In 1996 Lotfi Zadeh published an important paper that for the first time equated fuzzy logic with *computing with words* (CWW). Words mean different things to different people, and so are uncertain. We, therefore, need a fuzzy set model for a word that has the potential to capture their uncertainties. In this talk I explain that an interval type-2 fuzzy set can be used as a fuzzy set model for a word, because it is characterized by its footprint of uncertainty (FOU), and therefore has the potential to capture word uncertainties.

Two approaches will be described for collecting data about a word from a group of subjects and then mapping that data into a FOU for that word (this is an inverse problem). The *person MF approach*, in which each person provides their FOU for a word, is limited to fuzzy set experts because it requires the subject to be knowledgeable about fuzzy sets. The *interval end-points approach*, in which each person provides the end-points for an interval that they associate with a word on a prescribed-scale is not limited to fuzzy set experts. Both approaches map data collected from subjects into a parsimonious parametric model of a FOU, and illustrate the combining of fuzzy sets and statistics—type-2 fuzzistics.

*Jerry M. Mendel* is Professor of Electrical Engineering at the University of Southern California in Los Angeles. He has published over 470 technical papers and is author and/or editor of eight books, including *Uncertain Rule-based Fuzzy Logic Systems: Introduction and New Directions* (Prentice-Hall, 2001). His present research interests include: type-2 fuzzy logic systems and their applications to a wide range of problems, including target classification smart oil field technology, and computing with words. He is a Life Fellow of the IEEE and a Distinguished Member of the IEEE Control Systems Society. He was President of the IEEE Control Systems Society in 1986, and is presently Chairman of the Fuzzy Systems Technical Committee and an elected member of the Administrative Committee of the IEEE Computational Intelligence Society. Among his awards are the 1983 Best Transactions Paper Award of the IEEE Geoscience and Remote Sensing Society, the 1992 Signal Processing Society Paper Award, the 2002 *Transactions on Fuzzy Systems* Outstanding Paper Award, a 1984 IEEE Centennial Medal, and an IEEE Third Millenium Medal.

When: 1:30 p.m., Wednesday, April 19, 2006
Where: Engineering Building, Room 2409

*ALL ECE GTAs and GRAs MUST ATTEND at THE SEMINAR*