DEPARTMENT OF BIOMEDICAL ENGINEERING
SEMINAR SERIES

presents

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University of California at Davis

“Fluorescence Lifetime Imaging in Cardiovascular Applications”

Abstract: This presentation overviews fluorescence lifetime spectroscopy and imaging techniques for label-free in vivo characterization of biological tissues. Fluorescence lifetime measurements provide information about biochemical, functional and structural changes in fluorescent bio-molecular complexes in tissues and cells including structural proteins, enzyme metabolic co-factors, and lipid components. Emphasis is placed on recently developed devices and methods for the characterization and diagnosis of atherosclerotic cardiovascular diseases. This will include a) the adaptation of a scanning multispectral TRFS (ms-TRFS) technique for intravascular assessment of arteries in helical scanning (rotation and pull-back) and b) small-diameter intravascular catheter systems combining intravascular ultrasound (IVUS) with ms-TRFS for assessment of narrow coronary arteries. Studies conducted in human coronary artery specimens (ex-vivo) and swine model (in-vivo) will be presented. Challenges and solutions associated with intravascular applications of fluorescence lifetime techniques will be discussed.

Please join us on

Monday, November 20, 2017
2:00-2:50 pm, Keating Bldg, Room 103
Refreshments served at 1:30pm

Host: Jennifer Barton, Ph.D.
barton@email.Arizona.edu

Persons with a disability may request a reasonable accommodation by contacting the Disability Resource Center at 621-3268 (V/TTY).
Short Bio:
Laura Marcu is a Professor of Biomedical Engineering and Neurological Surgery at University of California at Davis. She received her doctorate degree in biomedical engineering from the University of Southern California in 1998. Prior of joining UC Davis in 2006 she served as the Director of the Biophotonics Research Laboratory at Cedars-Sinai Medical Center and was a Research Associate Professor of Electrical Engineering-Electrophysics and Biomedical Engineering at the University of Southern California. Her research interests include the development of fluorescence-based instrumentation and multimodal imaging systems which enable studies of the molecular, metabolic and morphologic changes in living systems ranging from biological cells and animal models to human patients. She is co-editor of the first textbook on Fluorescence Lifetime Spectroscopy and Imaging: Principles and Applications in Biomedical Diagnostics. Currently she serves as associate editor of the Biomedical Optics Express and is an editorial board member for the Journal of Biophotonics. Dr. Marcu is a fellow of the Optical Society of America (OSA), the International Society of Optical Engineers (SPIE), the Biomedical Engineering Society.