



**Engineering
& Computing**

FLORIDA INTERNATIONAL UNIVERSITY

**Biomedical Engineering
Wallace H. Coulter Foundation
Lecture Series Seminar**

“Intraoperative Optical Coherence Tomography for Image-Guided Surgical Resection and Staging of Breast Cancer”

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**SEMINAR AND CONVERSATION
FRIDAY, FEBRUARY 18, 2011**

**ENGINEERING CENTER
ROOM EC 2300
10555 WEST FLAGLER STREET
MIAMI, FL 33174
LECTURE: 11:00 AM - 12:30 PM**



Abstract: Trends in medical imaging are toward the detection of disease at the cellular and molecular level, where diseases such as cancer originate. In addition, diagnosis of disease should occur at the point-of-care, rather than relying on more traditional methods of excisional tissue biopsy, processing, sectioning, staining, and review in the pathology department. Optical coherence tomography (OCT) is an emerging high-resolution optical biomedical imaging technology that has the potential for real-time intraoperative imaging and surgical guidance during breast cancer surgery. OCT is the optical analogue to ultrasound imaging, detecting reflections of near-infrared light, rather than sound, to acquire cross-sectional images of tissue at resolutions that approach those of standard histopathology. For the application of OCT image-guided breast cancer surgery, clinical studies have demonstrated that OCT can reliably detect and differentiate positive and negative tumor margins during breast lumpectomy procedures. By making this assessment intraoperative and in real-time, there is the potential to decrease the current high reoperation rates for positive margins found post-operatively.

Prof. Boppert graduated from the University of Illinois at Urbana-Champaign in 1990 with a B.S. in Electrical Engineering and an option in Bioengineering. Continuing at UIUC, he completed his M.S. in Electrical Engineering in 1991. Prof. Boppert continued on to receive his Ph.D. in 1998 from MIT in Medical and Electrical Engineering, and his M.D. from Harvard Medical School in 2000. Currently, Prof. Boppert is a full professor with appointments in the Departments of Electrical and Computer Engineering, Bioengineering, and Medicine. He is Head of the Biophotonics Imaging Laboratory at the Beckman Institute for Advanced Science and Technology and along with a team of 20 researchers, is developing novel optical diagnostic imaging technologies for basic science and clinical applications.

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