



*E. h. Grayson*

## EDWARD L.GINZTON

1915–1998

BY EDWARD J.BARLOW

EDWARD LEONARD GINZTON, retired chief executive officer of Varian Associates, died on August 13, 1998. He was born on December 27, 1915, in Dnepropetrovsk, Ukraine. He was the son of Leonard Louis and Natalia P. (Philipova) Ginzton. Ed came to the United States in 1929 and attended public school in San Francisco. He received his B.S. in electrical engineering from the University of California in 1936 and an M.S. in 1937; he received his E.E. degree in 1938 and his Ph.D. in 1940 from Stanford University. He married Artemas A.McCann on June 6, 1939, and they had four children: Anne, Leonard, Nancy, and David.

Ed was a research engineer at Sperry Gyroscope Company on Long Island from 1940 to 1946. He was assistant professor of applied physics from 1946 to 1947, associate professor of applied physics from 1947 to 1950, and professor of applied physics from 1951 to 1968, all at Stanford. He was also the director of the Microwave Laboratory at Stanford from 1949 to 1959 and the director of the Stanford University Project M (the SLAC linear accelerator) from 1957 to 1960.

Ed was instrumental in the founding of Varian Associates. He was a director of Varian from 1948 until 1993. He was chairman of the board from 1959 to 1984 and chief executive officer from 1959 to 1972. From 1964 to 1968, he was also president. He was

chairman of the executive committee of the board from 1984 to 1993.

While at Sperry during World War II, Ed was instrumental in furthering the development of klystron tubes, pulse-Doppler radar, and microwave measurements. He had a vision that klystron tubes could be scaled up in power by a factor of 1,000 successfully. Later at Stanford, he continued his work to stimulate development of ever higher power klystrons such as those that power SLAC today. Klystron and other microwave tubes were further encouraged at Varian. The pulse-Doppler techniques initially developed under Ed's direction at Sperry are the predominant features of many sophisticated radars today.

At Stanford's Microwave Laboratory, with Ed's participation and under his direction, linear accelerator concepts and devices were developed and improved. This led to the construction of linear accelerators for particle physics research. The early accelerators—the Mark I, Mark II, and Mark IV—were a few 10s to 100s of feet long. Ed was instrumental in the early stages of Project M, the SLAC accelerator project, an accelerator two miles long, both in stimulating the engineering work required and in getting federal funding. Here again, an enormous scale-up was found to be feasible. The Mark IV accelerator was built to test the concepts for the SLAC design.

Another application of the linear accelerator concept was for the treatment of cancer. The Mark IV was used for early experiments in this application. Ed was a crusader for the use of the accelerator in cancer treatment and although this use took many years to come to fruition, there are some 4,000 machines in use in the world today treating more than one million patients annually. Under Ed's leadership, Varian acquired the predominant market share for this equipment.

Another idea germinated in the early years at Stanford and at Sperry was that of nuclear magnetic resonance, or NMR. Ed supported the continuing development of NMR machines at Varian for many years, and Varian is today the leading manufacturer of such instruments worldwide. Ed also had a vision of building a company with a group of analytical instruments, so over the years mass spectrometers, atomic absorption instruments, gas and

liquid chromatographs, and UV-visible spectrophotometers were added to NMR to make the instrument company of today.

Ed was elected to the National Academy of Engineering in 1965 (and was a member of its Council from 1974 to 1980) and to the National Academy of Sciences in 1966. He was involved in many committees of the Academies, including the National Research Council Division of Engineering Committee on Motor Vehicle Emissions (chair, 1971 to 1972), the Assembly of Engineering Committee on Nuclear and Alternative Energy Systems (cochair), the National Academy of Sciences' Panel on Scientific Communications and National Security, and the joint Institute of Medicine/Commission on Life Sciences Committee on the Use of Animals in Biomedical and Behavioral Research. He was also a member of the National Academy of Sciences Delegation to Hungary (1966), Bulgaria (1972), and the USSR (1973 and 1975). He was a member of the Academy Commission on International Relations, 1977 to 1980.

Ed received many honors. He was a fellow of the Institute of Electrical and Electronics Engineers and was on its board of directors and chairman of its Awards Board. He received the Morris Liebmann Memorial Prize and the Medal of Honor. He received the California Manufacturer of the Year Award in 1977 and was inducted into the Silicon Valley Engineering Hall of Fame in 1995. He was a member of Sigma Xi, Eta Kappa Nu, and Tau Beta Pi.

Ed also served on boards and committees beyond his immediate Varian and Stanford connections. To name a few, he served as a director of the Stanford Bank, chairman of the Advisory Board of the School of Engineering at Stanford, a member of the Stanford University board of trustees, board of directors of Stanford University Hospital, Lawrence Berkeley Laboratory Scientific and Educational Advisory Committee, and board of directors of the National Bureau of Economic Research.

Much of Ed's work at the Microwave Laboratory at Stanford concerned microwave measurement techniques. With this back-ground, he wrote the book *Microwave Measurements* as part of the *International Series of Pure and Applied Physics*, published in 1957. Ed also contributed articles to technical journals. He was the

sole inventor for twenty-two patents and the joint inventor for another seventeen, mostly in the fields of microwave measurements and components.

Ed had wide-ranging interests beyond his professional life. He loved to restore old cars and had a model A Ford, which looked brand new. He was an avid and talented photographer and made many striking pictures, particularly of outdoor scenes—mountains, meadows, flowers, and rivers.

He loved to travel. With various members of his family, he traveled over Africa in a hot air balloon. He attended a banquet in the Saudi Arabian desert, visited Machu Picchu, saw the great pyramids and the Sphinx, visited the Great Wall of China, went through the Grand Canyon, and went around the world stopping in New Zealand and Hawaii.

Ed had strong interests in bettering the community. He championed the causes of fair housing and clean air. With David Packard and later Pief Panofsky, he co-chaired the Stanford Mid-Peninsula Urban Coalition, which helped launch minority-owned small businesses. He worked on related education and health issues and on the need for affordable housing, serving as a member of the board of directors of the Mid-Peninsula Housing Development Corporation.

Ed had a collegial management style. He encouraged us all to work wholeheartedly and independently on what we thought was most important. His concept is expressed in the word “Associates” in the name Varian Associates. Many of the developments mentioned above such as the high-power klystrons, pulse-Doppler radar, linear accelerators for medical research, SLAC, and NMR grew out of intense collaboration with associates such as Bill Hansen, Russell and Sigurd Varian, Marvin Chodorow, Pief Panofsky, John Woodyard, and Myrl Stearns, among others. Ed was truly a man of broad interests and large and persistent vision, who enjoyed life to the fullest and cared about his family, his associates, and his community.

