

The Month at Caltech

Commencement Speaker

James C. Fletcher, newly appointed administrator of the National Aeronautics and Space Administration, will be the speaker at Caltech's 77th commencement on June 11. He is a Caltech alumnus (PhD '48) and was the recipient of one of the Institute's first Alumni Distinguished Service Awards.

A native of New Jersey, Fletcher holds a bachelor's degree from Columbia University. Even before he took his Caltech degree, he did research on sonar and underwater devices with the U.S. Navy Bureau of Ordnance. In 1941 he was a special research associate at Harvard University; and in 1942 he went to Princeton as a teaching fellow, instructor, and research physicist.

At the end of World War II he began graduate work at Caltech, and after receiving his doctorate became director of the theory and analysis laboratory of the Hughes Aircraft Company, working there on the Falcon air-to-air missile and the F-102 all-weather interceptor. In 1954 Fletcher joined the Ramo-Wooldridge Corporation and soon became director of its Space Technology Laboratories, which had technical responsibility for all the nation's intercontinental ballistic missiles, the intermediate range Thor missile, and our first space probe—Pioneer IV.

Fletcher was one of the organizers in 1958 of the Space Electronics Corporation, which in 1960 became a part of Aerojet-General Corporation. In 1964 he resigned as Aerojet's systems vice president and president of its subsidiary Space-General Corporation to become president of the University of Utah.

Among Fletcher's contributions to the nation are service on more than 50 national committees and chairmanship of 10 of these. He has been a member of President Johnson's Science Advisory Committee, the Task Force on Higher Education, and the President's Committee on the National Medal of Science.

Guggenheim Fellowships

Three Caltech faculty members and three alumni are among the 354 winners of John Simon Guggenheim Memorial fellowships for 1971. The fellowships are awarded on the basis of demonstrated accomplishment in the past and strong promise for the future.

Steven Frautschi, professor of theoretical physics, will be doing theoretical studies in high energy particle physics at CERN, a Swiss research center for the study of nuclear and particle physics, located in Geneva. Frautschi, who has been at Caltech since 1962, will be on leave from September 1971 to September 1972.

Murray Gell-Mann, Robert Andrews Millikan Professor of Theoretical Physics, will also be at CERN for the same period. Gell-Mann came to Caltech in 1955 and was winner of the Nobel Prize in physics in 1969. He will be making theoretical studies in elementary particle physics.

G. Wilse Robinson, professor of physical chemistry and a member of the faculty since 1959, is making studies in photobiology. He left Caltech this month to spend five weeks in England beginning his project; after a summer back in Pasadena, he will leave in September for three to five months in New Zealand.

Caltech alumni recipients of Guggenheim fellowships this year include Robert L. Kovach, PhD '62, professor of geophysics at Stanford, who will be making studies of man's intervention in geologic processes; David E. Metzler, BS '48, professor of biochemistry at Iowa State University, who will work on the chemical reactions of living cells; and Steven E. Schwarz, BS '59, MS '61, and PhD '64, associate professor of electrical engineering and computer sciences at UC Berkeley, who will do research in quantum electronics.



New Executive Officer

Norman H. Horowitz, professor of biology, has been appointed executive officer for biology—a newly created position. He will assist the chairman, Robert L. Sinsheimer, in the administration of the division.

Horowitz, a Caltech alumnus (PhD '39), has been a member of the faculty of the Institute since 1946. He is noted for his work in biochemical genetics, and is at present studying the water metabolism of the common mold *Neurospora*. For five years (1966-70) he was head of the bioscience section of the Jet Propulsion Laboratory. He is now a part-time consultant to the JPL Viking biology team, which is designing a spacecraft that will land on the planet Mars in 1975 and search for evidences of life there. The team is also investigating the fundamental chemistry of pre-biological synthesis of organic matter on the planets.

With Horowitz, there are now eight executive officers among the six divisions at the Institute. The others are Norman Davidson, for chemistry; David Elliot, for humanities and social sciences; Jesse Greenstein, for astronomy; W. A. J. Luxemburg, for mathematics; Jon Mathews, for physics; C. J. Pings, for chemical engineering; and Ernest Sechler, for the graduate aeronautical laboratories.

Honors and Awards

Felix H. Boehm, professor of physics, will be doing advanced research in Switzerland next fall under a National Science Foundation Senior Faculty Fellowship. He will work at CERN, a leading Swiss research center in nuclear and particle physics, studying the nuclear properties in mesic atoms (the short-lived systems connecting a meson and an atomic nucleus).

At CERN, he will collaborate with Egbert Kankleit, who was a senior research fellow in physics at Caltech in 1964. At that time, Kankleit and Boehm worked together in pioneering research into the "weakly interacting" nuclear force in nature.

Boehm, who is a graduate of the Federal Institute of Technology in Zurich, has been at Caltech since 1953.

Carver A. Mead, professor of electrical engineering, has won the T. D. Callinan Award of the American Electrochemical Society's Dielectrics and Insulation Division. The award recognizes Mead's work in developing the theory of flow of electric current in dielectric materials (materials that do not readily conduct electricity) and for his work on dielectric thin films in microelectronics.

Mead received his BS at Caltech in 1956, his MS in 1957, and his PhD in 1959. He has been a member of the faculty since 1958.

Jack E. McKee, professor of environmental engineering, was recently presented with an Outstanding Engineering Merit Award by the Institute for the Advancement of Engineering. McKee, who has been a member of the Caltech faculty since 1949, has received numerous honors for his pioneering research on water quality and waste treatment.

Thomas A. Tombrello Jr., associate professor of physics, and Edward C. Stone Jr., assistant professor of physics, are among 77 young physical scientists who have just been awarded Alfred P. Sloan Foundation research fellowships.

Sloan research fellows are selected for outstanding research potential on the basis of nominations by senior colleagues who are familiar with their work. They



Freshman Re-orientation

Approximately 150 freshmen, upperclassmen, and professors turned up in Dabney Garden on April 10 to spend most of a sunny Saturday in a Freshman Orientation Workshop discussing problems in placement procedures, courses, and social life at Caltech. Sponsored by the Deans' Office and the Caltech Y, the workshop gave students and faculty a chance to compare problems, as this group is doing with Robert Sinsheimer, chairman of the biology division. Another outcome was a long-range plan for collecting data about classes, instructors, and Institute life in general.

receive research support averaging \$8,750 a year for two years and are free to shift the direction of their research at any time if a more promising line of inquiry becomes apparent.

Tombrello is currently working with the low temperature physics group in the Kellogg Radiation Laboratory in a cooperative venture to test the feasibility of building a superconducting linear accelerator for accelerating heavy ion beams. He is also working on the application of nuclear physics to solid state and astrophysical problems.

Stone's research is in the general field of cosmic rays. He is involved with several satellite and balloon-borne experiments for NASA that are designed to provide information on the origin of cosmic rays, their propagation in space, and their interaction with the earth's magnetic field.