



FIU

FLORIDA INTERNATIONAL UNIVERSITY



BIOMEDICAL ENGINEERING LECTURE SERIES

FRIDAY, AUGUST 17, 2007, 10:30AM

**FIU Engineering Center
10555 West Flagler Street
Room 2300**

NONINVASIVE DEEP FUNCTIONAL AND STRUCTURAL IMAGING OF EMBRYONIC HEART

The overall objective of this research is to develop a novel method for deep functional and structural noninvasive imaging of developing heart and vascular system in wild and mutant mice embryos by using OCT technique combined with recent advances of optical tissue clearing. Developing advanced OCT system capable of structural (SNR exceed 100 dB and in-depth resolution up to 2 μ m) and functional (by analyzing blood flow with Doppler OCT) imaging of the embryos will allow real-time and noninvasive assessment of developing hearts and vascular system in normal and pathological states. Since turbidity of tissues limits standard high-resolution functional optical imaging, application of biologically inert optical clearing agents (such as glucose or glycerol) will effectively open a window into the tissue for more effective imaging and diagnosis of deeper-lying structures. Collaborators: Dr. Dickinson (Baylor College of Medicine), Dr. Wang (OHSU), and Dr. Tuchin (Saratov State University, Russia).

KIRILL V. LARIN



Dr. Larin studied at Saratov State University (Saratov, Russia) M.S. 1995 Laser Physics and Mathematics, Russian Academy of Science (Saratov, Russia) 1993-1997 Biomedical Optics, University of Texas Medical Branch (Galveston) M.S. 2001 Cellular Physiology and Molecular Biophysics, University of Texas Medical Branch (Galveston) Ph.D. 2002 Biomedical Sciences and Biomedical Engineering, University of Texas Medical Branch (Galveston) and University of Texas (Austin) Postdoc 2002-2004 Biomedical Engineering and Optics. In 2006 his Manuscript was featured on the cover of Applied Optics December 20th issue, and in 2007 he received the Office of Naval Research Young Investigator Award.

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