

**8th Charleston Workshop on
LIGHT MICROSCOPY FOR BIOSCIENCES
June 11-16, 2023**

OUTLINE

LECTURE (CP200, Pharmacy Building) and LAB (DD112, Drug Discovery Building)

Sunday, June 11, 2023

12:00 p.m.	Registration – CP200
1:00 p.m.	Course Introduction – CP200
1:30 p.m.	Lecture 1: Imaging and Illumination Light Paths in the Microscope, John J. Lemasters – CP200
3:00 p.m.	Lab 1: Wide Field Microscopy: Protocols 1-6 – DD112
6:00 p.m.	Pizza party and introductions

Monday, June 12

8:30 a.m.	Lecture 2: Image Formation, Phase Contrast, Polarization and DIC, John J. Lemasters – CP200
9:30 a.m.	Coffee Break
10:00 a.m.	Lab 2: Wide field microscopy: Protocols 7-10 – DD112
12:00 p.m.	Lunch (on your own)*
1:00 p.m.	Lecture 3: Principles of Fluorescence Microscopy, Anna-Liisa Nieminen – CP200
2:00 p.m.	Coffee Break
2:30 p.m.	Lab 3: Wide field microscopy: Protocols 11-13 – DD112
4:30 p.m.	Lecture 4: Filters for Fluorescence Microscopy, Michael Stanley, Chroma – CP200
5:00 pm	Lecture 5: Essential Tools for Fluorescence Microscopy and High Content Screening, Mike Janes, ThermoFisher Scientific – CP200
6:00 p.m.	Dinner (on your own)*

Tuesday, June 13

8:30 a.m. Lecture 6: Digital Cameras, Butch Granada, Hamamatsu – CP200
9:30 a.m. Lecture 7: Image Processing with ImageJ, Thierry Pecot – CP200
10:30 a.m. Coffee Break
11:00 a.m. Lab 4: Fluorescence Microscopy Labs: Protocols 14-17 – DD112
12:45 p.m. Lunch (on your own)*
1:30 p.m. Lecture 8: Introduction to Confocal/Multiphoton Microscopy -
Basic Principles, John J. Lemasters – CP200
2:30 p.m. Coffee Break
3:00 p.m. Lab 5: Confocal Labs: Protocols 18-20 – DD112
6:00 p.m. Dinner (on your own)*

Wednesday, June 14

8:30 a.m. Lecture 9: Optimizing Confocal Performance, John J. Lemasters
9:30 a.m. Coffee Break – CP200
10:00 a.m. Lab 6: Confocal Lab: Protocols 21-23 – DD112
12:00 p.m. Lunch (on your own)*
1:00 p.m. **Keynote Lecture:** Investigation of Mitochondrial Dysfunction in
Live Prostate Cancer Cells: Fluorescence Lifetime Redox Ratio
Microscopy (FLIRR), Ammasi Periasamy, WM Keck Center for
Cellular Imaging, Departments of Biology and Biomedical
Engineering, University of Virginia – Basic Science 202
2:00 p.m. Group Photo (HCC communications)
2:30 – 5:30 p.m. Vendors Show DD 112 and Drug Discovery Lobby – Open to the
Public
Vendor presentations in CP200
3:30 p.m. Accelerating Assay Development and Drug Discovery Using
Cellinsight High Content Screening Technologies, ThermoFisher,
Brent A. Samson – CP200
4:00 p.m. Tissue Clearing, Miltenyi, Alexander Gruhl – CP200
4:30 p.m. Spinning disk confocal as a basis for multimodal imaging
possibilities, Andor, Robert Dunakin – CP200
6:00 p.m. Banquet – College of Pharmacy Lobby

Thursday, June 15

- 8:30 a.m. Lecture 10: Huygens Deconvolution, Vincent Schoonderwoert
- 9:30 a.m. Coffee Break
- 10:00 a.m. Lecture 11: Monitoring Protein-Protein Interactions in Living Cells: FLIM-FRET Microscopy, Ammasi Periasamy – CP200
- 11:00 a.m. Lecture 12: Introducing Imaris Image Analysis Software, Tomas Silva Santisteban, Andor – CP200
- 12:00 p.m. Lunch-N-Learn seminar, Lattice Light-Sheet, Bryan Chase, Zeiss – CP200
- 1:00 p.m. Lecture 13: Duolink, Immunocytochemistry and Automated Imaging Plate Readers, Monika Gooz – CP200
- 2:00 p.m. Coffee Break
- 2:30 p.m. Lecture 14: Probing Living Cells and Tissues with Multiphoton Microscopy, John J. Lemasters – CP200
- 3:30 p.m. Lab 7: Multiphoton Microscopy: Protocols 24-27
- 6:00 p.m. Dinner (on your own)*

Friday, June 16

- 8:00 a.m. Lecture 15: Lasers, Spectra-Physics Lasers, Alan Del Gaudio – CP200
- 8:30 a.m. Lecture 16: Super-Resolution Microscopy, Ye Tong – CP200
- 9:30 a.m. Abberior STEDYCON: Easy 2D STED, Abberior, John Waka – CP200
- 10:00 a.m. Coffee Break
- 10:30 a.m. Lab 8 & 9: Super-resolution and Light-sheet microscopy demo (Zeiss 880 Airyscan, Abberior STEDYCON, Miltenyi Blaze)
- 12:30 p.m. Lunch (on your own)
- 1:30 am Abberior Dyes, Abberior, Mary Grace Valasco – CP200
- 2:00 p.m. Lab 8 & 9: Super-resolution and Light-sheet microscopy (Zeiss 880 Airyscan, Abberior STEDYCON, Miltenyi Blaze)
- 4:00 p.m. Lecture 17: Scientific Rigor and Reproducibility – Eduardo Maldonado – CP200
- 5:00 p.m. Certificates of Attendance and End of Course

*Closest lunch options: MUSC main hospital cafeteria, ART cafeteria, and food trucks (in MUSC Greenway), Caviar & Bananas.