

1977 MTS MICROWAVE CAREER AWARD
to
John R. Whinnery



John Whinnery was born in western Colorado but moved to California when he was ten. He majored in Engineering at the Modesto Junior College and received his B.S. degree in Electrical Engineering from the University of California, Berkeley. His first job was at the General Electric Company, Schenectady, on the Test Program, and later the Advanced Engineering Program. His first assignment was with W. C. Hahn, who at that time (1939) had velocity modulation tubes producing 100 watts CW at 10 cm. wavelengths. There were lower power tubes operating at 5 cm. wavelengths, some electrically tuneable.

A following assignment was with Simon Ramo, working with microwave magnetrons, and during that assignment Ramo invited him to join in a book he was starting - one that became the well-known "Fields and Waves in Modern Radio" after many drafts and some trial uses at G.E.

During World War II Whinnery worked on microwave disc-seal triodes of the lighthouse class with Ramo, E. D. McArthur, Jim Beggs and others. Using techniques learned from Hahn, he co-authored a series of papers on transmission line and waveguide discontinuities useful in design of discontinuous structures. During

this period he taught in Defense Training classes, and was also a part-time lecturer at Union College.

Following the war, Whinnery returned to Berkeley to complete a doctorate on microwave antenna problems, teaching first as a Lecturer and then as Associate Professor. He developed the undergraduate course in Electromagnetic Fields and Waves, and graduate courses in Microwave Networks and Microwave Electron Tubes. His consulting work at that time was with the Hughes Aircraft Company on phased-array antennas.

In 1952-1953, on a leave from the University, he served as Head of Microwave Tube Research in the Electron Tube Laboratory at Hughes with emphasis on traveling-wave tubes for the Hughes systems applications. His research after returning to the University stressed microwave tubes, where associates and graduate students studied backward-wave amplifiers, beam noise, and re-entrant crossed-field devices. He was also director of the Electronics Research Laboratory and the Chairman of the Electrical Engineering Department during this period. In 1959 he became Dean of the College of Engineering at Berkeley and served in that position until 1963.

Following his assignment as Dean, he again took an industrial leave, this time at the Bell Laboratories, Murray Hill, and had an opportunity to start work on lasers and optical communication problems. His research at Berkeley following that leave reflected these new interests with stress on thermal-lens effects arising from laser beams in lossy materials, transverse mode locking in laser cavities, acousto-optic interactions, and more recently, optical guiding by liquid crystals and curved dielectric surfaces.

Whinnery has been on numerous government advisory committees, principal of which were the Advisory Group on Electron Devices for DoD, the Science and Technology Advisory Committee, advisory to NASA for the Apollo program, the Standing Committee on Controlled Thermonuclear Research of the former AEC, and several advisory committees for the National Science Foundation. He recently completed service on the Telecommunications Committee of NAE-NRC and is a member of the Committee on Science and Public Policy (COSPOP) of NAS.

In addition to the leaves in industry, visiting years were spent at Stanford University and the University of California, Santa Cruz. He has been a member of the Board of Directors of Granger Associates, a manufacturer of microwave radios and antennas, since the beginning of the company. He served in all offices of the San Francisco IRE and was later on its Board of Directors; still later he was on the Board of IEEE, becoming Secretary in 1970.

Prizes and Awards include the IEEE Education Medal (1967), the Lamme Medal of the American Society of Engineering Education (1975), a Guggenheim Fellowship (1959), and a Research Professorship in the Miller Institute for Basic Research in Science (1973). He is a member of the National Academy of Engineering and the National Academy of Sciences.

Hobbies include nontechnical writing, with many unpublished poems and children's stories circulated among friends. His interest in hiking and backpacking started in the Adirondacks and White Mountains during the period at GE but is now carried on in the High Sierra or along the California Coast. He shares with other members of his Department an interest in California wines and tries to keep up with the latest vintages of the Napa, Sonoma and Alexander valleys in that rapidly changing scene. Whinnery is a poor gardener and a worse golfer, but finds both activities fun when there is time for them.