers than as ombudsmen who aid constituents in dealing with the large and growing federal bureaucracies, and as pork barrelers who cadge money for their districts from the same bureaucracies. If this premise is correct, then congressmen have a vested electoral interest in establishing and maintaining centralized federal programs whose costs and benefits they can control, *whether or not* such programs are effective solutions to pressing social or economic problems.

Nuclear Fusion: Fire from Water

By ROY W. GOULD
PROFESSOR AND EXECUTIVE OFFICER
FOR APPLIED PHYSICS

For 25 years, scientists and engineers have been struggling in the laboratory to learn how to burn deuterium from seawater. Success in this difficult and challenging endeavor could provide the world with a plentiful new energy supply — nuclear fusion. Gould will describe progress toward this goal and the nature of the problems that still remain.

Earthquakes: Cause, Effect and Prediction

By HIROO KANAMORI
PROFESSOR OF GEOPHYSICS

Earthquakes are caused by stress that accumulates in the earth's crust. The theory of plate tectonics explains how these stresses build up to a sudden release. Such release can be disastrous, for more than 10,000 lives are lost to earthquakes every year, on the average. Although earthquake prediction isn't yet possible, progress is being made toward the reduction of earthquake hazards.

Nature and Nurture in Birdsong

By MARK KONISHI
PROFESSOR OF BIOLOGY

The study of birdsong, a seemingly esoteric topic for scientific inquiry, has contributed greatly to the evolution of ideas in ethology — the study of animal behavior — particularly as it relates to the question of nature versus nurture. The process

of song development varies from species to species, and the results of experiments concerning the mechanics of this development will be explained in Konishi's talk. Konishi will also explore the effects on immature birds of isolation from the flock and of deafness.

The Legacy of Viking

By B. GENTRY LEE
MANAGER, MISSION DESIGN SECTION, JPL

Almost a year ago, the first Viking spacecraft landed on Mars, bringing man face to face for the first time with the surface of another planet. The scientific harvest has been a veritable cornucopia, yielding answers to many old questions about the nature of our sister planet. At the same time, the discoveries of Viking have raised some titillating new questions about the origins of planets and life and have stimulated new thinking about the role of space exploration in man's historical and philosophical development. This stimulation of thought is the legacy of Viking.

The Chambered Nautilus: Its Ecology and Evolution

By HEINZ A. LOWENSTAM
PROFESSOR OF PALEOECOLOGY

The graceful shell of the living Nautilus has inspired both poets and painters. The evolution of its shell design is traceable via fossils over 515 million years. In his Seminar Day talk, Lowenstam will show a movie illustrating the swimming behavior of the living Nautilus, and will compare the ecology of living and extinct species. In his current investigation he is defining shell proteins to determine the genetic relationships and modes in the group's molecular evolution.

Energy Policy Alternatives for the United States

By W. D. MONTGOMERY
ASSISTANT PROFESSOR OF ECONOMICS

Three years after the oil embargo focused national attention on our energy needs, we are confronted with several major goals in our deliberations on new energy alternatives. These goals are the efficient use of alternative energy resources, low cost and abundant supplies of energy for consumers, security from future embargoes, and the protection of the environment. By examining policy packages that emphasize these goals, it is possible to delineate some inherent conflicts. A comparison of the packages with our federal energy policy suggests that the policy represents a defensible balance among the conflicting goals.

African Explosions I Know

By EDWIN S. MUNGER
PROFESSOR OF GEOGRAPHY

Current political explosions in Africa will be explored in Munger's talk as he draws heavily on his personal knowledge and his relationships with key leaders. Just back from Africa, he will present a unique perspective on the continent's future and an assessment of possible resolutions of its problems.

Am I Me: Molecular Immunology

By JOHN H. RICHARDS
PROFESSOR OF ORGANIC CHEMISTRY

We normally distinguish with exquisite precision between our own healthy cells and foreign invaders by a complex defense mechanism — the immune response. In his Seminar Day talk, Richards will draw upon such topics as immunization, transplantation, allergies, Rh incompatibility, immunotherapy for cancer, and the molecular details of the recognition of foreignness as he illustrates immunology's various aspects.

The Revolution in Computing: You Ain't Seen Nothing Yet!

By IVAN E. SUTHERLAND
PROFESSOR OF COMPUTER SCIENCE

The past 20 years have brought remarkable changes in the circuit technology with which computers are built — and an equally remarkable change in our ability to use computers to enhance human understanding. You ain't seen nothing yet, says Sutherland. The next decade promises a change just as remarkable. In his Seminar Day talk, Sutherland will discuss the technologies involved in computer hardware, software, and applications, and Caltech's work in this exciting area.

Alumni plan five-year reunions in May, June

Graduates from the class of 1972 and classes at other five-year intervals soon will have the chance to see how much their former fellow trolls have aged. Their reunions will be held during June, except for the class of 1952. Its members have planned their 25th reunion for the weekend of Alumni Seminar Day, May 13-14.

First on the schedule of June reunions is the Half-Century Club luncheon for members of the class of 1927 and all others who graduated more than 50 years ago. These alumni will be the guests of the Alumni Association at a luncheon on June 3 at the Huntington-Sheraton Hotel. John G. Case, BS '27, heads the reunion planning committee.

The other reunions will feature campus tours at 4 p.m., social hours at 5:30 p.m., and dinner at 7 p.m. in the Athenaeum. The classes, dates, and persons in charge of arrangements include:

- 1932: June 3, Robert E. Foss
- 1937: June 4, Paul C. Schaffner
- 1942: June 11, Fredrick H. Felberg
- 1947: June 4, Le Val Lund
- 1957: June 4, Reuben B. Moulton
- 1962: June 11, Frank Ridolphi
- 1967: June 11, Terry Hendrickson, Terry G. Allen, and Daniel E. Erickson

The class of 1972 is planning a picnic on June 11 at Tournament Park or at the beach. Robert A. Bell is in charge of arrangements.

PERSONALS

1923

JOSEPH R. ALCOCK is retired and living in Chula Vista, California.

1924

JOSEPH E. MAYER, professor of chemistry, emeritus, at UC San Diego, is the coauthor of a book, *Statistical Mechanics*, published in a revised second edition by Wiley & Sons.

1925

CARYL KROUSER and his wife have been traveling through Europe, Israel, Mexico, and the Orient.

1930

WARREN N. ARNQUIST, PhD, will receive the "Alumnus of Merit" award from the alumni association of Whitman College in Walla Walla, Washington, on May 21. Arnquist is retired and living in Playa del Rey, California.

1932

ROBERT W. WEBB, professor of geology at UC Santa Barbara, has coauthored a book, *Geology of California*, which deals with the impact of man on the geologic environment, and recent theoretical advances in sea floor spreading and plate tectonics.

1936

SHERWOOD K. HAYNES, PhD, received the Distinguished Faculty Award from Michigan State University where he is professor of physics. Haynes is well known for his research and publications concerning auger electron spectroscopy. His award is the highest honor conferred by the university on its faculty members.

1937

CLAUDE B. NOLTE is vice president of Baker Nolte Baker, a management consulting service. His book on *Optimum Pipe Size Selection* will soon be published.

1940

ROBERT C. BRUMFIELD, MS '41, PhD '43, writes, "In 1972 I founded the William Harvey Research Corporation to build medical devices under my patents. The Harvey oxygenator was particularly successful and is widely used in cardiovascular surgery in lung and temperature-control functions. In 1975 the company was merged with C-R. Bard, Inc., of Murray Hill, New Jersey. I am currently developing three additional classes of medical devices and working with companies, large and small. I am developing an interest in new technical companies and sources of venture capital for them."

1945

WAYNE T. McMURRAY, a partner of the Weymouth Crowell Construction Company of Los Angeles, was appointed to the board of directors of Tri-Cities Municipal Water District of San Clemente.

DONALD C. TILLMAN, MS '47, Los Angeles City engineer, has been named Man-of-the-Year by *American City & County* magazine for his "professional dedication and resistance to red tape."

1947

E. ARTHUR TRABANT, PhD, president of the University of Delaware, has received a Distinguished Service Award from the *News-Journal Papers* in Wilmington for contributing to the quality of life in the state of Delaware. He was chosen for leading the University through a transitional period "with imagination and creativity."

1948

JAMES R. DAVIS, MS '49, president of Converse, Davis & Dixon Associates of Pasadena, California, received an engineering merit award.

1949

ALBERT H. CLANCY, JR., Eng., retired from the Navy in 1973 and is teaching in the engineering division of Foothill College, Los Altos, California.

1956

ARLEN W. BELL, MS '61, has resumed his private consulting practice in structural, civil, mechanical, and environmental engineering. He was formerly manager of research and development and of product and process development at KVB, Inc.

1957

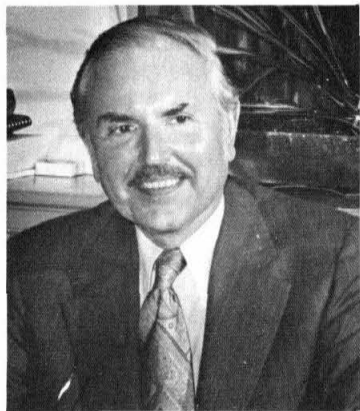
WILLIAM T. McDONALD, MS '58, received an Engineer of the Year award from the Rockwell International Corporation. He is a staff scientist in the autoneutronics group's strategic systems division in Anaheim, California.

1958

MICHAEL A. COWAN, MS, married Barbara Gewinner of St. Louis on July 1, 1976. Cowan is a senior staff engineer with McDonnell Douglas, where he has spent the last six years doing research and development of digital flight control systems. He is currently assigned to the F-18 project as a flight control software engineer. Mrs. Cowan is a nurse at St. Mary's Hospital.

1959

RICHARD L. COHEN, MS, PhD '62, member of the technical staff in the crystal physics research department at Bell Laboratories, has written a book, *Applications of Mossbauer Spectroscopy*, Vol. I.



E. Arthur Trabant

1961

ELI I. CHERNOW, attorney and special assistant to California's Governor Brown for environmental protection, was sworn in as a judge of Los Angeles County Superior Court on February 25. Before his appointment to Brown's staff, he was an associate professor of law at the University of California Law Center and a consultant to the Environmental Quality Lab at Caltech.

HUGH H. KIEFFER, PhD '68, writes, "Sue (SUSAN WERNER KIEFFER, MS '67, PhD '71) is assistant professor of geology at UCLA and is working on eruption mechanisms of geysers and volcanoes. I'm associate professor of planetary physics at UCLA and had a busy summer as principal investigator of the infrared thermal mapping experiment on Viking. The experiment continues — hopefully — for a full Martian year."

1962

RICHARD C. EDEN, MS, principal scientist in solid state electronics at Rockwell International Corporation in Thousand Oaks received an Engineer of the Year award from his firm on February 24.

HAROLD E. MARR III writes, "Fifteen years after graduation from Caltech, I am well entrenched in the federal bureaucracy, armed with a PhD, and living in the suburbs of Washington, DC, with my wife, Diane, and four children, Christopher, Laurie, Michael, and Amy Beth."

1964

GEORGE N. REEKE, JR., was promoted from assistant professor to associate professor of molecular and developmental biology at the Rockefeller University in New York.

1965

VIRGINIA L. TRIMBLE, MS, PhD '68, was the first woman to be named the outstanding young scientist in the state by the Maryland Academy of Sciences. An associate professor of astronomy and physics at the University of Maryland, she was selected for the 1976 award on the basis of her outstanding contributions in astrophysics, especially for the studies of stars in the later stages of their evolution, and for her studies of other facets of star life. To receive the award, an individual must be under 35 and have performed a major part of her or his work in Maryland.

1969

ROBERT E. HAAS writes, "I'm taking a position as a design engineer with Tektronix in their information display division in Willsonville, Oregon. My wife, Merrily, bore a daughter, Marjene Elizabeth, on December 14, 1976."

1970

DAVID I. LEWIN writes that he has been leading a double life — "a mild-mannered medical writer by day, by night a struggling young fiction writer." He says that none of his fiction has been published thus far, but that he finds the writing itself enjoyable and challenging.

1973

RICHARD L. SHORT will graduate from the UC San Diego School of Medicine on June 5. He plans to marry Patricia Glasser the following week.

1974

MICHAEL J. MARIANI writes, "I just returned from two years in Liberia as a Peace Corps Volunteer. I was teaching science and it was really an amazing two years." Now he hopes to go to medical school.

OBITUARIES

1915

VERNE D. ELLIOTT on January 3. He is survived by his wife, a daughter, and a son.

1921

HENRY R. CASE, a retired engineer of the Pacific Telephone Company, on January 30 in Laguna Hills, California. He is survived by a son.

1922

HAROLD S. BARHITE in Riverside, California, after a short illness.

1926

FELIX O. FRICKER on February 14. Surviving is his wife, Edith.

1930

JAMES H. MacDONALD of a cardiac arrest on January 5.

1934

FRED C. ROEDING who drowned in July 1976 while taking a scuba diving qualification test. He was a retired engineer for Westinghouse in Athens, Georgia.

1941

EBEN VEY, MS '42, Eng '43, on January 22 after a long illness. Vey was professor of civil engineering at the Illinois Institute of Technology in Chicago and was national director of the American Society of Civil Engineers. Surviving are his wife, Georgiana, a son, and two sisters.

1944

DONALD A. SCHEI, MS, on October 14 of a heart attack while deer hunting in Wyoming. For the past 30 years he had been co-owner of Lakeland Sporting Goods in Bemidji, Minnesota. Surviving are his wife, Helen, and a daughter.

1947

C. BURTON CRUMLY, MS '49, on May 22, 1976, of a heart attack. Crumly was the senior staff scientist at Applied Technology, Sunnyvale, California. He is survived by his wife, Robyn, two sons, and a daughter.

1948

RICHARD M. ROEHM on July 8, 1976.

1950

JOHN H. McNAMARA, MS, on September 24, 1976. He was the general manager of John Deere & Company of Davenport, Iowa.

1953

DOUGLAS S. MACKAY, Eng, on January 16 at the West Hills Hospital in Canoga Park, California. He is survived by Mrs. Mackay.

1955

ARTHUR C. HEYMAN, MS, on October 25, 1976. He was a senior aerodynamicist with Republic Aircraft of Farmingdale, New York.

1958

NORMAN T. ELLETT and Mrs. Ellett in an automobile accident in February. Ellett was director of corporate planning with Baxter Labs, Inc., of Deerfield, Illinois. Surviving are two sons.

1961

VICTOR A. ERMA, PhD, on December 24, 1976. Erma was a principal scientist with the Heliodyne Corporation of San Diego.

1968

JAMES E. WESTMORELAND III, MS, PhD '71, on November 17, 1976. He was a research physicist with the U.S. Naval Research Laboratory in Washington, DC.

1970

SHUI-PONG VAN, PhD, in a car accident on January 27.

Caltech receives funds to process papers of three scientific leaders

Scholars interested in the history of science and in the great men of science will soon be able to study the papers of three outstanding Caltech leaders. Millikan Library Archivist Judy Goodstein has received two federal grants totaling \$49,555 for processing thousands of documents for scholarly perusal.

A collection of 125,000 pages by and about Robert Andrews Millikan will be prepared for microfilming with a \$14,072 grant from the National Historical Publications and Records Commission. The first administrative head of the modern Caltech, Millikan was a Nobel laureate and a leading spokesman for science in the 1920s and 1930s.

The 50,000 documents of Lee A. DuBridge and 100,000 items of Theodore von Kármán will be prepared for study through a \$35,483 grant from the National Endowment for the Humanities. DuBridge is Caltech's president emeritus and former presidential science adviser; von Kármán, the "father of aerodynamics," was largely responsible for Caltech's emergence as a world leader in aeronautical research and engineering.

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