

PENN VET IMAGING CORE FACILITY

LEICA DMI4000 WITH YOKAGAWA CSU-X1 SPINNING DISK CONFOCAL ATTACHMENT

Location: Hill Pavilion, room 373

Applications:

- Long-term multi-point timelapse microscopy
- Fluorescence, brightfield, differential interference contrast (DIC), and polarization microscopy
- Large-scale image tile acquisition and stitching

Microscope Stand: Leica DMI4000 inverted microscope with Applied Scientific Instrumentation (ASI) MS2000 motorized XY stage and 100 μm range Piezo Z-axis motor, enclosed in a custom environmental chamber for temperature and CO₂ control

Software: MetaMorph 7 (Molecular Devices Corporation); additional offline version of MetaMorph available for image analysis on computer in Hill room 313

Light Sources and Filter Sets:

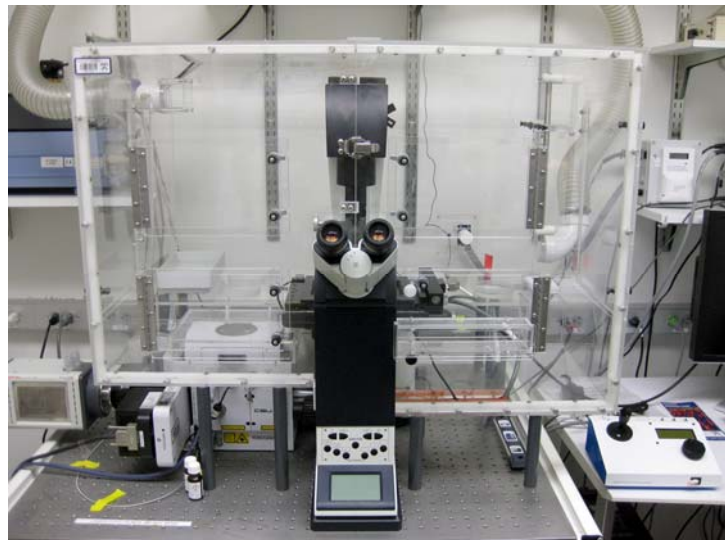
- Lasers controlled via Spectral Applied Research LMM5
 - ☼ 488 nm Spectra Physics solid state laser, paired with emission filter 505-552 nm
 - ☼ 561 nm Cobalt Jive solid state laser, paired with emission filter 583-650 nm
- Leica EL6000 mercury light:

<u>Cube</u>	<u>Excitation</u>	<u>Dichroic</u>	<u>Emission</u>
GFP	450-490	500LP	500-550
Texas Red	542-582	593LP	604-644
DAPI	355-425	455LP	470LP

CCD camera: Hamamatsu ImagEM 16-bit cooled EMCCD camera (C9100-13)

Objective Lenses:

- 10x dry HC PL APO (0.40 NA)
- 63x oil immersion HCX PL APO (1.40 NA) [DIC optics available for this lens]
- 20x* dry HC PLAN APO (0.70 NA)
- 40x* oil immersion HCX PL APO CS (1.25-0.75 NA; variable iris)
- 100x* oil immersion HCX PL APO (1.46 NA) [DIC optics available for this lens]



** The 20x dry, 40x oil, and 100x oil lenses are shared among several Leica microscopes in the core, but are normally available upon request*