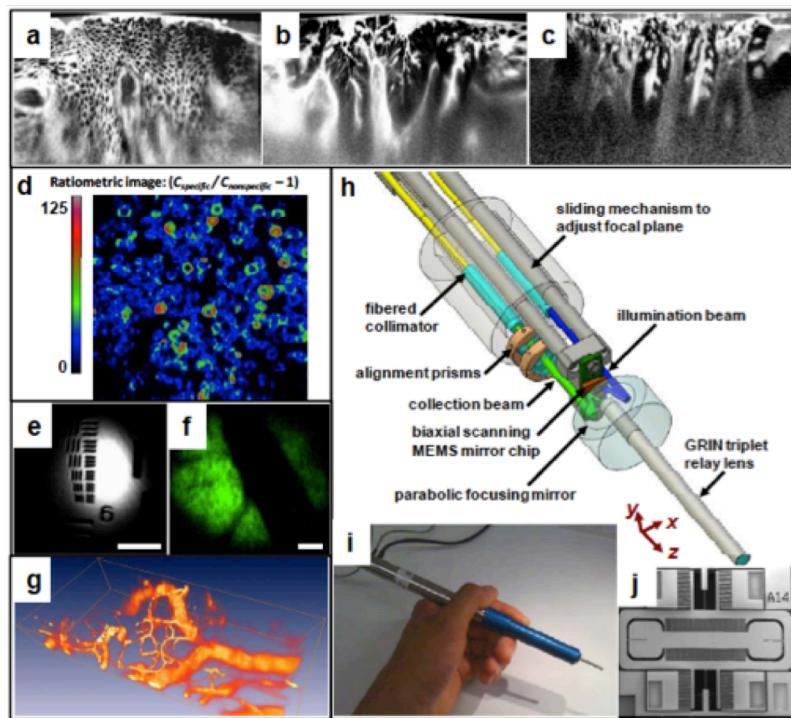


Molecular biophotonics for cancer detection and surgical guidance

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Abstract: The molecular biophotonics lab, directed by Dr. Jonathan Liu, is developing optical strategies for biomedical diagnostics and therapy. These endeavors require multi-disciplinary advances in optical devices, contrast agents, image processing, and preclinical/clinical studies. For example, over the past few years, the lab has developed miniaturized optical-sectioning microscopes and molecularly targeted contrast agents to enable real-time point-of-care pathology. In addition, Dr. Liu's lab is developing spectral imaging devices in conjunction with Raman-coded nanoparticles for the endoscopic visualization of large panels of disease biomarkers. These advances have the potential to revolutionize patient care by enabling early cancer detection and by providing surgical oncologists with intraoperative tools to guide tumor-resection procedures.



Bio: Jonathan Liu was born in Albany, NY and raised in Honolulu, HI, where he attended the Iolani School. Jonathan received degrees in mechanical engineering at Princeton (B.S.E., 1999) and Stanford (M.S., 2000 & Ph.D., 2005). He was a postdoctoral fellow in the department of electrical engineering (Ginzton Labs) and the Molecular Imaging Program at Stanford (2005-2009), and was later appointed as an instructor within the Stanford University School of Medicine (2009-2010). Jonathan was previously an assistant professor in the biomedical engineering department at the State University of New York (SUNY) at Stony Brook (2010-

2014) and is now with the mechanical engineering department at the University of Washington in Seattle. He received an award as the top graduate in mechanical engineering at Princeton, an NSF graduate research fellowship, a Canary Foundation / American Cancer Society postdoctoral fellowship, and a K99/R00 career-development award from the NIH. His laboratory for molecular biophotonics develops optical strategies for improving the diagnosis and treatment of diseases. <http://www.me.washington.edu/liu>