

## MTT-SOCIETY AWARDS



### 2004 Microwave Pioneer Award

#### GERALD F. ROSS

The Microwave Pioneer Award recognizes an individual or a team not exceeding three persons having made outstanding pioneering technical contributions that advance microwave theory and techniques and described in an archival paper published at least 20 years prior to the year of the award. This year's recipient is Gerald F. Ross, whose citation reads: "For pioneering contributions to the theory and development of time-domain electromagnetics and its application to metrology and ultra-wideband radar and communication systems."

**GERALD ROSS** was born in 1930 and educated, primarily, in the New York City area. Early on, he attended Brooklyn Technical High School where at 15 he became the youngest person in the United States to receive a FCC First Class radiotelephone license.

After high school, he attended the City College of New York (CCNY) where he graduated with a BEE degree in 1952. After graduation, he accepted a position as a Research Assistant at the Willow Run Research Center, Ann Arbor, Michigan. He worked at this position for six months, when he agreed to accept a field assignment at the University's Air Force test site in Alamogordo, New Mexico. At this site, he developed the electronics for the nose-on radar cross section of targets in anticipation of the ICBM threat that occurred years later. Shortly thereafter, he was called to active duty where he served as an Electronics Officer in Alamogordo doing the same work.

When released from the Air Force in 1953, he returned to NYC to marry and found an electronics position at the Sperry Gyroscope Company. While working at Sperry he attended night classes at the, then, Polytechnic Institute. He eventually received his MEE (1955) and his Ph.D. (1963) from Brooklyn Polytechnic Institute (now Polytechnic University).

Before receiving his Ph.D. degree, he had asked Professor Athanasios Papoulis to be his dissertation advisor. At that time, Professor Papoulis was writing his now famous book on "The Fourier Integral and its Applications". And Gerald Ross was his only student. After receiving his Ph. D. in June 1963, Gerald Ross continued working in microwave network and antenna design using time domain electromagnetic techniques; this work has continued for another 40 years.

After graduation, he transferred to the Sperry Research Center, Sudbury, where as a Department Manager, he hired a group of 16 very talented engineers that helped him over the period of 1965-1980 to further solve and develop many of the time domain electromagnetic techniques that are still being used today.

In 1980, Dr. Ross formed ANRO Engineering where the work in time domain electromagnetics continues today. Some of the areas developed include metrology, short-range radar, and communication systems known today and referred to by many as Ultra Wideband (UWB) technology. His peers recognize, for example, that his work in time domain metrology was instrumental in the development of the stealth aircraft. Now others are doing this work in the field of tissue research.

Dr. Ross was elected as a University Fellow at Polytechnic University for his contributions to microwaves technology in 1990. He was elected a Member of the National Academy of Engineering for his contributions to UWB technology and time domain metrology in 1995. He has published more than 70 papers in accredited journals and is a contributing author to three texts, and holds 60 patents in the field.

Dr. Ross is currently CEO and Chairman of ANRO Engineering and also Chairman of, AnaLux, Inc, a spin-off company, incorporating both UWB and optical technology.