

DOCUMENTS OF THE GENERAL FACULTY

**REPORT OF THE MEMORIAL RESOLUTION COMMITTEE FOR
ELMER L. HIXSON**

The special committee of the General Faculty to prepare a memorial resolution for Elmer L. Hixson, professor emeritus, electrical and computer engineering, has filed with the secretary of the General Faculty the following report.



Sue Alexander Greninger, Secretary
General Faculty and Faculty Council

**IN MEMORIAM
ELMER L. HIXSON**

Elmer Laverne Hixson was born on September 29, 1924, in Arlington, California, and died in Austin, Texas, on February 10, 2011. An active member in the Department of Electrical and Computer Engineering (ECE), Elmer enjoyed both teaching and research. His special interest was acoustics, and he developed courses, laboratory facilities, and a graduate program in this area. He engaged in a wide variety of research projects with faculty and students, both within the ECE department and in other departments, particularly those in the College of Engineering (now the Cockrell School of Engineering). Elmer became professor emeritus in 1997 and continued to teach and supervise students until shortly before his death. His passing marked the end of an era.

From 1943 to 1946, Elmer served in the United States Navy. In fact, it was the Navy's V-12 program that brought him to the University of Texas, where he was enrolled as a student in electrical engineering (EE). Staying at the University after discharge from the Navy, he completed his B.S.E.E. degree in 1947 and his M.S.E.E. degree in 1948. From 1948 through 1954, Elmer was employed as an electronic scientist at the United States Navy Electronics Laboratory in San Diego, California (now named the Space and Naval Warfare Systems Center). His work included meteorological instrumentation development for tropospheric radio wave propagation studies and balloon and sonic sounding. Elmer also developed a strong interest in acoustics. He became a group leader responsible for the design and development of passive submarine sonar equipment. This work focused on sonar countermeasures receivers and identification methods.

Elmer returned to the University in 1954 as assistant professor of electrical engineering. He completed his Ph.D. (EE) degree in 1960 under Professor Archie Straiton who had a long and distinguished career at the University. Elmer's teaching during this period was in electronics, communications circuits, pulse and digital techniques, and microwave engineering. From 1954 to 1965, he was also a part-time research engineer at UT's Defense Research Laboratory (DRL, now Applied Research Laboratories, or ARL:UT, which is currently the University's largest organized research unit). His work at DRL was in acoustics and included research in the vibrational properties of soils, surface wave propagation, noise reduction in liquid piping systems, and the application of impedance methods to vibration isolation problems.

Elmer was promoted to associate professor in 1962 and to professor in 1971. A particular focus of his teaching was the development of undergraduate laboratory courses. He developed and taught an undergraduate course in engineering design, which has evolved into a senior capstone design course sequence. Transitioning his expertise in acoustics to the classroom, he developed and taught graduate courses in electromechanical transducers and engineering acoustics as well as an undergraduate course in engineering acoustics. During his long and productive career, Elmer Hixson supervised twenty-eight doctoral students and one hundred and eighteen master's degree students, primarily in the areas of specialized analog systems, the application of circuit theory to acoustical problems, acoustical wave propagation in solids and fluids, infrasonics, ultrasonics, acoustical scattering, dynamics of simple structures, and, above all, his special love, electroacoustic transducers.

The acoustics program in the Cockrell School of Engineering today includes faculty members in most of the departments in the school. Elmer was the pioneer who started it all. Around 1960, he established an acoustics

laboratory in EE and began supervising graduate students on topics in acoustics. He began teaching his signature graduate course in transducers in 1962. The demand for acoustics education, particularly from students working at DRL, soon prompted expansion of the program into mechanical engineering (ME). Elmer was responsible for recruiting one of the undersigned, David Blackstock, to the University in 1969, and David eventually took a joint appointment at ARL:UT and mechanical engineering. After Douglas Reynolds, who also had strong interests in acoustics, joined the architectural engineering part of civil engineering in 1971, it became clear that the existing set of courses in acoustics needed reorganizing and expanding. Hixson, Blackstock, and Reynolds developed the current array of seven graduate courses in acoustics in the early 1970s. Cross-listing of these courses in ECE and ME started then and still continues. Because of the interdisciplinary nature of acoustics, the current program attracts graduate students in almost all departments in the Cockrell School of Engineering and also several departments in other colleges of the University. And it all began with Elmer Hixson.

Elmer's ability to collaborate on research with faculty members in other departments is illustrated by the unique experiment he conducted with Tom Griffy (physics) in 1987 to measure ambient acoustical noise in the atmosphere. Using an airplane as the platform for the measurements was out of the question, because the airplane's noise would swamp the atmospheric background noise to be measured. Even a glider would have been unsuitable, because of the wind noise generated around the glider's structure. They decided that a hot air balloon would be ideal. It would even avoid self-generated wind noise because the balloon is carried along by the wind. Although the burner used to heat the air produced noise, it operated only intermittently; the measurements could be made during the quiet periods. Tom agreed to fly the balloon, if Elmer would provide the acoustical instrumentation, and the deal was struck. Tom ascended to ten thousand feet, far higher than most recreational balloon flights, and made measurements both ascending and descending. The experiment, which was reported in the *Journal of the Acoustical Society of America* (1989), generated a lot of popular interest. Many talks about the escapade were presented.

Elmer's research in acoustics is well known. He held three patents and performed important consulting work with twenty-nine companies. He was a fellow of the Acoustical Society of America and the American Society for Engineering Education. He was a founding member of the Institute of Noise Control Engineering and a senior member of the Institute of Electrical and Electronic Engineers. He authored hundreds of journal papers, reports, and conference presentations, plus several book chapters. He was also a registered professional engineer in the State of Texas. He received many honors and awards over the years, often involving his teaching and advising. At its November 2003 national meeting, the Acoustical Society of America honored Elmer with a special session on his contributions to acoustics. The session was filled with papers presented by his former students.

Elmer had a passion for running. He started running at the age of forty with a group of colleagues from the University. Over the years, he ran fourteen marathons, many half-marathons, and the Capitol 10K every year but one since its inception. In 1980, Elmer and a group of UT Austin runners started the "Taco Trot," a ten-mile race on the day before Thanksgiving. This race, which is still held yearly, has been renamed "Elmer's Taco Trot." Until October 2009, he ran between three and six miles almost every weekday at lunchtime. He once described his zeal for running as a way to grow old gracefully. When he was hospitalized in the 1980s for severe pain caused by a slipped disc, his orthopedist advised him to give up running. The doctor was, however, no match for Elmer's determination. Starting very carefully after the hospitalization, Elmer gradually built back his running program and continued it for another twenty plus years.

Elmer was a strong family man. He was devoted to his wife of sixty-five years, Betty, whom he met during his Navy V-12 years at UT Austin and who is a native of Austin. Elmer and Betty had five children; several attended the University. One of their daughters, Irene Roderick, is presently executive assistant in the Department of Art and Art History.

Elmer was very active at St. John's United Methodist Church in Austin. He joined St. John's in 1954, shortly after its founding. He and Betty were official delegates to the Southwest Texas United Methodist Annual Conference for many years. Elmer was a devoted member of the Methodist Men's Group, often cooking pancake breakfasts and dinners. He and Betty did considerable mission work. He was a scout leader and taught Sunday School classes for many years.

Elmer's daughter Irene recalls a conversation she had with her father when he continued to teach for many years after his 1997 retirement. Why did he continue to teach? Elmer's view was that the material passed on to a student by a teacher continues on to another student who in turn passes it on to yet another. A teacher therefore influences students far beyond his or her immediate contact. With such a positive outlook, no wonder Elmer never burned out.

This memorial resolution was prepared by a special committee consisting of Professors Gary Hallock (chair), Francis Bostick, and David Blackstock.

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