The Month at Caltech

National Academy of Sciences

At its annual meeting last month the National Academy of Sciences added two more members of Caltech's faculty to its roster; they are also both alumni. Roy Gould, professor of electrical engineering and physics, and Leon Silver, professor of geology, bring the number of Institute faculty members to 49, out of a total NAS membership of approximately 1,100.

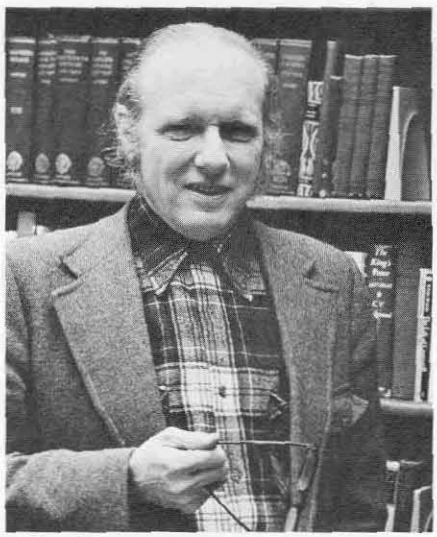
Gould (BS '49, PhD '56) is also a member of the National Academy of Engineering. He has been on the Caltech faculty since 1955 and is currently executive officer for applied physics. The NAS citation describes his fields of interest as "electron and ion dynamics, plasma oscillation and wave phenomena, physics of ionized gases, electromagnetism, microwaves, plasma physics, and controlled thermonuclear fusion." From 1970 to 1972 he was on leave from the Institute to serve as director of the Atomic Energy Commission's division of controlled thermonuclear research. During this period he supervised fusion-research efforts conducted at Lawrence Livermore, Los Alamos, and Oak Ridge Laboratories; at several private industrial laboratories; and at a number of universities. He is currently chairman of the American Physical Society's Division of Plasma Physics.

Silver received his PhD in 1955, and he has been a member of the Institute faculty since then. He has done extensive research on the older basement rocks of North America with particular emphasis on geological formations in Arizona and in the San Gabriel Mountains.

He has been actively involved in the lunar exploration program, using radiometric techniques to establish the age, impact history, and evolution of lunar surface materials brought back by Apollo crews. He trained Apollo crews 13 through 17, contributing greatly thereby to the soundness of the lunar collecting program. His NAS citation points out that he "is virtually unique among geochronologists in that he employs geology, geochemistry, and geochronology to advance our understanding of the earth's crust and lunar surface."

Roy Gould

Leon Silver



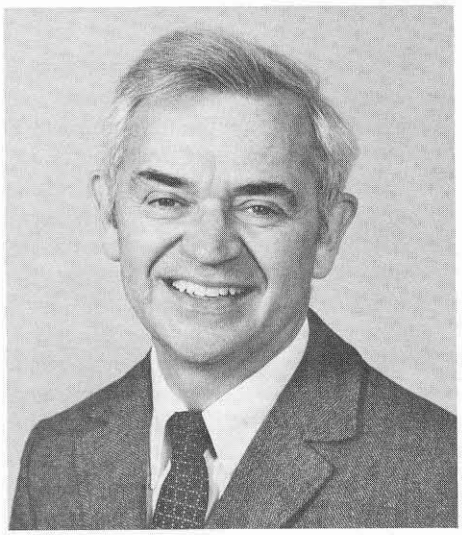
William Riker

By adoption, Caltech can also claim one other new NAS member. He is William H. Riker, chairman of the department of political science at the University of Rochester, who is currently a Sherman Fairchild Distinguished Scholar at the Institute. Dr. Riker is noted for introducing mathematical methods into the study of politics and government.

National Academy of Engineering

The National Academy of Engineering's annual election of new members in April increased Caltech's representation by five—two faculty and three alumni. One of the faculty members is also an alumnus; Frank E. Marble (AE '47, PhD '48) is professor of jet propulsion and mechanical engineering. The other faculty member is Ronald F. Scott, professor of civil engineering.

Marble's research deals with turbulent combustion processes in such diverse fields as chemical lasers, central power stations, and jet engines. He is concerned with noise created by jet engines, especially that associated with the internal aerodynamics of turbine and compressor components, and he is studying the attenuation of noise by vaporization of liquid droplets. He is a member of the National Academy of

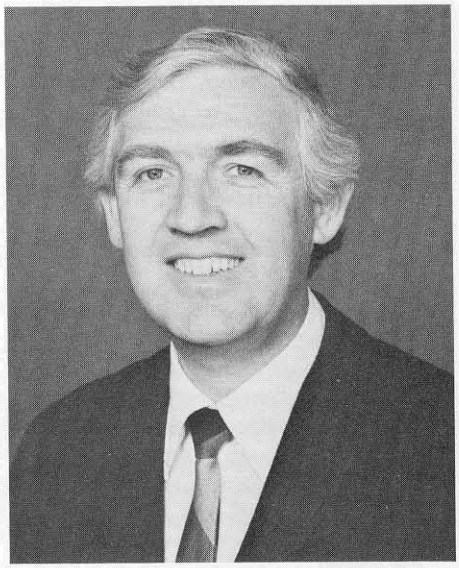


Frank Marble

Sciences committee on sonic boom and engine noise for supersonic transports and of the National Research Council's committee on motor vehicle emissions. His election to NAE recognized his work in aero-thermal chemistry and its applications to problems of gas turbines.

NAE honored Scott for his contributions to the theory and applications of soil mechanics. His current research is on the behavior of soils in earthquakes and on the ocean bottom, and on the properties of lunar soils. He has also studied the mechanical behavior of frozen ground and permafrost.

Several years ago Scott investigated the mechanical properties of the moon's surface, directing the Surveyor spacecraft's mechanical arm to dig holes and perform other tests on the lunar surface. The information gained was later used in the design of the lunar landing module and several experiments in the Apollo program.



Ronald Scott

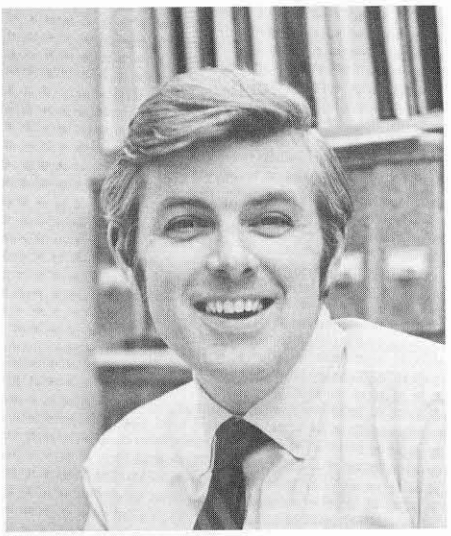
New alumni members of the NAE are Phillip Eisenberg (CE '48) of Laurel, Maryland, for contributions to naval architecture, particularly ship hydrodynamics; James C. Elms (BS '48) of Washington, D.C., for contributions to conceptual designs and management of space, electronics, armament, and transportation systems; and Thornton A. Wilson (MS '48) of Seattle, Washington, for leadership in the engineering and management of major complex aerospace systems for commercial and military use.

New Director for EQL

Norman H. Brooks, professor of environmental science and civil engineering, has been appointed director of Caltech's Environmental Quality Laboratory. He succeeds Lester Lees, professor of environmental engineering and aeronautics, who has served as director since EQL was established in 1971.

Brooks is a native of Massachusetts and received his AB in mathematics from Harvard in 1949 and his MS in civil engineering in 1950. He was awarded his PhD in civil engineering and physics from Caltech in 1954, and he has been on the faculty ever since. Interested in many phases of environmental pollution control, Brooks has directed his hydraulic research toward developing effective ways to reduce the contamination of the ocean from sewage effluents and from heated water discharges by power plants. He has been a consultant to a number of engineering firms, corporations, and governmental agencies on design of outfalls for pollution control, and is currently a member of the Environmental Studies Board of the National Academy of Sciences and the National Academy of Engineering.

Since it was established, EQL has done extensive research and published a series of significant reports on such



Norman Brooks

subjects as power plant siting, air pollution control, strategy for improving the air quality of the Los Angeles Basin, energy conservation, and solar and geothermal energy. Brooks expects that these projects will continue, and he also hopes to initiate studies related to water quality and to control of hazardous substances in the environment.

Charles Bures, 1910-1974

Charles E. Bures, professor of philosophy, died in Pasadena on April 30 after a long illness. He was 64.

A native of Cedar Rapids, Iowa, Dr. Bures received his BA from Grinnell College in 1933. His MA in 1936 and his PhD in 1938 were from the University of Iowa. He served on the faculties of the College of Idaho, USC, and the University of Oregon, and as a personnel administrator for North American Aviation before coming to Caltech in 1949. He has specialized in the philosophy of science and the concept of probability.

He was a member of several professional societies and of the Sierra Club, the National Audubon Society, and other organizations interested in the preservation of the environment.

Dr. Bures is survived by his wife, Helen, and a brother, Frank L. Bures of Des Moines, Iowa.