



Toward Guidance of Surgical Interventions with Optics

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There are a large range of diseases and therapies that can benefit from the information provided by a high-resolution, real time imaging modality. For these conditions, catheters are inserted into the body, without a direct view of the tissue to obtain electrical measurements, take biopsies to detect cellular changes, or delivery energy to perform treatment. My laboratory's goal is to develop optical tools for imaging, which will provide clinicians a detailed view of organs to provide guidance of surgical interventions. We have taken steps toward clinical translation of optical imaging technologies for applications in cardiology and reproductive health. With the development of high resolution and high speed imaging technology, our imaging sessions produce large amounts of data. Within this talk I will discuss our progress to perform optical biopsy by developing automated algorithms for tissue classification and description.

Biography

Dr. Christine P. Hendon was born and raised in he Bronx. Dr. Hendon received the B.S. degree from Massachusetts Institute of Technology in Electrical Engineering and Computer Science in 2004, along with the M.S. and Ph.D. degrees from Case Western Reserve University in Biomedical Engineering in 2007 and 2010 respectively. She completed her postdoctoral fellowship at the Wellman Center for Photomedicine at Massachusetts General Hospital and Harvard Medical School in 2012. Dr. Hendon joined Columbia University as an Assistant Professor in the Department of Electrical Engineering in 2012 where she is the principal investigator of the Structure Function Imaging Laboratory. Her research interests are in biomedical optics and image processing. Her work is currently funded by the National Science Foundation, and she has received recognition for her work from Forbes' 30 under 30 in Science and Healthcare (2012), MIT Technology Review's 35 under 35 Innovators (2013) and the Root 100 (2013).