

Listen to the retina: photoacoustic ophthalmoscopy for retinal imaging

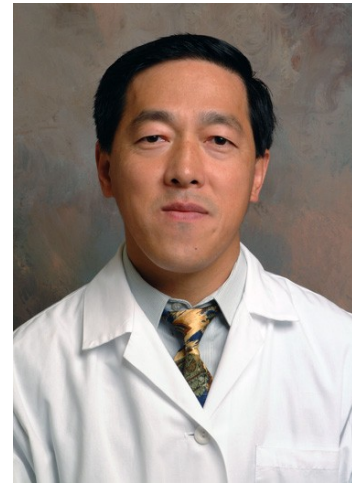
Dr. Shuliang Jiao

**Department of Ophthalmology and
Department of Biomedical Engineering
University of Southern California**

Monday, February 13,th ,2012

LECTURE: 9:00 A.M - 10:00 A.M

**ENGINEERING CENTER
ROOM EC 1107
10555 WEST FLAGLER STREET
MIAMI, FL 33174**



Abstract: Photoacoustic ophthalmoscopy (PAOM) is a new retinal imaging technology based on the photoacoustic effect. PAOM detects the ultrasonic waves induced by pulsed laser light shined onto the retina. PAOM offers the unique capability to measure optical absorption contrast in the retina, which is suitable for imaging retinal vessel oxygenation and the pigmentation of the RPE cells. Since PAOM is compatible with optical coherence tomography, scanning laser ophthalmoscopy, and autofluorescence imaging, registered multimodal images can be acquired from a single device at comparable resolution for comprehensive anatomic and functional retinal characterizations. Therefore, photoacoustic ophthalmoscopy is anticipated to have applications in both research and clinical diagnosis of many blinding diseases. This talk will cover the principles of PAOM, the integration of PAOM with OCT and auto-fluorescence for multimodal imaging, and the integration of adaptive optics in PAOM.

Biography: Shuliang Jiao, PhD, is an associate professor in the Department of Ophthalmology and the Department of Biomedical Engineering at University of Southern California. He received his PhD in Biomedical Engineering from Texas A&M University in 2003. His research interest is bio-optical imaging. His current research focus is optical coherence tomography (OCT) and photoacoustic microscopy with the emphasis of their applications in eye imaging. He is one of the pioneers in Mueller-matrix polarization-sensitive OCT, OCT small animal ocular imaging, and photoacoustic retinal imaging. He also holds four US patents and several US patent applications.

Contact: Claudia.estrada1@fiu.edu; 305-348-6717

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