

MONTREAL LIGHT MICROSCOPY COURSE

Preliminary Program Overview

February 28th – March 3rd, 2023

Montreal Light Microscopy Course

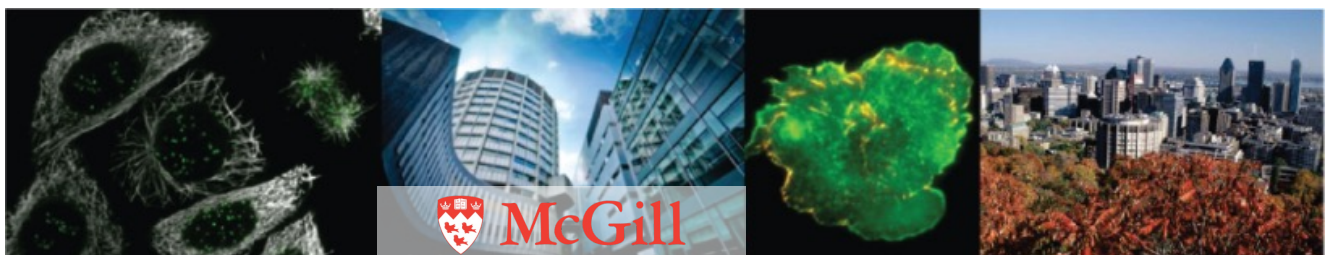
Fundamentals 2023



Chan
Zuckerberg
Initiative 



BioImaging
North America



McGill

MLMC Fundamentals Course Faculty

Claire Brown, Advanced BioImaging Facility (ABIF)

Guillaume Chouinard, Carl Zeiss Canada

Chris Souwand, Carl Zeiss Canada

Joel Ryan, Advanced BioImaging Facility (ABIF)

Philip Kesner, Advanced BioImaging Facility (ABIF)

Lane Manning, AVR Optics

Tuesday February 28, 2023

Basic Optics, Diffraction, Objective Lenses

- 13:00 - 13:15 **Introduction and Overview of the Course**
- 13:15 - 14:15 **Review of Light-Matter Interactions, Basic Optics & Image Formation, Köhler Alignment**
- 14:15 – 15:15 **Demonstration of the Abbe Experiments**
- 15:15 – 15:45 **COFFEE BREAK**
- 15:45 – 16:30 **Visualize the Diffraction Pattern**
- 16:30 - 17:30 **Objective Lenses and Aberrations**

Wednesday March 1, 2023

Phase contrast, DIC, Fluorescence, Fluorescence Microscope

- 9:00 - 10:30 **Phase Contrast Imaging & Darkfield**
- 10:30 – 11:00 **COFFEE BREAK**
- 11:00 - 12:00 **Differential Interference Contrast (DIC)**
- 12:00 - 13:00 **LUNCH BREAK**
- 13:00 - 13:30 **Group Discussion**
- 13:30 – 15:00 **Fluorescence, Fluorescent Probes and Dyes Selection**
- 15:00 – 15:30 **COFFEE BREAK**
- 15:30 - 17:00 **The Fluorescence Microscope**

Thursday March 2, 2023

Multicolour Imaging, Making a Figure

9:00 – 10:30 **Cameras, Nyquist Sampling & Resolution**

10:30 – 11:00 **COFFEE BREAK**

11:00 – 11:30 **Introduction to Fiji/ImageJ**

11:30 – 12:30 **How to make a figure for publication**

12:30 - 13:30 **LUNCH BREAK**

13:30 - 14:10 **Wide-field Deconvolution**

14:10 - 14:50 **Confocal Laser Scanning Microscopy (CLSM)**

14:50 – 15:20 **COFFEE BREAK**

15:20 – 16:00 **Spinning Disk Confocal Microscopy (SDCM)**

16:00 – 17:30 **Participant Presentations & Case Studies**

Friday March 3, 2023

3D Imaging Techniques Practical Hands-On

- 9:00-10:30 **3D Imaging Hands-On Session #1**
Rotation to Wide-Field Deconvolution Microscope, Spinning Disk Confocal Microscope, Laser Scanning Confocal Microscope – ABIF Microscopes
- 10:30-11:00 **COFFEE BREAK**
- 11:00-12:00 **3D Imaging Hands-On Session #1-Continued**
- 12:00-13:00 **LUNCH BREAK - Certificates**
- 13:00-15:00 **3D Imaging Hands-On Session #2**
Rotation to Wide-Field Deconvolution Microscope, Spinning Disk Confocal Microscope, Laser Scanning Confocal Microscope – ABIF Microscopes
- 15:00-15:30 **COFFEE BREAK**
- 15:30-17:30 **3D Imaging Hands-On Session #3**
Rotation to Wide-Field Deconvolution Microscope, Spinning Disk Confocal Microscope, Laser Scanning Confocal Microscope – ABIF Microscopes
- 18:00-19:30 **SOCIAL: Closing Dinner**
Thompson House