2004 IEEE Jack S. Kilby Signal Processing Medal

"For fundamental contributions to digital filter design and interpolation, especially the Parks-McClellan algorithm."

Thomas W. Parks and James H. McClellan

Working together and individually, Drs. Thomas W. Parks and James H. McClellan have profoundly impacted digital signal processing. In the early 1970s, while Dr. McClellan was a graduate student at Rice University in Houston, Texas, they collaborated to apply the Remez exchange algorithm to the Chebyshev filter design problem and produce the Parks-McClellan algorithm. The resulting program remains the standard for designing linear-phase finite impulse response (FIR) digital filters and is widely used in areas such as communications, signal processing and array design. Dr. McClellan's Ph.D. thesis introduced the McClellan transformation, which simplifies the design of 2-D filters used in image and seismic processing for oil exploration.

In 1986, Dr. Parks joined Cornell University in Ithaca, New York as a professor of electrical engineering, after spending 19 years in this capacity at Rice University. An IEEE Fellow, his previous honors include the IEEE Signal Processing Society's Technical Achievement Award, an IEEE Third Millennium Medal and the Alexander von Humboldt Foundation's Senior Scientist Award. He has served as a Distinguished Lecturer for the IEEE Signal Processing Society. Both he and Dr. McClellan made key contributions to the widely respected textbook "Computer-Based Exercises in Signal Processing: Using MATLAB 5."

Dr. McClellan is the Byers' Professor of Signal Processing at the Georgia Institute of Technology in Atlanta, where he has taught since 1987. He previously held positions at the Massachusetts Institute of Technology in Cambridge, Massachusetts, and Schlumberger Well Services in Austin, Texas. The co-author of award-winning textbooks, he led Georgia Tech in developing an introductory digital signal processing course. An IEEE Fellow and recipient of the IEEE Third Millennium Medal, Dr. McClellan has served as a Distinguished Lecturer for the IEEE Signal Processing Society and was twice named Georgia Tech's ECE Senior Class Outstanding Teacher.

Jack Kilby's innovative work was a monumental precursor to the development of the signal processor and digital signal processing. The medal, established in his honor in 1995, is awarded for outstanding achievements in signal processing.

Sponsored by Texas Instruments, Incorporated, the award consists of a gold medal, bronze replica, certificate and honorarium.