

# The School of Electrical and Computer Engineering DISTINGUISHED SEMINAR SERIES 2016

The Distinguished Seminar Series of the School of Electrical and Computer Engineering (ECE) presents the work of internationally recognized researchers. This seminar series is intended to provide an open platform for the faculty and students, to have a dialog with leading researchers in various fields of ECE, and to build-up a dynamic and vibrant culture of research and academic exchange in the ECE department. All seminars are free and open to the public.



**Engineers Help Unravel the Mysteries of the Brain**  
12:30 - 1:30 p.m. Tuesday, October 11 | ATRC 102

**Dr. Scott T. Acton** - Professor of Electrical & Computer Engineering and of Biomedical Engineering, University of Virginia

Professor Acton's laboratory at UVA is called VIVA - Virginia Image and Video Analysis. They specialize in biomedical image analysis problems. The research emphasis of VIVA is video tracking and segmentation. Professor Acton has over 275 publications in the image analysis area including the books Biomedical Image

Analysis: Tracking and Biomedical Image Analysis: Segmentation. Professor Acton has been at the University of Virginia since 2000. Before that time, he was on the faculty at Oklahoma State University (1994-2000). He's worked in industry for AT&T, Motorola and the Mitre Corporation. He is editor-in-chief of the IEEE Transactions on Image Processing.

## Seminar Abstract

This talk highlights the intersection of engineering and neuroscience. The scientific community is attempting to map the structure and connectivity of neurons in organisms such as *Drosophila* – the fruit fly. To accomplish such an atlas, automated image analysis is required and stands as a major roadblock to success. The talk addresses recent progress in the segmentation and tracing of individual neurons. Graph theoretic and diffusion-based methods are discussed along with results. Also, the comparison and matching of neurons is described. This last portion of the research addresses the open question: can we quantify morphological change in neurons?

**Food provided at 12 P.M. - 12:30 P.M.**

**Food reservation can be made at the ES202 front desk one week prior to each seminar.**



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**Inquiries: Dr. Guoliang Fan**

405-744-1547 or [guoliang.fan@okstate.edu](mailto:guoliang.fan@okstate.edu)