



Mechanical Engineering
Academy of Distinguished Alumni

David T. Blackstock, Ph.D.

Honorary Mechanical Engineer, 2014

BS, Physics, The University of Texas at Austin, 1952

MS, Physics, The University of Texas at Austin,
1953

Ph.D., Applied Physics, Harvard University, 1960

*Eugene P. Schoch Professor Emeritus in
Mechanical Engineering*

The University of Texas at Austin

Born in Austin in 1930, even in childhood David Blackstock knew he wanted to attend The University of Texas (at that time without the “at Austin” appendage). He attended Longhorn football games, first in the knothole section, and later as a Boy Scout usher, when Memorial Stadium’s seating capacity was 40,000. During high school, he lived in a house where today the current Mechanical Engineering building stands. He entered the university in 1948, and received BS and MS degrees in physics. Two years (1954-56) in the US Air Force, mostly at Wright-Patterson Air Force Base in Ohio, introduced him to a professional career in acoustics, and a lifetime with Marjorie Goodson Blackstock. After a Ph.D. in Applied Physics at Harvard in 1960, Blackstock spent nine years in Rochester, NY: three at General Dynamics/Electronics and six at the University of Rochester, where he was an associate professor in electrical engineering.

In 1969, he and his family, now with four children, came to Austin, where he spent a year as a visiting associate professor in electrical engineering at UT Austin. The family decided it liked Austin, and the temporary move became permanent. Blackstock became a faculty research scientist at UT’s Applied Research Laboratories, where he established his graduate student research group in nonlinear acoustics, drawing students from the departments of Electrical Engineering, Mechanical Engineering, and Physics. He also began adjunct teaching in the Department of Mechanical Engineering. With Elmer Hixson in Electrical Engineering, and another faculty member in Architectural Engineering, Blackstock expanded the small existing set of acoustics courses in the College of Engineering to

the full-fledged program that exists today. In 1987, Blackstock became a professor in the Department of Mechanical Engineering. Although he retired in 2000, he continued to teach two of the acoustics courses for several years. He is still part-time at Applied Research Laboratories.

Most of Blackstock’s research, which is both theoretical and experimental, has been in physical acoustics, principally nonlinear acoustics (extremely intense sound) and biomedical ultrasound. Among the problems on which he worked are propagation and reflection of intense sound, enhanced absorption due to nonlinear effects, acoustical waves containing shocks, focusing of N waves, parametric array in air, high-intensity aircraft noise propagation, sonic booms, and lithotripsy (use of shock waves to break up kidney stones). He is very proud of the many students to whom he has taught acoustics for over 50 years, particularly his 13 Ph.D. and 23 MS degree students.

He is a Fellow of the Acoustical Society of America (ASA) and served as its president in 1982-83. ASA awarded him its Silver Medal in Physical Acoustics in 1985, its Gold Medal in 1993, and the Rossing Prize in Acoustics Education in 2007. In 1992, he was elected to the National Academy of Engineering. During 1984-93 he was a member of the International Commission on Acoustics, the last three years as chair. He also served on the Organizing Committee for the International Symposia on Nonlinear Acoustics, 1973-99. He was awarded the Per Bruel Gold Medal for Noise Control and Acoustics by ASME in 2015.