



Center for Biomedical
OCT Research

NORTHEAST

SYMPOSIUM ON BIOMEDICAL OPTICS

NOVEMBER 10TH, 2025

PROGRAM

MIT BUILDING E25
45 CARLETON ST.
CAMBRIDGE, MA





Center for Biomedical
OCT Research

Welcome

It is our pleasure to welcome you to the eighth Northeast Symposium on Biomedical Optics. NESBO is an informal one-day symposium that is run by graduate students and postdocs, for graduate students and postdocs.

Events such as these only work with the participation of those like you, so we would like to thank you in advance for your contributions.

We acknowledge that the biomedical optics community in the northeast is large and diverse. For this year's edition we decided to allocate time for the speakers to give a brief overview of their research centers or institutions. Be prepared to learn about the resources and the opportunities for collaboration that are out there.

Ask questions, meet people, find opportunities and network!



Tianhui (Cindy) Jie
Lia Gomez-Perez
Shreyas Bharadwaj
Po-Yi Lee

Jingchao Fang
Hyun-Sang Park

NESBO 2025 Organizing Committee



Center for Biomedical
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About CBORT

The Center for Biomedical OCT Research and Translation (CBORT) is a National Biomedical Technology Resource Center funded by the National Institute of Biomedical Imaging and Bioengineering (NIBIB). CBORT comprises research groups of the Wellman Center for Photomedicine, which is located at the Massachusetts General Hospital in Boston. The mission of CBORT is to enable breakthroughs in biology and medicine through advancements in optical coherence tomography (OCT) technology. We pioneer technical innovations to improve structural and functional OCT imaging and we provide access to OCT instrumentation to benefit our collaborators' imaging needs. An important aspect of our mission is to establish and cultivate collaborations and offer training to user communities.



National Institute of
Biomedical Imaging
and Bioengineering

CBORT is supported through the National Institute of Biomedical Imaging and Bioengineering (NIBIB) of the National Institutes of Health (NIH) – award P41EB015903.

Visit the CBORT website at www.octresearch.org



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Location



MIT BUILDING E25
45 CARLETON ST.
CAMBRIDGE, MA

NESBO 2025 will be hosted at
MIT Building E25, very close to
Kendall Square Red-line T-station.

Once you arrive to the building
you will see the registration table
in the first-floor lobby.



Program

- 08:30 **Coffee and Registration**
- 08:50 **Introduction**
Prof. Brett E. Bouma, CBORT Director
- 09:00 **Keynote**
Dr. Geoff Vince, Cleveland Clinic Chief of Innovations
& Biomedical Engineering Department Chair
- 9:45 **Session 1: Women's Health**
Discussion Leader: Ginger Schmidt
- 10:45 **Coffee Break**
- 11:00 **Session 2: Cellular Dynamics**
Discussion Leader: Dr. Yong-Chul Yoon
- 12:00 **Lunch**
- 13:00 **Academia, Industry & Entrepreneurship Panel**
Moderator: Dr. Giulia Mansutti
- 14:00 **Session 3: Ophthalmology**
Discussion Leader: Dr. Ryan McAuley
- 15:00 **Coffee Break**
- 15:15 **Session 4: Neuroscience**
Discussion Leader: Maxina Sheft
- 16:15 **Poster Session**
- 17:30 **Concluding Remarks and Poster Awards**
- 18:00 **Social @ Flat Top Johnny's**

Keynote

9:45 – 10:15

Dr. Geoff Vince, Cleveland Clinic
Chief of Innovations
Department Chair of
Biomedical Engineering



D. Geoffrey Vince, PhD, is the Chief of Cleveland Clinic Innovations and Chair of the Department of Biomedical Engineering. He holds The Virginia Lois Kennedy Chair in Biomedical Engineering and Applied Therapeutics.

Dr. Vince earned his PhD in biomedical engineering from the University of Liverpool and joined Cleveland Clinic in 1992 as a Postdoctoral Research Fellow, becoming Associate Staff by 2003. During this time, Dr. Vince co-developed the novel "Virtual Histology™" technology for imaging coronary arteries using intravascular ultrasound, which was patented and licensed to Volcano Therapeutics (now part of Philips). Dr. Vince is an inventor on over 60 patents or patent applications worldwide.

In 2005, Dr. Vince joined Volcano Therapeutics as Director of Research. He was promoted to Vice-President of Clinical and Advanced R&D in 2006. Under his guidance, the Virtual Histology™ technology became a globally recognized product, with approximately 7,000 units deployed worldwide.

In 2011, Dr. Vince returned to chair Cleveland Clinic's Department of Biomedical Engineering. In 2022, he was appointed Executive Director of Innovations, where he focuses on aligning commercialization efforts with research priorities, fostering growth in data and computing sciences, and accelerating healthcare technology and therapy innovations.

Dr. Vince recently served as Principal Investigator for Cleveland Clinic in an NIH Centers for Accelerated Innovations grant, aimed at translating biomedical advances into commercially viable products that enhance patient care and public health.

Dr. Vince's leadership extends beyond his research contributions. For the past five years, he has served on Cleveland Clinic's Board of Governors, playing a crucial role in shaping the institution's mission and vision.

Dr. Vince's work has advanced biomedical engineering while driving economic growth in Northeast Ohio. His leadership in healthcare innovation has earned him recognition on Becker's Healthcare's "Top 35 Hospital and Health System Chief Innovation Officers to Know" list for three consecutive years.

Session 1: Women's Health

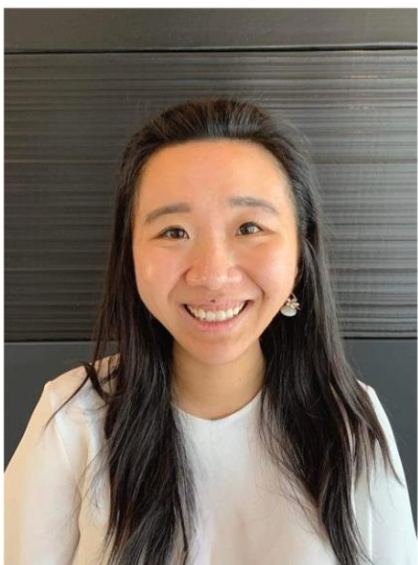
Talk 1: 9:45 – 10:15

*Discussion Leader: Ginger Schmidt
Wellman Center for Photomedicine*

Mueller-Matrix Imaging for Cervical Diagnosis

JunZhu Pei, Florida International University

Polarization imaging offers a label-free approach to probe tissue microstructure, with collagen birefringence serving as a sensitive marker of cervical remodeling. Cervical softening and ripening are characterized by progressive disorganization of the collagen network, altered crosslinking, and changes in hydration, hallmarks that preceded both term and preterm birth. Conventional diagnostic methods such as ultrasound measurement of cervical length provide limited predictive power, as they do not capture the underlying microstructural changes that drive mechanical failure of the cervix. Here, we present a method that leverages Mueller-matrix polarization imaging to quantitatively assess cervical collagen direction, dispersion, and depolarization during pregnancy. Applied to murine and human cervical tissues, polarization imaging reveals representative signatures of distinct stages of remodeling during labor. These findings greatly expand opportunities for translation of polarization imaging into obstetric care and for the development of early interventions to prevent preterm birth.



JunZhu Pei is currently a PhD candidate in Biomedical Engineering at FIU. Currently, she is a recipient of the NSF PATHS-UP Fellowship. Under the guidance of Dr. Jessica Ramella Roman. She is working to implement polarized light imaging modalities to explore the cervix during preterm labor via mouse models. She holds a Bachelor of Science degree in Biology from the University of North Carolina at Chapel Hill. Her background allows her to have an enhanced understanding of the pathologies and cellular tissue characteristics that are vital for the interpretation of the imaging data under analysis.

Session 1: Women's Health

Talk 2: 10:15-10:45

*Discussion Leader: Ginger Schmidt
Wellman Center for Photomedicine*

Illuminating the Future of Breast Imaging: From High-Density Systems to Intelligent Reconstructions

Dr. Miguel Mireles, *Massachusetts General Hospital Martinos Center for Biomedical Imaging*

Optical breast imaging has emerged as a complementary technique to traditional x-ray screening methods due to its ability to provide functional assessment of breast tissues that enhances cancer detection, reduces unnecessary biopsies, and improves patient well-being. Nevertheless, small tumor identification and classification remain challenging tasks. In this talk, I will introduce recent advances in optical breast tomography leveraging multi-modal, high-density systems with novel data processing techniques, optical phantom fabrication methods, and state-of-the-art machine learning approaches toward developing a high-performance breast imaging system capable of fast, high-quality reconstructions.



Miguel Mireles obtained his PhD at The Institute of Photonic Sciences – ICFO in Barcelona, Spain and is currently a postdoctoral researcher at the Athinoula A. Martinos Center for Biomedical Imaging within the Massachusetts General Hospital (MGH) and Harvard Medical School. He has extensive experience in breast optical tomography applications ranging from the use of multimodal, high-density imaging systems to the development of advanced data processing methods for generating high-resolution images in clinical breast cancer screening.

Session 2: Cellular Dynamics

Talk 3: 11:00 – 11:30

*Discussion Leader: Dr. Yong-Chul Yoon
Wellman Center for Photomedicine*

Reflection-mode diffraction tomography

Dr. Tongyu Li, *Boston University*

We introduce a reflection-mode diffraction tomography technique that enables simultaneous recovery of forward and backward scattering information for high-resolution 3D refractive index reconstruction. Our technique works by imaging a sample on a highly reflective substrate and employing a multiple-scattering model and reconstruction algorithm. It combines the modified Born series as the forward model, Bloch and perfect electric conductor boundary conditions to handle oblique incidence and substrate reflections, and the adjoint method for efficient gradient computation in solving the inverse-scattering problem. Forward scattering captures smooth axial features, while backward scattering reveals complementary interfacial details. This technique holds promise for applications in semiconductor metrology and biomedical imaging.



Tongyu Li is a postdoctoral scholar at Boston University in the Computational Imaging Systems Lab, associated with Prof. Lei Tian. He received his Ph.D. in Physics from Fudan University, Shanghai, China. His research focuses on advancing computational imaging algorithms and physical models to develop novel imaging techniques beyond the limits of conventional microscopy.

Session 2: Cellular Dynamics

Talk 4: 11:30 – 12:00

*Discussion Leader: Dr. Yong-Chul Yoon
Wellman Center for Photomedicine*

Deep and isotropic metabolic microscopy for cellular dynamics in living tissues

Kunzan Liu, Massachusetts Institute of Technology

The ability to capture metabolic dynamics in living, intact biosystems underpins key advances in both fundamental biomedical research and clinical pathology. Understanding how metabolism is dynamically regulated in space and time remains a challenge in biology and medicine. This talk will introduce the optical and computational advances enabling deep, dynamic, and isotropic-resolution structural and metabolic imaging. The approach has been benchmarked and validated across diverse systems, including live cells, tissues, and organoids. Applications will be highlighted that reveal metabolic activity across the scales of intracellular organelles, cellular heterogeneities, and multicellular interactions. The molecular interpretations of these findings and their broader implications for human health and disease will also be discussed.



Kunzan Liu is a fourth-year graduate student in the Department of Electrical Engineering and Computer Science at MIT, working in the Computational Biophotonics Laboratory advised by Prof. Sixian You. His research focuses on developing optical and computational methods in metabolic microscopy to understand multicellular dynamics across scales. He is the recipient of the MIT Presidential Fellowship, the MathWorks Fellowship, and the MIT HEALS Fellowship. He received his M.S. degree from MIT in 2024 and his B.E. degree from Tsinghua University in 2022.

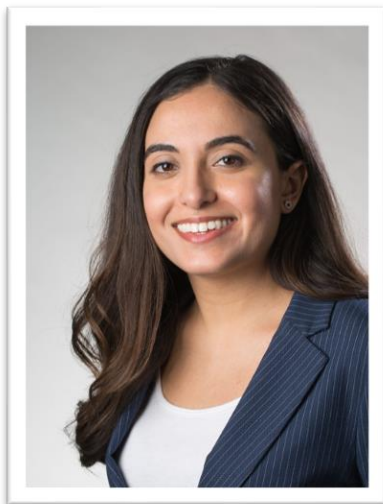
Academia, Industry & Entrepreneurship Panel

Panel discussion: 13:00 – 14:00



Dr. Giulia Mansutti, Moderator
Wellman Center for Photomedicine

Giulia Mansutti is a Postdoctoral Research Fellow at Harvard Medical School and Massachusetts General Hospital. She completed her Ph.D. in Telecommunications Engineering at the University of Padova (Padova, Italy). Giulia joined the Wellman Center for Photomedicine in March 2021, and her research mainly focuses on laser speckle imaging.



Dr. Diana Mojahed, Entrepreneurship Panelist
Lightfinder, Founder & CEO

Dr. Diana Mojahed is the Founder and CEO of Lightfinder, an MIT spinout focusing on developing advanced chip-based spectroscopy and imaging technologies. Formerly a Postdoctoral Fellow in Professor Juejun (JJ) Hu's lab at MIT's Department of Materials Science and Engineering, she combines cutting-edge research with entrepreneurial vision to push the boundaries of optical technology. She earned her Ph.D. in Biomedical Engineering from Columbia University, where she developed novel optical coherence tomography (OCT) imaging solutions for diagnostic applications. Her research has been supported by the U.S. National Science Foundation (NSF), National Institutes of Health (NIH), the MIT Kavanaugh Fellowship, and Columbia's BiomedX Technology Accelerator Program.



Dr. Ethan LaRochelle, Entrepreneurship Panelist
QUEL Imaging, Co-Founder & CEO

Ethan LaRochelle is the co-founder and CEO of QUEL Imaging, which is building an ecosystem of tools and services to accelerate and standardize methods for clinical translation of in vivo optical sensing technologies. Ethan received his PhD in 2020 from the Thayer School of Engineering at Dartmouth College where he studied applications of luminescence for the diagnosis and treatment of cancer. He is a 2017 recipient of the National Science Foundation GRFP Fellowship and has served as principal investigator on multiple NIH SBIR awards.

Academia, Industry & Entrepreneurship Panel

Panel discussion: 13:00 – 14:00

Prof. Zeinab Hajjarian, Academia Panelist *UMass Lowell, BME Assistant Professor*

Zeinab Hajjarian is an Assistant Professor of Biomedical Engineering at the University of Massachusetts, Lowell. She received her Ph.D. in Electrical Engineering from Pennsylvania State University. Her doctoral work focused on modeling light propagation through atmospheres to enable optical telecommunications and imaging.

Dr. Hajjarian transitioned to biomedical optics in 2010, by pursuing postdoctoral training at the Wellman Center for Photomedicine, Massachusetts General Hospital/Harvard Medical School, where she later served as an instructor. Her lab develops and translates laser speckle techniques to quantify tissue microstructure and mechanics. This includes laser speckle rheological microscopy (SHEAR) for mapping frequency-dependent viscoelasticity of the tissue microenvironment and the Laser Speckle PARTicle SizEr (SPARSE) for estimating particle/granularity size distributions of biofluids and soft tissues. Her goal is to exploit these tools to characterize the biophysical and optical properties of tissues across applications in cardiovascular disease, hematological disorders, and cancer.



Prof. Sixian You, Academia Panelist *MIT, EECS Assistant Professor*

Sixian You is the Alfred Henry and Jean Morrison Hayes Career Development Assistant Professor in the MIT EECS department, and a Principal Investigator in the MIT Research Laboratory of Electronics. Sixian did her Ph.D. at UIUC (2019), obtained B.S. from HUST (2013), and did post-graduate training at Apple (2020) and UC Berkeley (2021). Her research interests are in biophotonics and microscopy, with an emphasis on developing hardware and algorithms to overcome longstanding imaging limitations for biomedical translation. She has been the recipient of NSF CAREER Award, SCIALOG (Advancing Bioimaging) Award, Amazon Research Award, Microscopy Innovation Award, McGinnis Medical Innovation Graduate Inaugural Fellowship, Computational Science and Engineering Fellowship (UIUC), and Nikon Photomicrography Competition Image of Distinction award. Her work has been featured on the Cancer Research Cover, PNAS Cover, and Nature Communications Editors' Highlight.



Academia, Industry & Entrepreneurship Panel

Panel discussion: 13:00 – 14:00



Stephen Mariano, Industry Panelist
FujiFilm Endoscopy, Global Vice President

Stephen Mariano, Vice President of Global Endosurgical R&D at FUJIFILM Healthcare Americas Corporation, has over 20 years of experience in medical device research, development, and regulatory navigation. Since leading Fujifilm's entry into the endosurgical space in 2017, he has driven groundbreaking innovations such as the FDA-designated Breakthrough Device ELUXEO® VISION, the only system enabling direct visualization of tissue oxygenation, and TRACMOTION, a retraction device designed to simplify endoscopic submucosal dissection procedures. A strong advocate of voice of customer (VOC) and design for manufacturing (DFM), Mariano has advanced biomechanical R&D while ensuring patient-focused innovation. He holds both a BSc in Mechanical Engineering and an MSc in Material Science and Engineering from Worcester Polytechnic Institute and previously spent over a decade at Lake Region Medical, the world's largest medical device CDMO at the time, now part of Integer Holding Corporation.



Prof. Giovanni Ughi, Industry / Academia Panelist
Gentuity & Spryte Medical, Senior Director
UMass Medical School, Assistant Professor

Dr. Ughi is the Senior Director of Advanced Development and Engineering at Spryte Medical Inc., based in Bedford, MA. He also serves as an Affiliate Assistant Professor in the Department of Radiology at the University of Massachusetts Medical School and as Sr. Medical Director of Gentuity LLC in Sudbury, MA. He has over 15 years of experience in the development of medical imaging technologies and image processing software, with a primary focus on vascular diseases and endoscopic optical coherence tomography (OCT). He has authored more than 50 papers in peer-reviewed international journals. Dr. Ughi earned his Ph.D. in Biomedical Sciences and Engineering from KU Leuven, Belgium, and completed his postdoctoral training at Harvard Medical School, conducting research at Massachusetts General Hospital. He received his Master's and Bachelor's degrees in Biomedical Engineering from the University of Padua, Italy. His research achievements include the development and clinical translation of multi-modality intracoronary OCT, the design of a next-generation, miniaturized intracoronary OCT device, and the creation of the first high-resolution OCT imaging device dedicated to the human neurovasculature.

Session 3: Ophthalmology

Talk 5: 14:00-14:30

*Discussion Leader: Dr. Ryan McAuley
Wellman Center for Photomedicine*

Nanoparticle-based retinal prosthesis for minimally invasive vision restoration

Dr. Jiarui Nie, National Eye Institute

Nanoparticle-enabled retinal prostheses provide a minimally invasive strategy for restoring vision, avoiding the limitations of electrode implants and genetic modification. Gold nanorods tuned to near-infrared (NIR) wavelengths allow targeted photothermal stimulation of retinal neurons while preserving residual tissue function. We report that intravitreally delivered, antibody-conjugated nanorods distribute across multiple retinal layers and can be stimulated with patterned NIR projection to activate bipolar cells and generate cortical responses in animal models. This method achieves precise spatial locality, reproducible neuronal activation, and long-term stability without significant toxicity. By eliminating the need for surgical implantation, nanoparticle-based prostheses offer a scalable and customizable platform for vision restoration. In addition to enabling functional restoration, this approach can be paired with advanced ophthalmic imaging modalities such as OCT, providing opportunities to noninvasively monitor treatment dynamics and support future clinical translation.



Jiarui Nie, PhD, is a Postdoctoral Fellow at the National Eye Institute, NIH. She earned her PhD in Biomedical Engineering from Brown University, where she developed nanoparticle-based retinal prostheses under the guidance of Prof. Jonghwan Lee. Her research focuses on minimally invasive neurotechnologies for vision restoration, neuroprotection, and neural regeneration. By integrating nanotechnology, neurobiology, and optical stimulation, Dr. Nie aims to advance customizable retinal prosthetics and novel therapeutic strategies for eye diseases.

Session 3: Ophthalmology

Talk 6: 14:30-15:00

*Discussion Leader: Dr. Ryan McAuley
Wellman Center for Photomedicine*

Sensorless adaptive-optics in optical coherence tomography for studying the inner retina

Sebastián Ruiz-Lopera, *Massachusetts General Hospital Wellman Center for Photomedicine*

Adaptive-optics optical coherence tomography (AO-OCT) offers the potential to visualize cellular-scale retinal structures; however, its adoption both at research and clinical levels has been restricted by hardware and software complexity, as well as system footprint. Studying the retina at the cellular level offers the potential to investigate the onset and progression of neurodegenerative diseases that affect the retina as an extension of the central nervous system. We developed an AO-OCT system with a new approach for wavefront sensorless AO-OCT that provides high-resolution images of the inner retina. In this presentation I will share findings from an ongoing study in Alzheimer's disease rodent models from multi-contrast AO-OCT imaging of the retina.



Sebastián Ruiz-Lopera is a fourth-year PhD student in the Electrical Engineering and Computer Science program at MIT. He received his Bachelor's degree in Engineering Physics and Master's degree in Applied Physics from EAFIT University (Colombia). He is currently focused on developing an adaptive-optics OCT system together with post-processing techniques for improving image quality and contrast in structural and functional OCT.

Session 4: Neuroscience

Talk 7: 15:15-15:45

*Discussion Leader: Maxina Sheft
Wellman Center for Photomedicine*

Virus-driven metabolic dynamics captured by label-free imaging in a 3D human brain tissue model

Maria G. Savvidou, *Tufts University*

Herpes simplex virus type 1 (HSV-1) has been increasingly linked to neurodegeneration, yet how it disrupts neuronal metabolism remains unclear. To address this gap, we utilized a well-established three-dimensional human neuronal tissue model to monitor the metabolic impact of low-grade HSV-1 infection over ten days. Using non-invasive, label-free two-photon metabolic imaging alongside lactate assays, we tracked dynamic shifts in neuronal bioenergetics. Our results show that neurons progressively transition to a lactate-driven metabolic state. This adaptation coincides with increased oxidative stress and mitochondrial dysfunction, suggesting lactate serves as a driver - not just a byproduct - of virus-induced metabolic reprogramming. These findings provide new insight into how persistent HSV-1 infection can fuel neuronal vulnerability and highlight the value of label-free imaging for capturing early, dynamic metabolic dysfunction in the context of viral infection.



Maria Savvidou is the Deputy Director of the Tufts Advanced Microscopic Imaging Center (TAMIC), where she supports interdisciplinary research with Tufts and external users. She earned her PhD in Chemical Engineering from the National Technical University of Athens, Greece, and completed a postdoctoral fellowship in the Department of Biomedical Engineering at Tufts University in Dr. Georgakoudi's lab. Dr. Savvidou is a multidisciplinary researcher with expertise in metabolic imaging, tissue-engineered disease models, neurobiology, biotechnology, nanomaterials, cell biology and bioengineering. Her current research in Dr. Kaplan's lab focuses on therapeutic approaches for Alzheimer-associated 3D human brain tissue models, and she also serves as a part-time lecturer at Tufts University and Tufts Medical School.

Session 4: Neuroscience

Talk 8: 15:45-16:15

*Discussion Leader: Maxina Sheft
Wellman Center for Photomedicine*

A flexible fiber bundle fluorescence endoscopy platform for neuroimaging applications in vivo

Taylor Cannon, Massachusetts Institute of Technology

Optical imaging is an attractive modality for studying the nervous system due to its high resolution and high-speed monitoring capabilities for detailed and dynamic monitoring in preclinical animal models. There is increasing interest in capturing these signals at peripheral sites including the enteric nervous system (ENS), which innervates the gastrointestinal (GI) tract and communicates bidirectionally with the brain. Endoscopes permit optical access to deep brain sites or the ENS; however, introducing foreign probes elicits an inflammatory response that disrupts local activity acutely and mitigates recording longitudinally, particularly in delicate GI tissues. To minimize this perturbation and maximize functionality, we have developed endoscopic imaging devices based on flexible multi-core polymer optical fiber bundles that are softer than silica-based alternatives and may incorporate elements including electrodes or microfluidic channels to provide opportunities to observe stimulated responses. Our fiber bundle endoscope devices uniquely enable multi-site deep brain imaging and visualization of colonic neural activity in mice, which inform our understanding of the interactions between stress, reward, and inflammation.



Taylor is a postdoctoral fellow in the MIT Bioelectronics Group and incoming assistant professor at the University of Minnesota. Previously, she completed her doctoral training at the Wellman Center for Photomedicine through the Harvard-MIT Health Sciences and Technology program. Her research focuses on developing endoscopic optical imaging systems to capture neural signaling in the central and peripheral nervous systems and functional alterations in the context of disease.

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Single shot, 3-photon fluorescence lifetime imaging for deep and fast metabolic microscopy

Jack Tomkiewicz, *MIT*

P02

Volumetric imaging of live biological systems via an ultrafast self-localized pencil beam

Honghao Cao, *MIT*

P03

Confocal Imaging Polarimetry in Thick Turbid Media

Ajmal Ajmal, *Florida International University*

P04

Aligning STARmap Images for More Accurate Gene Expression Mapping in Tissue Slices

Sumin Kang, *Massachusetts General Hospital*

P05

Recent Developments in Super-Resolution Fluorescence Lifetime Imaging: Toward Versatile Implementation

Dr. Iván Coto Hernández, *Massachusetts General Hospital & Harvard Medical School*

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Differentiable physics-based optimization for estimating optical attenuation coefficients in atherosclerotic tissue imaged with IV-OCT

Ajay Manicka, *MIT*

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Fast Mueller Matrix Decomposition Using Physics-Informed Algorithms for Intraoperative Neurosurgery

Sooyong Chae, *École Polytechnique*

P08

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Dr. Einstein Gnanatheepam, *Tufts University*

P09

Dual function antibody conjugate for fluorescence guided surgery and adjuvant treatment of oral cancer

Derek Allen, *Massachusetts General Hospital Wellman Center for Photomedicine*

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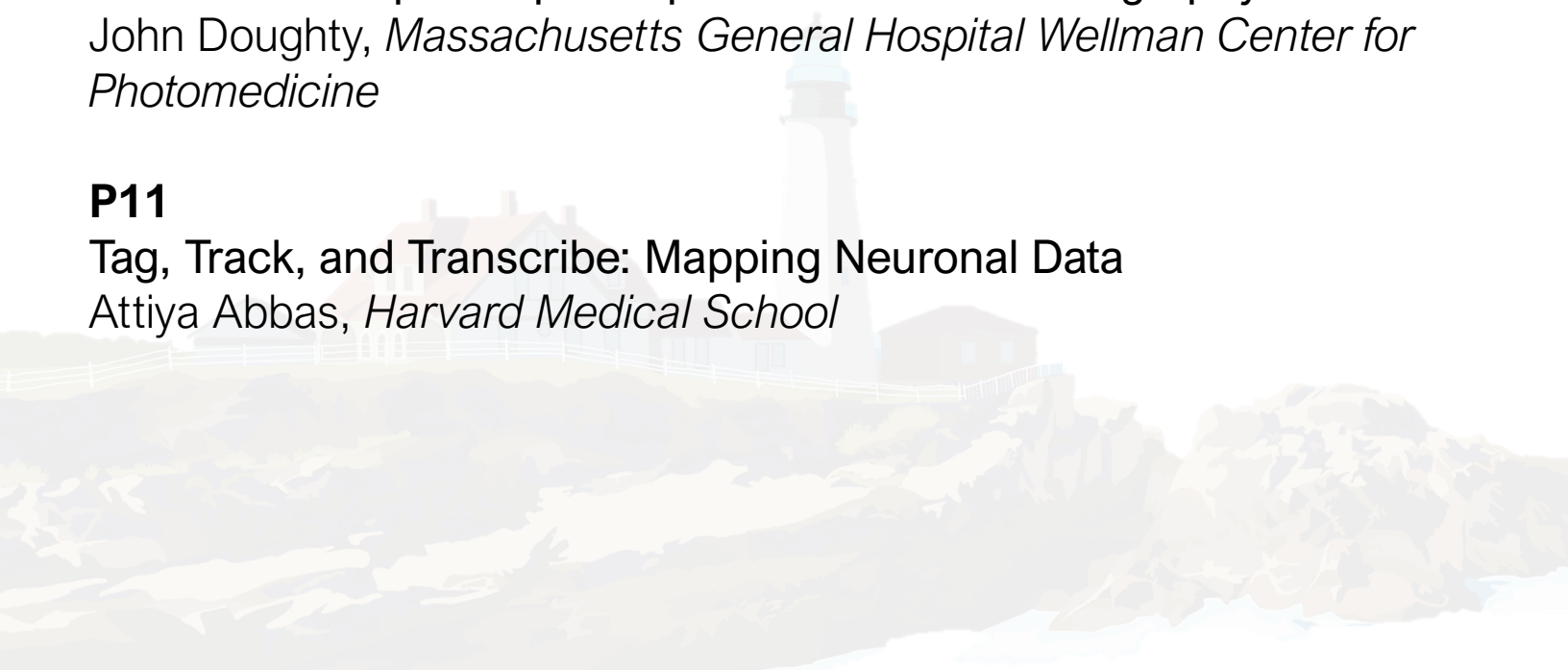
Despeckling via rapid sub-B-scan registration in wavefront-sensorless adaptive-optics optical coherence tomography

John Doughty, *Massachusetts General Hospital Wellman Center for Photomedicine*

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Attiya Abbas, *Harvard Medical School*



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Mehrnoosh Emamifar, *Northeastern University*

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Hang Nguyen, *Dartmouth College*

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High-speed microscopy for optical pooled screening with cellular dynamics

Kevin Bishop, *Broad Institute*

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Wisse Haakma, *Dartmouth College*

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Anette Paulina De Leon Barba, *Massachusetts General Hospital Wellman Center for Photomedicine*

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Tethered DiFC for Circulating Tumor Cell Detection and Clearance in Awake, Freely-Moving Mice

Jane Lee, *Northeastern University*

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Blind Phase Retrieval with SVD in Full-Field OCT Reconstruction

Nigel Norman, *Massachusetts General Hospital Wellman Center for Photomedicine*

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Calvin Smith, *Massachusetts General Hospital Wellman Center for Photomedicine*

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Kristiana Ramos, *Northeastern University*

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Hemodynamic response to visual stimulation measured with dual-slope frequency-domain functional near-infrared spectroscopy (DS-FD-fNIRS)

Jodee Frias, *Tufts University*

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Microfluidic Imaging Platform for 3D Ovarian Tumor–Immune Models and Photoimmunotherapy-Primed Immune Response Analysis

Nicholas Otero, *Northeastern University*

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Paired Agent Imaging for clinical applications in Head and Neck Cancer

Sanjana Pannem, *Dartmouth College*

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Hemodynamic response to visual stimulation measured with dual-slope frequency-domain functional near-infrared spectroscopy (DS-FD-fNIRS)

Sara Rochdi, *Tufts University*

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with OCE

Huda Abdelghani, *MIT*



