

MEMORIAL RESOLUTION

GERALD L. PEARSON (1905 – 1987)

Gerald L. Pearson, Professor Emeritus of Electrical Engineering, died on October 25, 1987. He came first to Stanford as a graduate student in physics in 1927. He had an eminent career as a research physicist at the Bell Telephone Laboratories from 1929 until 1960, being a key participant in the research effort which brought the transistor and related semiconductor devices into being. In 1960 he returned to Stanford to undertake a second career as a faculty member in electrical engineering, taking an important role here in the establishment of a solid state electronics program which put Stanford in the forefront of universities in this field. His two careers were remarkably complementary; he brought to both a rare gift as an experimentalist working interactively with theoreticians. His career as a faculty member, started when he was 55, produced 30 Ph.D.s of very high quality and a rare kind of collegueship with faculty members and Ph.D. students to whom interactions with him were professionally enlightening and personally satisfying.

Gerald Pearson was born in Salem, Oregon on March 31, 1905. He attended Willamette University in Salem, obtaining an A.B. in Mathematics and Physics in 1926. After spending a year as a high school teacher he came to Stanford, obtaining his M.A. in Physics in 1929. His Stanford experience, where he had contact with outstanding people including Professor David Webster and Professor George Harrison, launched his scientific career. His classmates included W. W. Hansen, with whom he co-authored his first oral paper for the American Physical Society, and Russell Varian. His research was in X-rays; his thesis was published in the Proceedings of the National Academy of Sciences.

Following Commencement in 1929, he returned to Salem to marry Mildred Cannoy, and the two of them moved to New York where Pearson began his career at the Bell Telephone Laboratories. He worked first on noise, then on temperature-sensitive resistors which played an important role in the telecommunications industry. Pearson obtained 13 patents related to thermistors. His career made an important turn when he joined the Bell Laboratories group doing fundamental research on semiconductor materials. He conceived and carried out an elegant series of experiments on semiconductors which were crucial in identifying physical models of behavior materials, pn junctions and semiconductor devices. His experimental results were absolutely essential to the development of models of semiconductor behavior developed by William Shockley and John Bardeen, models which led to new device and system concepts in an industry just being born. His most well-known invention is the silicon solar battery, which evolved into the power source for satellite communications and space probes. He invented the solar battery jointly with C. Fuller and D. Chapin.

Gerald Pearson was intrigued to begin a new career in the academic arena where his scientific career started. He was invited to spend a year as Visiting Professor in the Stanford Electrical Engineering Department in 1957-8. With approval of his Bell Laboratories Administration, Stanford appointed him Professor of Electrical Engineering in September 1960 and he took early retirement from the Bell Laboratories. Just at that time, Stanford was initiating a semiconductor electronics program with the objective of developing an industry-class

experimental facility and promoting research activity which could only be successful in such a facility. Accordingly, his appointment brought just the experience ingredient needed to enable the kind of program envisioned at Stanford.

The transition from Bell Laboratories to Stanford University was made by Gerald Pearson with flexibility and insight not typical of a man of 55. He promptly developed a team of research students, mastered the task of getting governmental support for his and their research, and established at Stanford the expectations of excellence for work and publication that had long characterized his research at Bell. One of Pearson's Bell colleagues once remarked that when a new facet of solid-state research emerged, he usually found that Pearson had already done a few definitive experiments. This characteristic continued at Stanford where he undertook research on compound semiconductors, setting up the first university program in this area. When he became Emeritus Professor in 1970, his research activity was at full volume. He was recalled to active duty annually through his 79th year.

Gerald Pearson's career was rich with recognition and awards. In 1956 his undergraduate school, Willamette University, conferred on him an honorary doctoral degree. He was elected to membership in both the National Academy of Sciences and the National Academy of Engineering. He was a Fellow of the American Physical Society and the Institute of Electrical and Electronics Engineers as well as a Life Member of the Franklin Institute and the Telephone Pioneers of America. He received the John Scott Medal from the City of Philadelphia, the John Price Wetherill Medal from the Franklin Institute, the Marian Smoluchowski Medal from the Polish Physical Society, the Solid State Science and Technology Medal and Award from the Electrochemical Society, the 1981 GaAs Symposium Award and the Heinrich Welker Medal, and the Alfried Krupp von Bohlen and Halbach Energy Research Prize, 1983.

Gerald's personal life reflected the same commitment to family, colleagues, friends and community that his professional life exhibited to scientific excellence. His wife, Mildred, became an active participant in the Stanford community when he joined the faculty. Their high regard for each other and for their life together was evident to colleagues. The opportunity to travel as an adjunct to professional activity brought keen enjoyment to them and took them to many interesting points over the world. Their children, Ray and Carol, established their careers and families before the move to Stanford. Ray, who obtained his PhD in Chemistry, is a scientist at Oak Ridge National Laboratories. Their daughter, Carol Parlette, in addition to her role as wife and mother of a family, teaches in the elementary schools of Bloomington, Illinois. The Pearsons have 7 grandchildren and 6 great-grandchildren.

Gerald's colleagues and students miss him, but rejoice in a life lived fully and enjoyed. He made an imprint on us and this institution and we are better for it. An endowment fund has been initiated for the Gerald L. Pearson Fellowship in Solid-State Electronics, and award to a student that will remind us always of Gerald's warmth, and his pride in and concern for students.

John G. Linvill (Chair)

James. F. Gibbons

James S. Harris