**Light Microscopy Module (LMM)** is an advanced scientific optical microscope that can be operated in conjunction with the FIR ISS facility. The facility features an automated Leica DM RXA scientific-grade microscope.

**LMM Hardware and Microscopy:**
- Leica DM RXA scientific-grade microscope
- Bright Field (BF), Fluorescence (F)
- Ground command 6 position objective turret
  - User configurable 2.5X to 100X objective lenses
- Ground command 8 position fluorescent filter turret
  - DAPI, FITC, 50/50 mirror, Blue, Red, Green
- Ground commanded X-Y stage with 2.5 µm step size,
- Ground Commanded Z stage with 200 nm step size
- Auxiliary containment for shatterable material and low volume, low toxicity fluids
- QImaging Retiga 1300
  - 1280 x 1024 pixel, 8 bit, cooled 2/3 inch CCD

**System Upgrades 2016: Confocal Microscopy**
- Confocal imaging capability, Nd:YAG 532 nm laser illumination
- 4-channel 30 fps, GigE/USB3 image acquisition and storage
- IMPERX B2020 Camera
  - 2048 x 2048 pixel x 12 bits, KAI-04022, CCD
**LMM Capabilities**

**Auxiliary Fluids Container (AFC)**
The LMM provides an enclosed work area called the AFC, which is the main work area for sample cell processing and containment for fluids and shatterable materials.

The sample module is mounted on the X-Y stage assembly and translation in the X-Y plane is done using motors on the translation stage itself.

**Different types of samples in custom-made sample modules are mounted to the X-Y stage for observation in the LMM.**

Constrained Vapor Bubble Sample Module

Sample Slide of Mouse Tissue

ACE-M Sample Module

2.5X On-Orbit Image of ACE-M Sample Well with Colloid Sample