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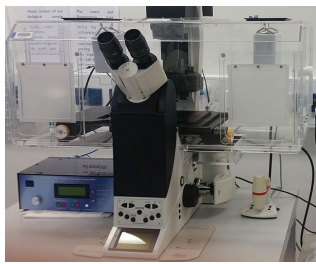

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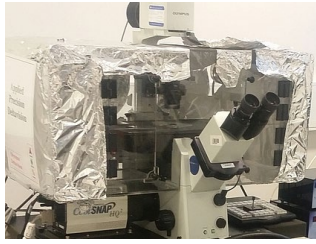
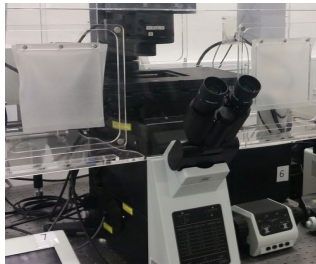


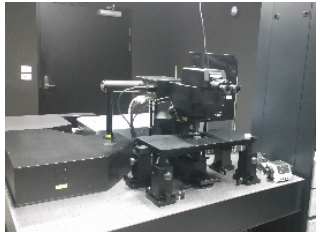
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<b>1. Optical Microscopes</b>		
<p><b>Leica DMI6000 LX</b></p> 	<ul style="list-style-type: none"> <li>• Live cell chamber with CO<sub>2</sub> and adjustable Temp (RT to 37degC+)</li> <li>• Multiple adaptors for various plates, chamber and slides</li> <li>• Leica MC190 HD camera for imaging of histological and fluorescent samples</li> <li>• Fully motorised system with software to suit acquisition of 3D and multidimensional microscopy</li> </ul> <p>Download pdf for details (objective/filter list and SOP)</p> <p><i>Leica Microsystems. Mannheim, Germany</i></p>	<p>TRF Bldg, Lvl 4, Room 4R.44</p>
<p><b>Olympus/VisioPharm Stereology</b></p> 	<ul style="list-style-type: none"> <li>• Upright fluorescence and brightfield microscope based on Olympus BX61</li> <li>• Olympus DP73 camera for imaging of histological and fluorescent samples</li> <li>• Stage fits standard coverslides</li> <li>• Olympus CellSens software for standard imaging and VisioPharm Stereology software for stereological imaging and analysis</li> </ul> <p>Download pdf for more specific details (objective/filter list and SOP)</p> <p><i>Olympus, Tokyo, Japan</i></p>	<p>TRF Bldg, Lvl 4, Room 4R.44</p>

<p><b>API Deltavision</b></p> 	<ul style="list-style-type: none"> <li>• API DeltaVision Deconvolution workstation based on IX71 Olympus microscope</li> <li>• multichannel fluorescence with HQ CoolSnap camera</li> <li>• equipped with Clearstate Solutions CO<sub>2</sub> (37°C) incubator for live cell imaging.</li> </ul> <p>Download pdf for more specific details (objective/filter list and SOP)</p> <p style="text-align: right;"><i>DeltaVision (GE Healthcare, Issaquah, WA, USA)</i></p>	<p>TRF Bldg, Lvl 4, Room 4R.44</p>
<h2 style="color: #4F81BD;">2. Confocal / Multiphoton Microscopes</h2>		
<p><b>Olympus FV1200 Confocal</b></p> 	<ul style="list-style-type: none"> <li>• Inverted IX81 base, with fully motorised stage (x,y,z)</li> <li>• 4 PMT detectors + 1 transmitted light detector</li> <li>• Laser lines include 405, 488, 543, 635 nm</li> <li>• environment chamber (CO<sub>2</sub> and temperature RT to 37°C)</li> <li>• Download pdf for details (objective list and SOP)</li> </ul> <p style="text-align: right;"><i>Olympus, Tokyo, Japan</i></p>	<p>TRF Bldg, Lvl 4, Room 4R.44</p>
<p><b>Nikon C1 Invert</b></p> 	<ul style="list-style-type: none"> <li>• Inverted Ti-E base, with fully motorised stage (x,y,z)</li> <li>• 3 PMT detectors + 1 transmitted light detector</li> <li>• Laser lines include 405, 488, 561, 638 nm</li> <li>• sCMOS Camera</li> <li>• JOBS software module for automated imaging procedures</li> <li>• environment chamber (CO<sub>2</sub> and temperature RT to 37degC+)</li> <li>• Download pdf for details (objective list and SOP)</li> </ul> <p style="text-align: right;"><i>Nikon, Tokyo, Japan</i></p>	<p>TRF Bldg, Lvl 4, Room 4R.44</p>
<p><b>Leica SP5 Confocal</b></p> 	<ul style="list-style-type: none"> <li>• DM6000 upright fixed stage microscope.</li> <li>• 3 PMT detectors + 1 transmitted light detector</li> <li>• Laser lines include 458, 476, 488, 495, 514, 543, 633nm</li> <li>• LASAF software</li> <li>• Fixed samples only, not live cell compatible</li> </ul> <p>Download pdf for details (objective list and SOP)</p> <p style="text-align: right;"><i>Leica Microsystems. Mannheim, Germany</i></p>	<p>TRF Bldg, Lvl 4, Room 4R.44</p>
<p><b>Olympus FV-MPERS Multiphoton</b></p> 	<ul style="list-style-type: none"> <li>• Upright Multiphoton microscope</li> <li>• Motorized XYZ stage plus manual height adjustment, making it adaptable for imaging organoids in dishes and whole small animal models</li> <li>• Spectra-Physics InSight X3 dual laser line for multiphoton imaging</li> <li>• Tunable laser (680-1300nm) &amp; fixed 1045nm laser lines</li> <li>• 4 NDD detectors: 2 GaSP + 2 PMT</li> <li>• Objectives: 25x water 1.05 NA 2mm working distance for deep tissue imaging + 5x air objective for overviews</li> <li>• Deep focus adjustable laser power settings to allow deeper imaging.</li> </ul>	<p>E Block lab 5, ground floor animal facilities</p>

### 3. Super-Resolution Microscopes

#### Multi-modal Super Resolution (multiSR)

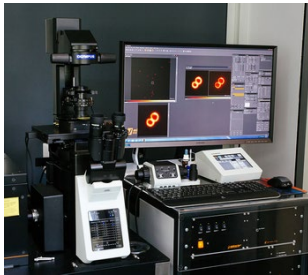


- Super-resolution microscope offering various modalities:
  - Multifocal structured illumination microscopy (MSIM)
  - Single-molecule localization microscopy (STORM/PALM)
  - Super-resolution radial fluctuations (SRRF) Andor Zyla sCMOS camera
- Objective: 100X oil 1.3NA
- Lasers: 405 nm, 473 nm, 532 nm, 640 nm
- Filters: Quad-band filter for Blue, Green, Red, Far-red
- Available from March 2020

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*Monash Micro Imaging, Melbourne, Australia*

#### Abberior STED, Clayton



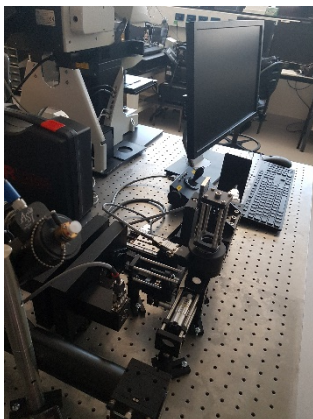
- Stimulated Emission Depletion instrument based on an Olympus IX83 body, with x60W/1.2NA (UPLSApo, 0.28mm WD) and x100 oil/1.4NA (UPlanSApo, 0.17mm WD). 2 Channel detector unit (APD's), pulsed lasers for 488, 560, 640nm excitation, with STED lasers at 595 and 775nm. 775 STED optics have 3D capability.
- Suitable dyes:
  - 488nm ex/595nm depletion: GFP, STAR520SXP, Oregon Green 488, Alexa Fluor 532, TMR etc
  - 561nm ex/775nm depletion: STAR600, Atto 590, Alexa 594
  - 640nm ex/775nm depletion: STAR635P, Atto647N
- Live Imaging is supported by live cell incubation, RESCue software, and suitable dyes including
  - SNAP, CLIP, HALO tags, Silicon Rhodamine dyes.

MMI – Clayton  
Room G52,  
15 Innovation  
Walk

*Abberior Instruments GmbH (Gottingen, Germany)*

### 4. Light Sheet Instruments

#### DiSPIM

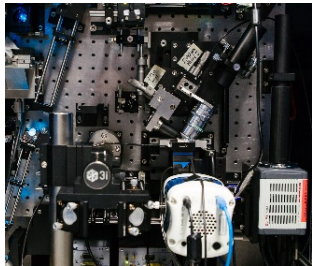
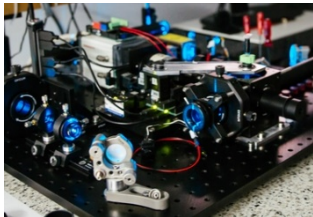
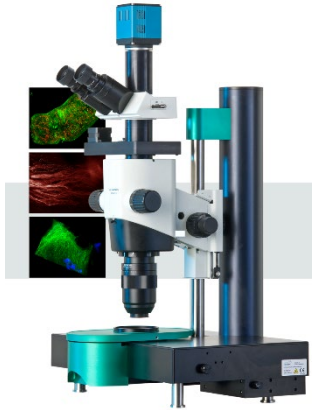


Selective Plane Illumination Microscope, built in-house for in vivo live imaging of organoid and tissue samples. Long duration imaging possible. Samples typically mounted in low density agarose cylinders immersed in culture medium.

*Under construction and testing – Available mid-2020  
See Instrument Manager for details.*

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Room 4R.44

*Monash Micro Imaging, Melbourne, Australia*

<p><b>Lattice Light Sheet, Clayton</b></p> 	<p>Lattice light sheet microscope, based on the Betzig (Janelia Farms) instrument. Images sub-cellular events in living cells at confocal resolution yet with much higher temporal resolution and much lower photo toxicity. Some restrictions on sample mounting and sample size.</p> <ul style="list-style-type: none"> <li>• Imaging volume space typically restricted to 100 x 100 x 50 microns (imaged by x40 WI objective).</li> <li>• 250 x 250 x 400 nm XYZ resolution possible.</li> <li>• Long term imaging possible. See manager for details.</li> <li>• Laser lines: 405, 488, 560 and 640nm.</li> <li>• ORCA FLASH 4 camera.</li> </ul> <p>Custom LabView software. Custom FIJI sample staging and deskew post processing. Please discuss all applications with Instrument Manager.</p> <p><i>Intelligent Imaging Innovations (Denver, Colorado)</i></p>	<p>MMI – Clayton Room G54 15 Innovation Walk</p>
<p><b>D2-SPIM, Clayton</b></p> 	<p>Dual laser dual illumination axis SPIM (Selective Plane Illumination Microscope). Built in-house for in vivo live imaging of embryo scale samples. Long duration imaging possible. Samples typically mounted in low density agarose cylinders immersed in culture medium.</p> <ul style="list-style-type: none"> <li>• Multi-view imaging possible.</li> <li>• ~ 650 nm lateral resolution with GFP label.</li> <li>• Olympus 10x 0.3 NA illumination objective.</li> <li>• Olympus 20x 0.5 NA detection objective.</li> <li>• Cube 488 (50mW) and Obis 594 (65 mW) laser lines. Orca Flash 4 camera.</li> <li>• MicroManager operating system.</li> </ul> <p><i>See Instrument Manager for details. Monash Micro Imaging, Melbourne, Australia</i></p>	<p>MMI – Clayton Room G52 15 Innovation Walk</p>
<p><b>UltraMicroscope II, Clayton</b></p> 	<p>Bidirectional lightsheet based on upright Olympus MVX-10 Macro-Zoom microscope with several objective options up to 20x, allowing in vivo imaging or small animals/embryos as well as cleared samples, up to max 10mm in size. All optical and mechanical components are compatible to most clearing solutions [BABB, DBE, Clarity, SeeDB etc] and water.</p> <ul style="list-style-type: none"> <li>• Lasers: 405, 488, 561, 639 and 785nm, producing a lightsheet of 4 - 40µm thickness.</li> <li>• Andor Neo sCMOS camera (2560 x 2160 pixels, max frame rate - 100 fps @ full frame). Filter switching via 8 stage filterwheel. Motorized xyz- stage with 10x10x10mm travel range.</li> <li>• Lenses: LVMI-Fluor 1.3X/0.1 multi-immersion with 9mm WD, LVMI-Fluor 4X/0.3 multi-immersion with 5.6-6mmWD. MVX Body also accepts conventional objectives such as the Leica 20x BABB and WI lenses, or other.</li> </ul> <p><i>LaVision BioTec GmbH, Bielefeld, Germany</i></p>	<p>MMI – Clayton Room G57 15 Innovation Walk</p>

## 5. Slide Scanning

### Olympus VS120



- Automated slide scanning of histological and fluorescent microscopy standard 76x26mm slides
- Fits up to 100 slides at a time
- Download pdf for more specific details (objective list and SOP)

Monash Histology Platform – MHTP Node, MHRP Bldg, Lvl 4, Rooms 4.34 & 4.35

*Olympus, Tokyo, Japan*

## 6. Software

### Licensed Software

CellSens

Imaris (Bitplane)

Huygens (SVI)

LASAF (Leica)

Metamorph

RICS

SymPhoTime

Zen (Zeiss)

### Public Domain & Free/Lite (incl. Image Viewers, and limited life/demo versions)

	Source	MMI
Axiovision (Zeiss)	- n/a	enquire
FIJI Image Analysis, FIJI software	- <a href="#">download</a>	<a href="#">local DL</a>
FIJI Image Analysis: V6 (Handbook) (courtesy of Cameron Nowell, MIPS, Monash)	<a href="#">MANUAL, DEMO Images</a>	
FV1000 Viewer (Olympus)	- <a href="#">download</a>	<a href="#">local DL</a>
FV3000 (incl FV1200 & MP) <b>NEW</b>	- <a href="#">download</a>	<a href="#">local DL</a>
Huygens software (SVI), trial/demo	- <a href="#">download</a>	
Imaris 30 day trial (Bitplane), ver 9.5	- <a href="#">download</a>	
Imaris Viewer (3D/4D viewer), ver 9.5 <b>NEW</b>	- <a href="#">download</a>	<a href="#">Local DL</a>
Irfanview (image viewer, file conv.) ver .454	- <a href="#">download</a>	<a href="#">local DL</a>
Leica LAS X Core (Offline) <b>Updated</b>	- <a href="#">download</a>	
Leica LAS X Mobile app for iOS <b>NEW</b>	- <a href="#">app DL</a>	
NIS elements Viewer (Nikon) <b>Updated</b>	- <a href="#">download</a>	
OlyVia for DotSlide (Olympus)	- <a href="#">download</a>	<a href="#">local DL</a>
Zen Blue/Black Lite (Zeiss) <b>Updated</b>	- <a href="#">download</a>	
<b>Related Resources</b>	Computational Resources: MASSIVE	<a href="https://www.massive.org.au/">https://www.massive.org.au/</a>

## 7. Associated Instrumentation

### Virtual Reality HTC VIVE with SyGlass Software

- Virtual Reality equipment for exploring 3D imaging data from a whole new angle
- SyGlass software loads any .tif stack into virtual reality
- Perform measurements in VR with SyGlass

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