Monday, May 9, 2022:

Cornelia Clapp Auditorium, Lillie Building, MBL

08:00 – 08:45 Registration

08:40 – 09:00 Welcoming Remarks
Gary Laevsky, Princeton University
Abhishek Kumar, Marine Biological Laboratory

09:00 – 09:30 “Optical Sectioning and basic fluorescence microscopy”
Michelle Itano, University of North Carolina Chapel Hill

09:30 – 10:00 “Anatomy of a lightsheet microscope”
Sara Cole, University of Notre Dame

10:00 – 10:30 Coffee Break

10:30 – 11:00 “Choosing cameras for purpose, Cost vs function vs speed”
Simon Watkins, University of Pittsburgh

11:00 – 11:30 “Practical aspects of objective lens design” (Virtual)
Steven Ross, Nikon USA

11:30 – 12:00 “Considerations for lightsheet image processing and analysis”
Holly Gibbs, Texas A&M University

12:00 – 13:00 Lunch
Monday, May 9, 2022:

Cornelia Clapp Auditorium, Lillie Building, MBL

13:00 – 13:30  Welcoming Remarks
Gary Laevsky, Princeton University
Anne Sylvester, Marine Biological Laboratory

13:30 – 14:30  “Optical Tools for Analyzing and Repairing Biological Systems”
Ed Boyden, MIT (Virtual)

14:30 – 15:30  “Hyperspectral light sheet microscopy for 5D imaging of living tissues”
David Piston, Washington University St. Louis

15:30 – 16:00  Coffee Break

16:00 – 17:00  “Multiplexed and scalable cellular phenotyping toward the standardized three-dimensional human neuropathology”
Tatsuya Murakami, The Rockefeller University

17:00 – 18:00  “Doing science with light sheet microscopy - in the lab and in the classroom”
Pavel Tomancak, Max Planck Institute of Molecular Cell Biology and Genetics (Virtual)

18:30 – 21:00  Conference Reception Dinner, Swope Lower Terrace
Tuesday, May 10, 2022:

Cornelia Clapp Auditorium, Lillie Building, MBL

09:00 – 10:00  “Component dynamics and realistic force balance allow particle-based simulations to recapitulate in vivo actomyosin ring kinetics”  
Amy Shaub-Maddox, University of North Carolina Chapel Hill (Virtual)

10:00 – 11:00  “3D Microscopy for Quantitative Analysis of Microcarrier-Based Stem Cell Cultures”  
Kristen Maitland, Texas A&M University

11:00 – 11:30  Coffee Break

11:30 – 12:30  “Can it fit? Tips and tricks to bring you sample into the light...sheet.”  
Emmanuel Reynaud, University College Dublin

12:30 – 13:30  Lunch

13:30 – 14:30  “High-Resolution Oblique Plane Microscopy”  
Kevin Dean, U T Southwestern

14:30 – 15:30  “Adaptive optics for high-resolution microscopy”  
Na Ji, University of California Berkeley (Virtual)

15:30 – 16:00  Coffee Break
16:00 – 16:40 Federal Grant Opportunities for Instrumentation

“National Institute of General Medical Sciences (NIGMS) Technology Development Program”
Alvin T. Yeh, National Institutes of Health (Virtual)

“Support for Light-sheet Researchers at the National Science Foundation”
Steven Ellis, National Science Foundation (Virtual)

16:40 – 18:20 Early Career Session

“Using light-sheet microscopy to study motor sequence generation in Drosophila”
Amicia Elliot, National Institutes of Health

“Multimodal Optical Scope with Adaptive Imaging Correction (MOSAIC)”
Tian-Ming Fu, Princeton University

“Non-canonical neuromodulation of the cerebellar cortex”
Stephanie Rudolph, Albert Einstein College of Medicine

“Cell division and developmental decisions in a changing world”
Zak Swartz, MIT

“Mollusc-inspired multi-immersion microscope objectives”
Fabian F. Voigt, Harvard University

18:30 – 19:30 Dinner, Swope Lower Terrace
19:30 – 21:00  Happy Hour and Vendor Talk, Swope Lower Terrace

Mizar Imaging Inc.
Intelligent Imaging Innovations (3I)
Lifecanvas Technologies
TCI America
Scientific Volume Imaging (SVI)
Arivis
Imaris, Oxford Instruments

21:00 – 22:00  Core Facility Managers Discussion (Optional)

Moderator: Gary Laevsky and Louis Kerr

Wednesday, May 11, 2022:

Cornelia Clapp Auditorium, Lillie Building, MBL

09:00 – 10:00  “Uncovering cell dynamics in developing embryos, embryoids and organoid models”
Gopi Shah, EMBL Barcelona (Virtual)

10:00 – 11:00  “Lattice light sheet microscopy – innovations, applications and future directions”
Wes Legant, University of North Carolina Chapel Hill

11:00 – 11:30  Coffee Break

11:30 – 12:30  “3D single-molecule tracking and super-resolution imaging throughout cells using a tilted light sheet”
Anna-Karin Gustavsson, Rice University (Virtual)
12:30 – 13:30  Lunch
13:30 – 15:30  Poster Session
15:30 – 16:00  Camera Vendor Talks, Meigs Room
              Hamamatsu
              PCO
              Photometrics
16:00 – 17:00  Vendor Talk, Meigs Room
              MBF Bioscience
              Applied Scientific Instrumentation
              Bruker
              Zeiss
              Olympus
              Miltenyi Biotech
17:00 – 17:30  Break
17:30 – 18:30  “How the embryo gets its shape: understanding early mouse development with light-sheet microscopy”
              Kate McDole, MRC Laboratory
18:30 – 21:00  Dinner and Conference Closing Party
              Swope Lower Terrace