

PENN VET IMAGING CORE FACILITY

LEICA SP5 CONFOCAL/MULTIPHOTON MICROSCOPE SYSTEM

Location: Hill Pavilion, room 374

Applications:

- Intravital 2-Photon imaging
- Second harmonic generation (SHG) imaging
- Fluorescence recovery after photobleaching (FRAP)
- Intensity Förster resonance energy transfer (FRET)
- Routine confocal microscopy and spectral scans

Microscope Stand: Leica DM 6000 upright microscope with variable height fixed stage and inset motorized stage

Software: Leica Application Suite Advanced Fluorescence (LAS AF) with FRAP and FRET wizards; Volocity software is available via the imaging core license server for 3D rendering and analysis of images

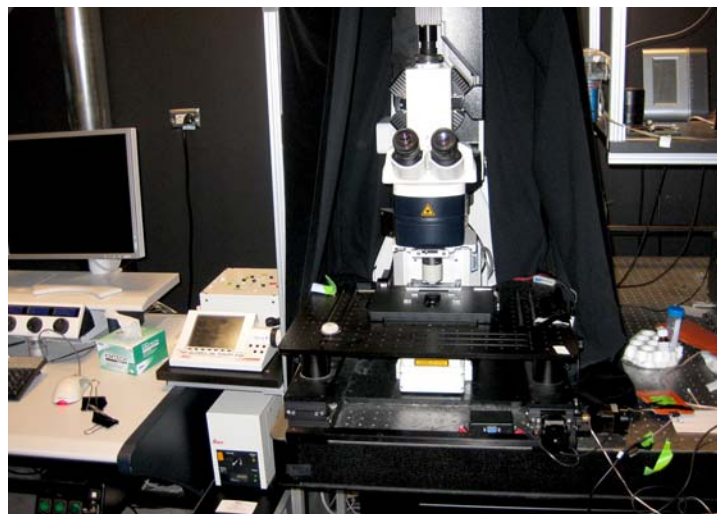
Lasers:

- Argon laser (458, 476, 488, 514 nm)
- HeNe lasers (543 and 633 nm)
- Coherent Chameleon Ultra II Ti:Sapphire laser (tunable, 680-1080 nm)

Detection: 4 internal spectral detectors (PMTs), 1 trans detector (PMT), 4 external non-descanned detectors (APDs) with interchangeable beamsplitters: 495LP, 505LP, 520LP, 530LP, 560LP for center filter block (splits beam between NDD1-2 and 3-4); 470LP, 495LP, 545LP, 560LP, 575LP, 620LP, 640LP for secondary beamsplitter positions (between NDD 1 and 2 or NDD 3 and 4); resonant scanner available for rapid (8000 kHz) scanning

Objective Lenses:

- 20x water immersion HCX APO L (1.00 NA) [*This lens has a separate mount from the lenses listed below*]
- 40x water immersion HCX APO UVI (0.80 NA)
- 10x dry HC PL APO CS (0.40 NA)
- 40x* oil immersion HCX PL APO CS (1.25-0.75 NA; variable iris)
- 63x* oil immersion HCX PL APO CS (1.40-0.60 NA; variable iris)



Peripheral Equipment:

- Temperature Control
 - Fine Science Tools TR-200 temperature controller with small (3x4") and large (3.5x9") mouse heating pads
 - Warner Instrument Corporation TC344B temperature controller, syringe heater, inline heater, and thermal control for culture chambers
- Perfusion system with heat, oxygenation, and vacuum
- Culture chambers
 - Warner heated cell culture chamber Model QE-1 for 25 mm coverslips and 35 mm dishes
 - Warner heated perfusion chamber (PM-1 platform with RC-22 insert) for tissue explants

** The 40x oil, and 63x oil lenses are shared among the Leica microscopes in the core, but are normally available upon request*