

*Stephenson School of Biomedical Engineering and COBRE*  
*Present*

**Hyperspectral Imaging for Cancer Detection  
and Image-Guided Surgery**



**Baowei Fei Ph.D.**

Professor of Bioengineering  
University of Texas at Dallas

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Friday, April 7, 2023 | 1:30 p.m.

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Sarkeys Energy Center (SEC)  
Room, M204

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**ABSTRACT**

Hyperspectral imaging (HSI) is an emerging modality for medical applications such as cancer detection & diagnosis, image-guided surgery, and computational & digital pathology. In this talk, various hyperspectral imaging technologies and their medical and biological applications will be presented. The talk will focus on how HSI techniques are developed for cancer detection and image-guided surgery. Promising results from both preclinical and clinical studies will be presented in this talk. Future directions and potential challenges of medical hyperspectral imaging will be discussed. The audience will have an overview of current HSI technology and its specific applications.

**BIO**

Baowei Fei is a Professor of Bioengineering and Cecil H. and Ida Green Chair in Systems Biology Science at the University of Texas at Dallas. He is also a Professor of Radiology at the University of Texas Southwestern Medical Center. He is Director of the Quantitative Bioimaging Laboratory ([www.fei-lab.org](http://www.fei-lab.org)) and Director of the Center for Imaging and Surgical Innovation (CISI). Dr. Fei's research interest includes medical hyperspectral imaging, image-guided surgery, artificial intelligence, and augmented reality for medical applications. He received his master's and PhD degrees from Case Western Reserve University in Cleveland, Ohio. His work on biomedical imaging has been translated to the clinics. He led the NIH-funded, first-in-human clinical trial on PET/ultrasound fusion targeted biopsy of prostate cancer, which improved the detection and diagnosis of prostate cancer. He was recognized as a Distinguished Investigator by the Academy for Radiology & Biomedical Imaging Research and as a Distinguished Scholar by the Georgia Cancer Coalition and the Governor of Georgia. He serves as Conference Chair for the International Conference of SPIE Medical Imaging – Image-Guided Procedures, Robotics Interventions, and Modeling from 2017-2020. He served as the Chair for multiple study section panels at the National Institutes of Health (NIH). He served as an Associate Editor for Medical Physics and as an Editorial Board Member for the Journal of Biomedical Optics and other five journals in the field of biomedical imaging. He published more than 250 referred research articles. Dr. Fei is a Fellow of the International Society for Optics and Photonics (SPIE) and a Fellow of the American Institute for Medical and Biological Engineering (AIMBE).