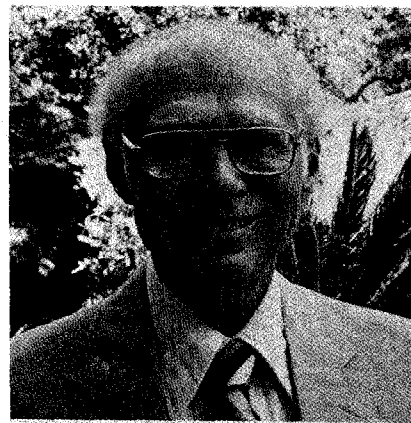


## MICROWAVE CAREER AWARD

### JOHN ROBINSON PIERCE

*The Microwave Career Award* is presented to an individual "for a career of meritorious achievement and outstanding technical contribution in the field of microwave theory and techniques." The 1984 Microwave Career Award has been awarded to Dr. John Robinson Pierce.



John Robinson Pierce was born March 27, 1910 in Des Moines, Iowa. He received the B.S., M.S. and Ph.D. degrees in electrical engineering in 1933, 1934, and 1936, respectively. All degrees were conferred by California Institute of Technology, Pasadena, California.

Dr. Pierce was employed by Bell Telephone Laboratories from 1936 to 1971. He progressed from a Member of the Technical Staff to Director of electronics research (1952–55), and eventually to Executive Director of the research and communications sciences division (1965–1971). From 1971 to 1980, Dr. Pierce was a professor at the California Institute of Technology. From 1979 to 1982, he served as Chief Technologist at the Jet Propulsion Laboratory. As of mid-December, Dr. Pierce has been with the Department of Music at Stanford University.

Dr. Pierce has made major and fundamental contributions to the development of high-frequency electron tubes, particularly traveling wave tubes. He has been granted more than eighty patents for his inventions in electron tubes and communication circuits, especially electron multipliers, electron guns, and microwave tubes. The "Pierce gun," built to design principles laid down by him, is an ubiquitous device in modern electronics.

In 1954, Dr. Pierce analyzed the possibilities of radio relay by way of an artificial satellite and in 1955, two years before the first satellite, offered the first concrete proposals for satellite communications. The Echo I satellite embodied his ideas. He was instrumental in initiating the Echo program and the last coast ground station was constructed in his department. Telstar resulted from satellite work that he initiated.

His career interests, responsibilities, and influence spanned such fields of interest as radio, electronics, acoustics and vision, mathematics, economic analysis, psychology and even computer music. Dr. Pierce has published nearly four hundred papers and articles, a number of science fiction stories, some published under the name of J. J. Coupling.

Some of his published books include: *Theory and Design of Electron Beams* (1949); *Traveling Wave Tubes* (1950); *Electrons, Waves and Messages* (1956); *Symbols, Signals and Noise* (1961); *Electrons and Waves* (1964); *Quantum Electronics* (1966); *Waves and Messages* (1967); *The Beginnings of Satellite Communications* (1968); *Science, Art and Communication* (1968); *Almost All About Waves* (1974); *Introductions to Communication Science and Systems* (1980); *Signals, the Telephone and Beyond* (1981); and *Information Technology and Civilization* (1983).

Dr. Pierce is a Life Fellow of the IEEE, a Fellow of the American Physical Society, a Fellow of the Acoustical Society of America, a member of the American Academy of Arts and Sciences, the American Philosophical Society, the National Academy of Engineering, the National Academy of Sciences and is a foreign member of the Royal Academy of Sciences (Sweden). He is also a member of Tau Beta Pi and Eta Kappa Nu. From 1963 to 1966, he served as a member of the President's Science Advisory Committee. He has been a Trustee of the Aerospace Corporation and of the Battelle Memorial Institute. Dr. Pierce has been granted ten honorary degrees, including a doctor of engineering from the University of Bologna in Italy in 1974.

Dr. Pierce has received a number of honors and prizes during his 46 year career. These include the IRE Morris N. Liebmann Memorial Prize in 1947, the IEEE Edison Medal in 1963 and the IEEE Medal of Honor in 1975. He also received the Stuart Ballentine Medal from the Franklin Institute (1960), the Certificate of Achievement from the American Astronautical Society (1961), the H. H. Arnold Trophy as the Aerospace Man of the Year from the Air Force Association (1962), the Golden Plate Award of the Academy of Achievement (1962) and the General Hoyt S. Vandenberg Trophy from the Arnold Air Society (1963). Dr. Pierce also received the National Medal of Science in 1963, the Valdemar Poulsen Gold Medal from the Danish Academy of Technical Sciences in 1963, the H. T. Cedergren Medal in 1964, and the John Scott Award from the Franklin Institute in 1974. He has also been the recipient of the Marconi Award (silver medal) in 1974, the National Academy of Engineering Founder's Award in 1977, and the Marconi International Fellowship in 1979.