

Advanced Bioimaging Laboratory Equipment

Light Microscopy

ZEISS Elyra 7 Super-Resolution Microscope with Lattice SIM2

System capabilities: TIRF, Lattice SIM2, Apotome SIM2 and 2D and 3D single molecule localization microscopy super-resolution capabilities. The system is equipped with 405nm (50mW), 488nm (500mW), 561nm (500mW) and 640nm (500mW) diode laser lines. All super-resolution data will be archived on an (8) disk bay Synology Disk Station with a total usable 72TB in a RAID 6 configuration



Leica SP8-X confocal microscope

Our Leica SP8-X confocal microscope, producing high-resolution 3D and 4D image data, has a full range of high-resolution optics on an inverted microscope platform. The instrument includes a resonant scanner, for imaging cell dynamics with reduced photo-damage. It is also equipped with a white light laser (with 200 laser lines), a 405 nm diode laser and an argon gas laser and five fluorescence detectors including three high quantum efficiency HyD detectors. All confocal data is archived on (4) drive RAID 5 configured Buffalo Drive with 16 Terabyte of storage capacity.



ZEISS AxioZoom Macro Microscope

Our Zeiss AxioZoom macro microscope with Apotome 2 allows routine to advanced high-resolution multiscale fluorescence, confocal, transmitted and reflected imaging of slides, multi-well plates and intact plant specimen. This motorized system allows advanced automation to create large area maps and sophisticated multi-location and analysis routines.



Nikon NiE Widefield Epifluorescence Microscope

For wide-field fluorescence imaging, a Nikon Ni-E equipped with high-resolution objectives, 16-bit b/w digital camera (Hamamatsu Orca Flash 4.0) and color CMOS camera (Nikon Fi-3), and Z-stepper motor for 3D imaging is available. This instrument allows imaging of a brightfield, phase contrast, DIC, sensitive imaging of a variety of fluorophores including time-lapse fluorescence imaging.



Zeiss PALM Laser Microdissection Microscope



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Electron Microscopy

ThermoFisher Scientific Talos 120C G2 Transmission Electron Microscope

Our Talos L120C G2 is equipped with a Ceta 16M 4k x 4k CMOS camera, ambient tomography holder and Gatan ELSA 698.ULP cryo holder (+/- 70 degrees) and MAPS 3 software.



Leica EM ICE High Pressure Freezer



Hitachi TM-1000 tabletop Scanning Electron Microscope



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Sample Preparation

Leica CM 1950 Cryostat

Our CM1950 with CryoJane system is used for acquiring and transferring frozen sections to glass slides and optical microscopy and laser capture microdissection.



Leica Ultracut UCT Ultramicrotome with Delsci Machines manipulator for array tomography.



Vibratome 1500 Sectioning System



Grid plunge freezer





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Software

- ORS Dragonfly
- ZEISS ZEN Blue/Black SR and Intellesis
- ImageJ/Fiji
- ZEN Connect Correlative Microscopy Workspace
- Stereology Analyzer v4.3.3.
- Bitplane Imaris 3D Reconstruction
- Huygens Deconvolution

