ECE DISTINGUISHED
SEMINAR SERIES

This presentation will cover *real-world applications of biometrics,* technical challenges of biometrics, ethical challenges of biometrics

DATE & TIME

Oct. 31, 2025 | 3:30-5pm

LOCATION

Chickasaw Nation STEM Auditorium
140 Engineering South

MY PATH TO BIOMETRICS

Dr. Delores Etter | Southern Methodist University (SMU)

ABSTRACT

With the power and capabilities of computers today, signal processing is used throughout the engineering and scientific disciplines to analyze data. In this seminar, Dr. Delores M. Etter, Professor Emeritus in Electrical and Computer Engineering at Southern Methodist University (SMU) in Dallas, TX, will share her research in signal processing through applications in adaptive system modeling, to seismic signal processing, to applications in speech processing, and then to iris recognition. Her research at SMU culminated in a multi-year large scale biometric dataset collection that was designed to improve the accuracy and robustness of iris recognition algorithms with a study of stability of the iris over time. Most iris recognition systems are based on matching patterns in the iris - the donut-shaped colored part of the eye - and use an IR (infrared) camera that takes a picture of the eyeball. This collection captured images of each eye across a spectrum that ranged from 400 to 1600 nm. The LED's used in this experiment were certified as eye safe by multiple radiation experts as well as Institutional Review Boards at both SMU and the government sponsor. Images were collected from a subject 16 times over four years. Over 160 iris images were collected per session. The final dataset contained more than 1 million laboratory quality iris images. This presentation, designed to be accessible to a general audience, will cover: real-world applications of biometrics, technical challenges of biometrics, ethical challenges of biometrics.

BIO

Dr. Delores M. Etter retired as Professor Emeritus from Southern Methodist University (SMU) in Dallas Texas, where she held the Texas Instruments Endowed Professorship in Engineering Education. Most of Dr. Etter's career was in academics, with a Visiting Professorship at Stanford University in the Information Systems Laboratory, and tenured faculty positions at the University of New Mexico, the University of Colorado at Boulder, the U.S. Naval Academy, and SMU. In addition she accepted two senior executive positions in the Department of Defense. Both positions were in the Pentagon. One was a three-year position as Deputy Undersecretary of Defense for Science and Technology and the other was a two-year position as the Assistant Secretary of the Navy for Research, Development, and Acquisition. Dr. Etter also wrote a number of textbooks in engineering computing and software development. She is a Fellow of the IEEE, ASEE, and AAAS. She is also a member of the National Academy of Engineering. Dr. Etter will be inducted in OSU's CEAT Hall of Fame and receive the Lohmann Medal in 2025.

CONTACT DR. WEIHUA SHENG
School of Electrical and Computer Engineering
weihua.sheng@okstate.edu | 405-744-7591

ECE COMMUNITY
ENGAGE EMPOWER COMMUNICATE

SCHOOL OF
ELECTRICAL AND COMPUTER ENGINEERING
College of Engineering, Architecture and Technology