

MMI- ARA (Alfred Research Alliance)

2020

Microscopy Instrumentation & Software



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LOCATIONS

Monash: ACBD & Central Clinical School

89 Commercial Road, Burnet Building, and

85 Commercial Rd (Level 2, between the Burnet Building and the Alfred Hospital)

Baker Heart and Diabetes Institute

75 Commercial Rd, Prahran





Burnet Institute

85 Commercial Road (Burnet Building), and

99 Commercial Rd (Alfred Center), Prahran

1. Monash: ACBD & Central Clinical School

<p>Nikon A1r Plus si (ACBD)</p> 	<ul style="list-style-type: none"> • Confocal Microscope: Inverted Microscope, four colour with Galvo & Resonant Scanner. • Ideal for Intravital imaging, with Live Cell incubator, time lapse. • Fluorescence capabilities: DAPI; FITC/eGFP/Alexa488; TRITC/YFP/Alexa546; Cy5/Alexa 633. • Conventional or fast imaging (30 fps, faster with small frames) • Piezo Z-stage (very fast) • Simultaneous imaging with photo-activation or bleaching • Tiling and stitching • 32 channel spectral detector • Perfect Focus System. Will always stay in focus • PC-2 Containment Laboratory <p style="text-align: right;"><i>Nikon, Tokyo, Japan</i></p>	<p>Rm. 2U 44, 2nd Fl. Monash Bld,</p> <p>Lab. Ph: +61 3 9903 0744.</p> <p>Enquiries: Stephen Cody Email, or Tel (+61 3 9903 0142)</p>
<p>Nikon A1r Plus si (AMREP)</p> 	<ul style="list-style-type: none"> • Confocal Microscope: Inverted Microscope, Four colour with Galvo & Resonant Scanner. Includes VAAS Super Resolution. • Ideal for live cell imaging, with Live Cell incubator, time lapse. • Fluorescence capabilities: DAPI; FITC/eGFP/Alexa488; TRITC/YFP/Alexa546; Cy5/Alexa 633. • Conventional or fast imaging (30 fps, faster with small frames) • Piezo Z-stage (very fast) • Simultaneous imaging with photo-activation or bleaching • Tiling and stitching • Perfect Focus System. Will always stay in focus • PC-2 Containment Laboratory <p style="text-align: right;"><i>Nikon, Tokyo, Japan</i></p>	<p>Rm. 6M 47, 6th Fl. Burnet Bld,</p> <p>Closest Lab. Ph: +61 3 9903 0151.</p> <p>Enquiries: Stephen Cody Email, or Tel (+61 3 9903 0142)</p>
<p>Nikon Ti-E</p> 	<ul style="list-style-type: none"> • Inverted Motorised Microscope. • Ideal for live cell imaging, with Live Cell incubator, time lapse. • Tiling and stitching. • Deconvolution • Two very fast and Very sensitive cameras (100fps), sCMOS Andor Zyla and Photometrics evolve Delta. • Objectives: 10x – 100x. • Fluorescence, DIC, Phase: Fluorescence Filter sets: DAPI, Hoechst; FITC/eGFP/Alexa488; TRITC/YFP/Alexa 568; Cy5/Alexa 647. • Perfect Focus System. Will always stay in focus • PC-2 Containment Laboratory <p style="text-align: right;"><i>Nikon, Tokyo, Japan</i></p>	<p>Rm. 2U44, 2nd Fl. Monash Bld,</p> <p>Lab. Ph: +61 3 9903 0744.</p> <p>Enquiries: Stephen Cody Email, or Tel (+61 3 9903 0142)</p>

<p>Olympus IX83 Cell TIRF</p> 	<ul style="list-style-type: none"> • TIRF Microscope – Inverted Microscope Olympus IX8, Four colour, with Live Cell incubator. • sCMOS camera, Hamamatsu Orca Flash 4 • Photometrics DualView (Simultaneous two channel image on one camera). • Fluorescence capabilities: DAPI, Hoechst / FITC, eGFP, Alexa488 / TRITC, YFP, Alexa 568 • PC-2 Containment Laboratory <p>NOTE: Access to this system is at the discretion of ACBD</p> <p style="text-align: right;"><i>Olympus, Tokyo, Japan</i></p>	<p>Rm. 2U37, 2nd Fl. Monash Bld,</p> <p>Lab. Ph: +61 3 9903 0714.</p> <p>Enquiries: Stephen Cody Email, or Tel (+61 3 9903 0142)</p>
<p>Olympus BX51</p> 	<ul style="list-style-type: none"> • Upright Microscope • Colour camera • Objectives: 4x – 100x. • Limited Fluorescence, Brightfield. • Fluorescence filter sets: CFP; FITC/eGFP/Alexa488; TRITC/YFP/Alexa546 • While this system is capable of fluorescence imaging, it is not ideal • PC-2 Containment Laboratory <p style="text-align: right;"><i>Olympus, Tokyo, Japan</i></p>	<p>Rm. 6M 47, 6th Fl. Burnet Bld, Closest Lab. Ph: +61 3 9903 0151.</p> <p>Enquiries: Stephen Cody Email, or Tel (+61 3 9903 0142)</p>
<p>ACBD Workstation and Software</p> 	<ul style="list-style-type: none"> • A moderately powerful PC for image analysis. HP Z400 • Quad core, 16 GByte RAM, Win 7 64 • Software – FIJI , ImageJ, MetaMorph, Imaris and various other imaging utilities • If you require access to other software such as Huygens or Drishti please contact an MMI staff member. • Please book before using – No email or web browsing 	<p>Location TBA</p> <p>Enquiries: Stephen Cody Email, or Tel (+61 3 9903 0142)</p>
<p>NEW ! Immunology Workstation and Software</p> 	<ul style="list-style-type: none"> • A powerful PC for image analysis. HP Z8 G4 • 8 core, 128 GByte RAM, Win 10 64 • Software – FIJI , ImageJ, MetaMorph, Imaris and various other imaging utilities • If you require access to other software such as Huygens or Drishti please contact an MMI staff member. • Please book before using – No email or web browsing. 	<p>Rm. 6M 13, 6th Fl. Burnet Bld,</p> <p>Closest Lab. Ph: +61 3 9903 0151.</p> <p>Enquiries: Stephen Cody Email, or Tel (+61 3 9903 0142)</p>

2. Baker Heart and Diabetes Institute

<p>Olympus BX61</p> 	<ul style="list-style-type: none"> • Upright Motorised Microscope • Objectives: 10x – 100x • Fluorescence, DIC, Phase • Fluorescence Filters sets: DAPI; FITC/eGFP/Alexa488; TRITC/YFP/Alexa546; Cy5/Alexa 633 • PC-2 Containment Laboratory 	<p>Rm. 3B.29, Level 3 Lab. Ph: 8532 1291 Enquiries: Iska Carmichael Email, or Tel. (+61 3 8532 1580)</p>
<p>Olympus FSX100 (Baker Only)</p> 	<ul style="list-style-type: none"> • "Box type" inverted microscope for brightfield and limited fluorescence applications. • Colour camera • Continuous Optical Zoom • Incorporates a preview scanner. Ideal for finding glomeruli etc. • Fluorescence Filter sets: DAPI; FITC/eGFP/Alexa488; TRITC/YFP/Alexa546; Cy5/Alexa 633. • Access to this system is at the discretion of Baker • PC-2 Containment Laboratory 	<p>Rm. 3B.29, Level 3 Lab. Ph: 8532 1291 Enquiries: Iska Carmichael Email, or Tel. (+61 3 8532 1580)</p>
<p>Image Analysis PC (Baker)</p> 	<ul style="list-style-type: none"> • A moderately powerful PC that for image analysis. • Quad core, 16 GByte RAM, Win 7 64 • Software – FIJI , ImageJ, MetaMorph, Imaris and various other imaging utilities. • If you require access to other software such as Imaris Huygens or Drishti please contact an MMI staff member. 	<p>Rm 3B 30b, Level 3 Lab. Ph: 8532 1580 Enquiries: Iska Carmichael Email, or Tel. (+61 3 8532 1580)</p>
<p>Nikon A1r Plus si NIR Modified</p> 	<ul style="list-style-type: none"> • <u>Confocal Microscope</u> – Four colour – Galvo & Resonant Scanner. Plus Two NIR Channels under development. • Inverted Microscope • Fluorescence capabilities: DAPI, Hoechst; FITC/eGFP/Alexa488; TRITC/YFP/Alexa 568; RFP, Cy5/Alexa 647, Alexa 700*/Cy7*, Alexa 750*/Alexa 780*.... *NIR laser mods are experimental, all users must contact Stephen Cody before embarking on NIR experiments. • Conventional or fast imaging (30 fps, faster with small frames) • Piezo Z-stage (very fast) • Simultaneous imaging with photo-activation or bleaching • Tiling and stitching • 32 channel spectral detector • Perfect Focus System. Will always stay in focus • PC-2 Containment Laboratory 	<p>Rm. 3B.29, Level 3 Lab. Ph: 8532 1291 Enquiries: Iska Carmichael Email, or Tel. (+61 3 8532 1580)</p>

3. Burnet Institute

<p>API DeltaVision-RT/Core Deconvolution Microscope</p> 	<ul style="list-style-type: none"> • Inverted Microscope with Motorised XYZ stage and filter wheels Fluorescence Filter sets: : DAPI; FITC/eGFP/Alexa488; TRITC/YFP/Alexa546; Cy5/Alexa 633. • Simultaneous photo-activation or bleaching • PC-3 Containment Laboratory • Access to this system is restricted to those trained in PC3 <p><i>DeltaVision (GE Healthcare, Issaquah, WA, USA)</i></p>	<p>PC3 Lab 1st Floor, Burnet Building Lab Ph: (03) 9282 2249</p> <p>Enquiries: Chad Johnson Email, or Tel (+61 3 8506 2447)</p>
<p>Olympus IX51</p> 	<ul style="list-style-type: none"> • Inverted Manual Microscope. Suitable for most simple applications where motorization is not required. • Objectives: 10x – 100x. • Fluorescence, DIC, Phase • Fluorescence Filter sets: DAPI; FITC/eGFP/Alexa488; TRITC/YFP/Alexa546; Cy5/Alexa 633. • B&W sensitive Camera • PC-2 Containment Laboratory • Easy to use <p><i>Olympus, Tokyo, Japan</i></p>	<p>Room 1M 76, 1st Floor, Burnet Bld,</p> <p>Lab. Ph: (03) 9282 2295</p> <p>Betty Kouskousis Email, or Tel (+61 3 8506 2396)</p>
<p>Zeiss Cell Observer</p> 	<ul style="list-style-type: none"> • Inverted Motorised Microscope. Ideal for live cell imaging, with Live Cell incubator, time lapse, "Definite Focus" automated stage focussing (will always stay in focus), tiling and stitching and deconvolution. • High resolution & High Sensitivity (EMCCD) Cameras • Objectives: 10x – 100x. • Fluorescence, DIC, Phase • Choice of LED or Metal Halide Lamp • Fluorescence Filter sets: DAPI; FITC/eGFP/Alexa488; TRITC/YFP/Alexa546; Cy5/Alexa 633. • PC-2 Containment Laboratory <p><i>Carl Zeiss Microscopy GmbH (Jena, Germany)</i></p>	<p>Room 7.404, 7th Floor Alfred Centre,</p> <p>Lab. Ph: +61 3 8506 2325</p> <p>Enquiries: Chad Johnson Email, or Tel (+61 3 8506 2447)</p>
<p>Nikon nSTORM/n-SIM Super-resolution Microscope</p> 	<p>Nikon N-STORM Widefield or TIRF based. – Microscope platform: motorised Ti-E TIRF inverted microscope with Perfect Focus System. Four available laser lines (405 nm, 488 nm, 561 nm and 640 nm). Objectives: Plan Apo VC 100x 1.4 oil and Apo TIRF 100x 1.49 oil. Camera: EM-CCD camera iXOn DU897 (Andor). Imaging Modes: TIRF- STORM and 3D STORM. Resolution: Lateral (XY) ~ 20-30 nm and Axial (Z) 50-60 nm, 50-75 nm 3D STORM resolution. PC-2 Containment Laboratory – Super-resolution Microscopy Lab.</p> <p>Nikon N-SIM Motorised Ti-E inverted microscope with Perfect Focus System and SIM illuminator and SIM microscope enclosure. Two available laser lines (488 nm and 561 nm). Objectives: Plan Apo VC 100x 1.4 oil and Apo TIRF 100x 1.49 oil. Camera: EM-CCD camera iXON DU897 (Andor). Imaging Modes: TIRF-SIM, 2D-SIM, 3D-SIM.</p>	<p>Room 1M 76, 1st Floor, Burnet Bld,</p> <p>Lab. Ph: (03) 9282 2295</p> <p>Enquiries: Betty Kouskousis Email, or Tel (+61 3 8506 2396)</p>

	<p>Diffraction Gratings: 3D 1 Layer for 2D/3D SIM with 100x/1.49 objective, excitation wavelength 405-640 nm, EX-V-R for 1D to 3D SIM with 60x/1.27 WI objective, excitation wavelength 405-640 nm and TIRF SIM with 100x/1.49 objective, excitation wavelength 488 nm. TIRF 561 with 100x/1.49 objective for TIRF SIM, excitation wavelength 561 nm. Resolution: Lateral (XY) ~ 85-110 nm (dependent on wavelength and optics) and Axial (Z) ~ 200-250 nm (dependent on wavelength and optics), 3D Axial range up to 20 um. Speed: TIRF and 2D SIM = 0.6 sec/frame (dependant on exposure time) and 3D SIM = 1.0 sec/frame (dependant on exposure time). PC-2 Containment Laboratory – Super-resolution Microscopy Lab. Laboratory Phone 9282 2295.</p> <p><i>Nikon, Tokyo, Japan</i></p> <p>LINKS Nikon Imaging Center at UCSF / QB3 Wiki: This wiki provides general information about microscopy and microscopy-related science and technology that may be of interest to both the UCSF community and the broader microscopy community. Protocol N-SIM Protocol N-STORM</p>	
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4. Software		
Licenced Software	Imaris (Bitplane)	
	Metamorph	
	Huygens (SVI)	Clayton
	NIS elements	
	CellSens	Clayton
Public Domain (including Image Viewers, and downloadable short term versions)		
	Axiovision (Zeiss)	- download
	FIJI Image Analysis software	- download
	FIJI Image Analysis MANUAL & DEMO Images (courtesy of Cameron Nowel)	
	FV1000 Viewer (Olympus)	- download
	Huygen's deconvolution software free trial (SVI)	- download
	Imaris 30 day trial (Bitplane)	- download
	Irfanview (image viewer, file converter)	http://www.irfanview.com
	Leica LAS AF lite	- download
	NIS elements (Nikon)	- download
	OlyVia for DotSlide (Olympus)	- download
	Zen (Zeiss)	- download
Other Related Resources	Computational & Viz Resources MASSIVE: https://www.massive.org.au/	