



James L. Flanagan, a former Acoustical Society of America (ASA) President, ASA Gold Medal awardee, and recipient of the National Medal of Science, died August 25, 2015 in Warren, New Jersey, at the age of 89. Jim was a true Southern gentleman, a caring and thoughtful colleague, and a supportive mentor

to all who spent time in his laboratory. Jim was known for his grace and style and for treating everyone with whom he interacted in a respectful manner.

For more than half a century, Jim conducted and led research in the area of speech. His work helped to change the ways in which people communicate with each other and with machines.

In the early years of his career, Jim studied basilar membrane motion, building up the knowledge that led to useful engineering models. His pioneering work in psychoacoustics established the communications importance of perceptual difference limens (DLs), including formant frequency, amplitude, bandwidth, and fundamental frequency, for characterizing the perceptibility of speech.

Jim was trained as an engineer, even though his major interest was in speech as produced and perceived by a human. Realizing the potential application of his work to aid in the development of a better model of the human communication process, Jim developed a model that helped analyze the theoretical capacity limits of a “human” communication channel, thereby leading to metrics for measuring attributes of the human channel.

Jim was born on August 26, 1925, and grew up on a cotton farm in the town of Greenwood, Mississippi. Encouraged by dedicated teachers, he was attracted to math and science. Jim received a BS degree in electrical engineering from Mississippi State University in 1948 and then received a graduate assistant position at MIT in the Acoustics Laboratory under Professors Richard Bolt and Leo Beranek (founders of Bolt, Beranek, and Newman) where he worked on a formant coding system that required only one-tenth the bandwidth

of a conventional telephone channel.

After receiving a ScD degree, Jim was hired by AT&T Bell Laboratories and joined a group working on the efficient transmission of speech. Jim’s career then became a series of research projects to understand how to achieve transmission efficiency goals. Jim worked at Bell Laboratories for 33 years, where he formed and managed a group of world class communications experts, retiring in 1990 as Director of the Information Principles Research Laboratory. His publication record includes about 200 archival publications, 2 books, and 50 US patents. He was elected to the National Academy of Engineering and the National Academy of Sciences.

After retirement from Bell Laboratories, Flanagan served for 15 years as Board of Governors Professor and Vice President for Research at Rutgers University. Among his awards during the academic phase of his career was the L. M. Ericsson International Prize in Telecommunications that was presented in Stockholm by the King of Sweden.

Jim retired in 2005 and is survived by his wife, Mildred Bell Flanagan, his three sons, Stephen, James, and Aubrey, and five grandchildren.

#### Articles by James Flanagan

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Flanagan, J. L., and Golden, R. M. (1966). Phase vocoder. *Bell System Technical Journal* 39, 1493-1509.

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