

The Month at Caltech

New Members of the National Academies

Membership in the 108-year-old National Academy of Sciences or the National Academy of Engineering, established in 1964 as an outgrowth of NAS, is one of the highest honors that can be accorded to an American scientist or engineer. The list of Caltech faculty members who have been elected is long and distinguished. At their annual meetings this year the academies added four more Institute scientists to the NAS roster (bringing Caltech's membership to 40), and two engineers to NAE (making a total of 11).

The new NAS members are Harry B. Gray, professor of chemistry; A. J. Haagen-Smit, professor of bio-organic chemistry emeritus; Hans W. Liepmann, professor of aeronautics (and a member of NAE since 1965); and Gerald J. Wasserburg, professor of geology and geophysics. NAE's new members are Lester Lees, professor of environmental engineering and aeronautics; and Roy W. Gould, professor of electrical engineering and physics.



Gray



Haagen-Smit



Liepmann



Wasserburg



Gould



Lees

New Trustees

Two new members have been elected to Caltech's board of trustees, bringing the total current membership to 44. The new members are R. Stanton Avery, founder, chairman, and chief executive officer of Avery Products Corporation of San Marino, California, and Lew R. Wasserman, president and chief executive officer of MCA Inc.

Recently named the California Manufacturer of the Year by the California Manufacturers' Association, Avery started his company three years after his graduation from Pomona College in 1932. It is now a leading manufacturer of self-adhesive products, with 27 factories and sales operations in over 20 countries around the world.

Avery is chairman of the Claremont University Center board of fellows, and is a trustee of the Claremont Graduate School and of the Athenian School of Danville, California. In 1968 Pomona College awarded him an honorary Doctor of Laws degree. He is a member of the board of trustees of the Huntington Library and Art Gallery and of the Los Angeles County Museum of Art, is also on the governing board of the Performing Arts Council of the Los Angeles Music Center, and is a director of the Los Angeles World Affairs Council.

Wasserman, who has been associated with the Institute through membership on the President's Council, joined MCA in 1936 and was named president of the corporation in 1946. Founded in 1924 as Music Corporation of America, MCA became the world's largest theatrical talent agency. It abandoned talent representation when it acquired Universal Studios and entered motion picture production. MCA is now also in the recordings and television business and has other financial interests both inside and outside the entertainment industry.

In addition to his business interests, Wasserman is chairman of the board of the Center Theater Group of Los Angeles, a member of the board of governors of the Performing Arts Council of the Music Center and of the Radio Free Europe Committee, and a trustee of the Hollywood Canteen Foundation. He is also a trustee of the John Fitzgerald Kennedy Library in Boston, and of the John F. Kennedy Center in Washington, D.C.

Industrialist of the Year

Arnold O. Beckman, chairman of Caltech's board of trustees, has received the 1971 Industrialist of the Year Award of the California Museum of Science and Industry. In presenting the bronze plaque, Samuel B. Stewart, president of the Greater San Francisco Chamber of Commerce, commended Beckman for his accomplishments in three related fields—industry, education, and public service. "Taken individually," Stewart said, "Dr. Beckman's efforts in any one of these fields might well merit the award. However, it is in contributing to the progress of each, and the effective interrelationship of all, that he has made lasting contributions to the progress of our state and the nation as a whole."

A Caltech alumnus, Beckman received his PhD in photochemistry in 1928, and he was on the faculty of the Institute from then until 1940. While at Caltech he became interested in applying electronic techniques to problems of chemical analysis and subsequently founded Beckman Instruments, Inc., to develop and manufacture scientific instruments. This company has become one of the world's leading manufacturers of precision instruments and a major force in the growth of the instrument industry in California.

California Museum of Science and Industry Awards for the industrialist and the scientist of the year have been made for the last 14 years "to give recognition and inspiration to the richly creative men and women of science and industry in our state." The Scientist of the Year Award for 1971 was presented to Peter Duesberg of UC Berkeley by Caltech's president, Harold Brown, who was chairman of the science award jury.

Five men who are now—or were at the time they received the award—members of Caltech's faculty have received Scientist of the Year Awards: William A. Fowler in 1958, Frank Press in 1961, Jesse Greenstein and Maarten Schmidt in 1965, and Robert Sinsheimer in 1968. In addition three alumni have been recipients: Saul Winstein, PhD '38, in 1963; Wolfgang K. H. Panofsky, PhD '42, in 1967; and Walter H. Munk, BS '39, MS '40, in 1969. In 1966 a special trustees' award was given to William H. Pickering, director of the Jet Propulsion Laboratory and also a Caltech alumnus, BS '32, MS '33, and PhD '36. The Industrialist of the Year Award has gone to one other trustee of the Institute: Stephen D. Bechtel Jr. received it in 1968.

Rumford Award

Marshall H. Cohen, professor of radio astronomy and staff member of the Owens Valley Radio Observatory, is one of 21 scientists who received the 1971 Rumford Award of the American Academy of Arts and Sciences.

The Rumford Award, established in 1796 to encourage research in the fields of heat and light, is the oldest scientific prize in the Western Hemisphere, and until now it has always been awarded to individuals. This year the academy changed its tradition to recognize work done by three outstanding teams whose membership totals 21—a 9-member team in Canada, 8 men at MIT, and 4 affiliated with the National Radio Astronomy Observatory and Cornell University. Cohen's work was done with the NRAO-Cornell group, two other members of which are Caltech alumni: Barry Clark (BS '59, PhD '64) and Kenneth Kellermann (PhD '63).

All three teams have contributed to development of very-long-baseline interferometry—a new technique of radio astronomy that uses two radio antennae separated by many thousands of miles, both simultaneously observing the same small radio source. Carefully synchronized atomic clocks are used to time the instant of simultaneous observation, and the interference fringes are created in a computer by comparing the magnetic-tape output of the two antennae. The result is resolution 1,000 times better than that obtainable with the largest optical telescope. "The Great Soviet-American Extragalactic Investigation," published in the March 1970 issue of *Engineering and Science* magazine, is an account furnished by Clark and Kellermann of some of the unexpected practical difficulties they encountered in carrying out one phase of their research.

Cohen, who first came to Caltech in 1965 as a visiting associate professor, received his BEE in 1948, his MS in 1949, and his PhD in physics in 1952—all from The Ohio State University. He spent 12 years on the faculty at Cornell University, first in electrical engineering and then in astronomy. For the two years before he came to Caltech in 1968, he was at UC San Diego as professor of applied electrophysics.

Bruce Medal

Jesse L. Greenstein, professor of astrophysics, executive officer for astronomy, and staff member of the Hale Observatories and the Owens Valley Radio Observatory, is this year's recipient of the Bruce Medal, which is the highest honor of the Astronomical Society of the Pacific. It has been awarded annually since 1898 "in recognition of distinguished services to astronomy" and goes to nominees proposed by six major observatories and selected by the directors of the society.

Greenstein, who received the honor in Hawaii on June 24 at the society's annual meeting, came to Caltech in 1948 to set up the graduate school of astronomy. The American Council on Education now rates it as the top graduate program in astronomy in the country.

An expert in the discovery of peculiar stars and the study of their composition from their spectra, Greenstein collaborated with Caltech physicists in developing the theory connecting differences in the composition of stars with the nuclear energy-producing processes occurring in their interiors. He has studied the spectra of low-luminosity white dwarf stars and the spectra and physical properties of the quasi-stellar radio sources.

Several Institute astronomers have won the Bruce Medal previously. George Ellery Hale, a solar astronomer and one of the founders of Caltech, was the recipient in 1916. The winner in 1969 was Horace Babcock, director of the Hale Observatories; and last year the medal was awarded to Fred Hoyle of the Institute of Theoretical Astronomy of Cambridge, England, and visiting associate in physics at Caltech.

Professor Emeritus

Paul C. Eaton—dean of students at Caltech for 22 years—came to the Institute in 1946 as a visiting lecturer in English, and the following year he was appointed associate professor of English and associate dean of students. In 1953 he became dean of students. He gave up his duties as dean in 1969 but has continued to teach English full time for the last two years. In July he becomes professor of English emeritus.

In his final annual report, Eaton reminisced: “In this report, my twenty-second and last, I have difficulty in resisting the temptation to point to marble halls which have replaced the brick edifices or empty spaces supporting student life in 1947-48, *Anno DuBridgensis II*. For these monuments, look about you. The Scott Brown Gymnasium, the Alumni Swimming Pool, the health center, three new undergraduate student houses, Winnett Center, and the Beckman Auditorium have all been built and put to use during the past two decades. Complementing the added facilities for instruction, research, and nonacademic administration, they symbolize as well as support the California Institute’s interest in the totality of education. I am gratified that I have had the opportunity to participate in the planning, programming, staffing, and on-going activities of these extracurricular centers.

“At the start, along the course, and at the finish of these 22 years I have enjoyed the help and friendship of some fine people. From the beginning there was the counsel of my more experienced colleagues, Deans Franklin Thomas, Winch Jones, and Foster Strong, of senior faculty and administrators of the Millikan era, and of Dr. Millikan’s successor—Lee DuBridge. Nobody brought up under the aegis of these wise and devoted men could go wrong all the time.

“At the end, it is gratifying to see responsibilities taken over by others, cast in the same mold but ably adapting to changing conditions, men like Lyman Bonner, Robert Huttenback, David Wood, Peter Miller, and David Smith, under Dr. DuBridge’s successor—Harold Brown.

“Between September of 1947 and June of 1969 very little of what I was



Paul C. Eaton

able to accomplish was the sole result of my own efforts or abilities. Most of what can be recalled with satisfaction was achieved through the whole-hearted cooperation not only of those named above but of a host of students, professors, administrators, trustees, coaches, doctors, secretaries, resident associates, business officers, and others of the campus community.

“This is the spirit in which the Caltech student, whether he realizes its value at the time or not, lives and has his being during his undergraduate years. It makes possible the continued success of the Honor System, the student houses, the ASCIT Research Center, student participation in the general governance, the athletic, service, and cultural programs, and—one continually confides—the absence of the need to adopt disruptive means for redress of grievance.”

Now that he has retired from both of his Caltech roles, Eaton—a native New Englander—looks forward to spending

more of each year “down east” than has been possible during the years of his residence in California, though he has managed to spend most summers in Maine. He was born in Nashua, New Hampshire, took his SB at MIT in 1927 and his AM at Harvard in 1930, and taught in New England until 1946—first at Phillips Exeter Academy and then for 13 years at MIT.

During World War II Eaton was a lieutenant commander in the U.S. Naval Reserve and saw sea duty in both the Atlantic and the Pacific with the Third, Fifth, and Tenth fleets. For duty from 1944 to 1945 he earned a letter of commendation from the Navy, and in 1945 he was awarded the Navy Commendation Medal. His interest in maritime activities continues; he is a member of a yacht club in Islesford, Maine; of the Marine Associates of the Peabody Museum of Salem, Massachusetts; and of the Bath (Maine) Marine Research Society.