



BME Seminar Series

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Date: Monday, October 14, 2019

Time: 1:30 pm

Location: Traylor 709, East Baltimore Campus

Faculty Host: Nicholas Durr

Low-cost, Portable Optical Coherence Tomography for Point of Care Use

Abstract: Optical Coherence Tomography (OCT) is a biomedical optical imaging technique that uses low coherence interferometry to resolve backscattered light by depth. It has become a widely used technique for ophthalmology for its unique ability to non-invasively assess the various layers of the retina. However, the high cost of clinical OCT systems (up to \$150,000) has limited access to mostly large eye centers and laboratories. We have chosen to pursue a low-cost OCT system to increase patient access, particularly in low cost settings. To further increase access we have developed a highly portable and robust system, capable of operating at the point of care. This talk will present design and clinical application of low-cost OCT, alongside other advancements that likewise increase utility of this biomedical imaging technology.

Bio: Adam Wax received dual B.S. degrees in 1993, one in electrical engineering from Rensselaer Polytechnic Institute, Troy, NY and one in physics from the State University of New York at Albany, and the Ph.D. degree in physics from Duke University, Durham, NC in 1999. He joined the George R. Harrison Spectroscopy Laboratory at the Massachusetts Institute of Technology, as a postdoctoral fellow of the National Institutes of Health immediately after his doctorate. In 2002, Dr. Wax joined the faculty of the Department of Biomedical Engineering at Duke University. In 2006, Dr. Wax founded Oncoscope, Inc. to commercialize early cancer detection technology developed in his laboratory and Lumedica, Inc. in 2014 to develop low cost OCT systems. He is a fellow of the Optical Society of America, SPIE, and AIMBE and is inventor on 19 US patents. His research interests are in the use of light scattering and interferometry to probe the biophysical properties of cells for both diagnosis of disease and fundamental cell biology studies.