





Wednesday 6th March – Day 1 morning

Time	Topic	Speaker
8:30	Registration	
9:00	Welcome	
9:20	Plenary 1 Gail McConnell <i>Strathclyde Institute of Pharmacy and Biomedical Sciences, University of Strathclyde, Scotland, UK</i> Optical imaging with the Mesolens	
	Session 1 : Live Cell Imaging <i>Chairs: Donna Whelan & Oliver Anderson</i>	
10:00	The Mechanobiology of Microtubules: Understanding How Cells Survive Confined Spaces	Sam Stehbens <i>Australian Institute for Bioengineering and Nanotechnology, University of Queensland</i>
10:20	Using two-photon calcium imaging to probe neural encoding during behaviour	Lucy Palmer <i>The Florey</i>
10:40	A multimodal light microscopy approach to visualise microtubule-organelle interactions regulating early embryogenesis	Jessica Greaney <i>ARMI/Monash University</i>
10:50	Visualizing the Immune Synapse to understand disease	Jesse Rudd-Schmidt <i>Peter MacCallum Cancer Centre</i>
11:00	Quantitative live-cell imaging of Candida albicans escape from immune phagocytes	François Olivier <i>Monash University</i>
11:20	Tea Break	
	Session 2 : Imaging in 5D <i>Chairs: Sarah Creed & Emma Gill</i>	
11:40	Intravital 3-photon microscopy for deep tissue imaging of immune responses	Scott Mueller <i>Dept Microbiology and Immunology, Doherty Institute & the University of Melbourne</i>
12:00	Imaging the Metastatic Cascade with Axially Swept Light-Sheet Microscopy	Kevin Dean <i>Southwestern Medical Center, University of Texas, USA</i> 
12:20	How T cells interpret complex migration signals: From tissue to microfluidics	Raymond Qin <i>Walter & Eliza Hall Institute of Medical Research</i>
12:30	In vivo imaging of macrophage retraction fibres and migrasomes in zebrafish	Azadeh Anbarlou <i>Australian Regenerative Medicine Institute/Monash University</i>
12:40	Live cell imaging to characterise migration-dependent membrane domains in macrophages.	Xichun Li <i>IMB, University of Queensland</i>

Wednesday 6th March – Day 1 afternoon

Time	Topic	Speaker
13:00	Sponsor Lightning Sessions ThermoFisher, Leica Microsystems, Evident, Miltenyi Biotec, Nikon, TissueGnostics, GeneWorks, Zeiss	
13:20	Lunch LMA AGM	
	Session 3: Quantitative Microscopy <i>Chairs: Lachlan Whitehead & Frankie Butera</i>	
14:20	Towards Precision Medicine with Systems Microscopy: an imaging-based framework to understand cell heterogeneity in space and time	John Lock <i>School of Biomedical Sciences, University of New South Wales</i>
14:40	Shedding Light on Genome Integrity: Exploring the Vital Role of Nuclear Filamentous Actin (F-actin) with light microscopy	Noa Lamm-Shalem <i>Children's Medical Research Institute</i>
14:50	Apicobasal Rna Asymmetries Regulate Cell Fate In The Early Mouse Embryo	Azelle Hawdon <i>Monash IVF and the Australian Regenerative Medicine Institute, Monash University</i>
15:20	The role of bacterial size and shape in macrophage engulfment of uropathogenic E. coli	Amy Bottomley <i>University of Technology Sydney</i>
15:30	New Approaches to Characterise Goblet Cells and Mucus Properties in the Human Colon	Matthew Rowe <i>MIPS, Monash University</i>
15:50	Tea Break	
	Session 4: Tissue Imaging & Analysis <i>Chairs: Verena Wimmer & Angus Rae</i>	
16:10	In situ single cell analysis of tissue microenvironment in blood cancer	Raymond Yip <i>Walter & Eliza Hall Institute of Medical Research</i>
16:40	Developing a 3D multi-omic map of low grade glioma	Jurgen Kriel <i>Walter & Eliza Hall Institute of Medical Research</i>
16:50	Spatial irregularities in estrogen receptor staining: combined imaging approaches to identify regions of contiguous staining in preneoplastic breast tissue from BRCA2 mutation carriers.	Bianca Capaldo <i>Walter & Eliza Hall Institute of Medical Research</i>
17:00	Cancer treatments cause a permanent reduction in blood multipotent progenitor cells which is accompanied by alterations in bone marrow niche cells that support these progenitors.	Gavin Tjin <i>St Vincent's Institute of Medical Research</i>
17:10	Intravital imaging to investigate fluorescent reporter mice for p53 target genes involved in tumour suppression	Annabella Thomas <i>Walter & Eliza Hall Institute of Medical Research</i>
17:30	Day 1 Concludes	
19:00	Conference Dinner Drew Berry <i>Walter & Eliza Hall Institute of Medical Research</i> Generative, dynamic model of a Lysosome organelle	

Thursday 7th March – Day 2 morning

Time	Topic	Speaker
8:30	Registration	
9:00	Plenary 2 Siân Culley <i>Kings College London, UK</i> The Good, The Bad and The Ugly in Fluorescence Microscopy	
	Session 5 : Advanced Technologies <i>Chairs: Nicholas Condon & Sabrina Lewis</i>	
9:40	Gently Does it: Reducing photodamage in long term volumetric imaging	Avinash Upadhy <i>Centre of Light for Life, School of Biological Sciences, University of Adelaide</i>
10:00	Improving IVF success with advanced photonics	Kylie Dunning <i>Robinson Research Institute, the Institute for Photonics and Advanced Sensing, University of Adelaide</i>
10:20	3D optical sectioning with vibrational infrared photothermal and phase signals (VIPPS)	Emma Gill <i>Swinburne University of Technology</i>
10:30	Developing a Very Large Field-of-View Imaging System for Multiplexed High-Speed Optical Mapping of Action Potentials and Calcium Transients in Live Cells and Tissues	Scott Page <i>Victor Chang Cardiac Institute</i>
10:40	The power of intravital two-photon imaging of Chronic Cranial Windows: insights into T cell dynamics and the influence of the tumour microenvironment in mouse models of glioma.	Kylie Luong <i>Walter & Eliza Hall Institute of Medical Research</i>
11:00	Tea Break	
	Session 6: Image Analysis <i>Chairs: Cameron Nowell & Rishi Ramani</i>	
11:20	Biophysical Tools For Characterizing Ciliary Dynamics In Primary Cells: Towards Personalized Respiratory Disease Diagnostics And Treatment	Elvis Pandzic <i>Katharina Gaus Light Microscopy Facility, University of New South Wales</i>
11:40	An Open-Source Analysis Tool for 3D Cell Biology	Sebastian Amos <i>University of Western Australia & Harry Perkins Institute of Medical Research</i>
12:00	Explore, annotate, and analyse multi-dimensional images in Python with napari	Juan Nunez-Iglesias <i>Monash University</i>
12:10	Development of machine learning based image analysis pipeline for accurate analysis of Malaria parasite proliferation and invasion	Sonja Frölich <i>University Adelaide</i>
12:20	Segment Anything Model based pipeline for annotating and analysing microscopy images of kidney organoids	Thanushi Peiris <i>Murdoch Children's Research Institute</i>

Thursday 7th March – Day 2 afternoon

Time	Topic	Speaker
12:40	NewSpec Outreach Presentation	
12:50	<p style="text-align: center;">Lunch Poster Session (1:00 - 2:30pm)</p>	
<p>EVIDENT Session 7: Super Resolution Microscopy <i>Chairs: Mike Mlodzianoski & Matthew Pittorino</i></p>		
14:40	Highly multiplexed protein imaging from the subcellular to the cell-population scale.	Scott Berry <i>Single Molecule Science, University of New South Wales</i>
15:00	Optical microscopy tools for decoding nanoscale cellular signaling and broadening uptake of super-resolution	Izzy Jayasinghe <i>Single Molecule Science, University of New South Wales</i>
15:20	Application of single molecule imaging and expansion microscopy to study genomic structures	Ashley Rozario <i>La Trobe University</i>
15:30	Tracking the Endosomal Escape of Nanoparticles in Live Cells Using a Triplex-Forming Oligonucleotide	Francesca Cavalieri <i>RMIT</i>
15:40	A 3D STED microscopy approach to investigating megakaryocyte buds.	Imala Alwis <i>Heart Research Institute/Sydney Uni</i>
16:00	Tea Break	
<p style="text-align: center;">Session 8: Microscopy Debates <i>Adjudicator & Chair: Gail McConnell</i></p>		
16:20	<p>Topic #1: Image Analysts are indispensable - until AI came along (<i>Cameron Nowell vs Nick Condon</i>) Topic #2: Microscopy Muses - which is the best organelle to image? (<i>Kelly Rogers vs Donna Whelan</i>) Topic #3: The debate of dynamics - fixed cells are dead cells (<i>Siân Culley vs Kevin Dean</i>)</p>	
17:00	Awards & Closing	

Posters

Poster Number	Researcher Name	Affiliation	Poster Title
1	Alisha Dabb	<i>Malaghan Institute of Medical Research, Wellington, NZ</i>	An Optimised Protocol for Collagen Quantification in the Metastatic Mouse Lung
2	Amy Green	<i>Flinders University</i>	Application of diffusible iodine-based contrast-enhanced computed tomography (diceCT) to study the development of the zika virus infected mouse brain
3	Angus Rae	<i>ANU</i>	Updating a 19th century staining method to optimize imaging of infection threads in <i>Medicago truncatula</i>
4	Antonia Zech	<i>MCRI</i>	Investigation of TRIM55-associated hypertrophic cardiomyopathy in hiPSC-CMs
5	Blake Lane / Vicki Willet	<i>CMRI / Sydney Uni</i>	Filamentous actin facilitates AKT release from promyelocytic leukemia nuclear bodies to promote DNA repair and survival in response to replication stress
6	Claire Marceaux	<i>WEHI</i>	Studying the immune microenvironment in lung cancer patients using spatial multi-omic approaches
7	Daniel Dodoo	<i>UoM</i>	Quantifying the morphology of gangue minerals with advanced SEM technique: A talc case study
8	Darryl Johnson	<i>UoM</i>	In situ multi-element analysis of splenocytes using laser ablation imaging mass spectrometry
9	Daryl Webb	<i>ANU</i>	Can you SRRF on an ONI?
10	Deborah Barkauskas	<i>Garvan</i>	Australian Community for Intravital Microscopy
11	Donna Whelan	<i>La Trobe Uni</i>	Single-molecule super-resolution and particle tracking reveal the role of lipid droplets in the innate immune response.
12	Ellie Cho	<i>UoM</i>	Versatile and bespoke bioimage analysis support in a core facility
13	Frankie Butera	<i>MCRI</i>	High throughput screening to identify compounds for heart regeneration
14	Gabriela Segal	<i>UoM</i>	The caveats of sample mounting for lightsheet comparing Ultramicroscope II and Ultramicroscope Blaze
15	James Burchfield / Jonathan Scavuzzo	<i>UTS</i>	Feedback and Crosstalk in Signal Transduction: Insights into Akt/PI3K Signaling
16	Julissa Sanchez-Velasquez	<i>UoM</i>	Pair correlation microscopy of intracellular protein transport
17	Kalyan Shobhana	<i>UoM</i>	Semi-Automated Confocal Laser Scanning Approach For Phenotypic Screening
18	Kylie Luong	<i>WEHI</i>	Peptide-MHC-I-targeting chimeric antigen receptor (CAR) and T cell fusion constructs (TRuC) T cells form T cell receptor-like immune synapse morphology and cytotoxicity.
19	Laura Carr	<i>Uni Adelaide</i>	Validation of the HALO system as a reliable tool for assessing microglia
20	Laura Rangel	<i>UTS</i>	Using high-fidelity tumoroids and 3D imaging to decipher the pathways of therapy response.
21	Leo Zhang	<i>UTS</i>	AI-powered Live-Cell Imaging Reveals Mitochondrial Remodeling and Multi-organelles Interaction Induced by Mechanical Stimuli
22	Long Kim Huynh	<i>UoM</i>	Investigating cytotome formation in artemisinin resistant Plasmodium parasites by expansion microscopy
23	Lou Fourriere	<i>Bio21</i>	Alteration of the amyloid precursor protein (APP) trafficking by familial Alzheimer's disease mutation featured by quantitative live-cell microscopy
24	Mariyam Murtaza	<i>Griffith Uni</i>	Using unbiased quantitative ptychography imaging to understand human olfactory ecto- mesenchymal cells for neural cell therapy manufacturing.

Posters

Poster Number	Researcher Name	Affiliation	Poster Title
25	Matthew Pittorino	UTS	Shining a Light on the Bacterial Division Complex
26	Matthew Rowe	MIPS/Monash Uni	New Approaches to Characterise Goblet Cells and Mucus Properties in the Human Colon
27	Michael Nesbit	Curtain Uni	High Content Immunofluorescence Imaging and Quantitation of Mouse and Rat Cerebrovascular Dysfunction and Neuroinflammation
28	Nicholas Condon	IMB	Empowering Microscopy Research: From Tools to Trends
29	Nigel Waterhouse	QIMR	Understanding Spatial Cell Biology in Histology Tissue using Immunohistochemistry and Transcriptomic Platforms
30	Oliver Anderson	ARMI/Monash Uni	Microtubule-dependent pluripotent cell plasticity orchestrated by centrosomal and non-centrosomal switching
31	Pattamatta Ushasree	Sydney Uni	Optimization of Mitochondrial Staining in Retinal Explants
32	Peter Davis	ATA Scientific	Multiplication and division: Calculating growth and proliferation at population and single cell level with Liveocyte.
33	Pranita Mhaske	RMIT	Probing Phase Behaviour of Complex Bio-Composites Using 3D Confocal Laser Scanning Microscopy
34	Rachel Uren	WEHI	Live imaging of mitochondrial membrane lipid order during apoptosis
35	Ramon Martinez-Marmol	QLD Brain Institute/UoQ	Tau biomolecular condensates induce nanoscale sequestering: A novel mechanism to control Fyn activity and synaptic function.
36	Raymond Dagastine	UoM	Resonance Imaging Microscopy: Breaking the diffraction limit with visible light
37	Reem Ali Alhulais	Griffith Uni	Quantitative Analysis of Human Colorectal Cancer Samples by Immunohistochemistry for Levels of Cancer Stem Cell Marker Expression
38	Rishi Ramani	UoM	Fluorescence In vivo Confocal Laser Endomicroscopy analysis with Convolutional Neural Networks for the early detection oral potentially malignant disorders and oral cancer
39	Roshan Jaladeen	Peter Mac	Investigating T Cell Development in the Thymic Microenvironment: An In Situ Study
40	Ryan Dorrian	Uni Adelaide	Development of a tissue clearing protocol for the evaluation of cellular and molecular mechanisms following traumatic spinal cord injury
41	Sarah Handcock	The Florey	Imaging analysis of patient derived cortical organoids modelling neurodevelopmental disorders
42	Sofia Alfonso Sánchez	UTS	Confocal Microscopy Reveals the Directional Movement of Mitochondria Upon T Cell activation via Antibody-coated Nanobeads
43	Tanweepriya Das	UoM	Tiny Bright Things Halo Element: Label-free life science samples as you've never seen them before.
44	Timothy Mann	Sydney Uni	Live cell imaging and super resolution imaging to identify cyclic peptide drug entry and mechanism in prostate cancer cells.
45	Wang Cao	WEHI	Unraveling the Role of Microfold (M) Cells in Gut Immunity

Workshops and Events

Events

Date / Time	Event	Location
Tuesday 5 th March – 12:30 pm – 2 pm	Student & ECR Careers Panel	Bio21 Auditorium
Tuesday 5 th March - 5 pm – 8 pm	Welcome Reception	Melbourne Connect
Wednesday 6 th March - 1 pm – 2pm	LMA AGM	Melbourne Connect
Wednesday 6 th March - 7 pm – 11 pm	Conference Dinner	Cargo Hall South Wharf
Thursday 7 th March - 1:00 pm – 2:30 pm	Poster Session	Melbourne Connect

Workshops

Date / Time	Workshop	Location
Tuesday 5 th March 9:30 am - 4 pm	Open source AI image analysis masterclass	Florey Education Room, Ground Floor, Kenneth Myer Building, The Florey
Tuesday 5 th March 1 pm - 4 pm	QuPath Masterclass	Digital Learning Hub (DLH), Level 3, Medical Building, University of Melbourne
Tuesday 5 th March 9 am - 5 pm	Leica Aivia, AI-powered image analysis and interpretation platform	Level 3E CT Room, Walter and Eliza Hall Institute of Medical Research
Friday 8 th March 9:30am-4pm	ZEISS Arivis Pro Image Analysis	Sanderson Room, Level 2 west, Medical Building, University of Melbourne
Friday 8 th March 9:30am-4pm	ZEISS Lattice Structured Illumination Microscopy Demonstration	Biological Optical Microscopy Platform, Level 8, Medical Building, University of Melbourne
Friday 8 th March 9:30am-4:30pm	Leica Stellaris 8 Falcon Demonstration	Level 4E Laboratory, Walter and Eliza Hall Institute of Medical Research
Friday 8 th March 1pm-5pm	Andor/SciTech Imaris Masterclass	Florey Education Room, Ground Floor, Kenneth Myer Building, The Florey
Friday 8 th March 9:30am-5pm	Facility Managers' Workshop	Digital Learning Hub (DLH), Level 3, Medical Building, University of Melbourne

Instrument Demonstrations

Date / Time	Instrument Demonstration	Host	Location
Tuesday 5 th March 9am-12:45pm	UltraMicroscope Blaze	Miltenyi Biotec	Biological Optical Microscopy Platform, Level 8, Medical Building, University of Melbourne
Tuesday 5 th March 9 am - 4 pm	LiveCyte	ATA Scientific	Level 8, Medical Building, University of Melbourne
Tuesday 5 th March 9:30am-4pm	CrestOptics Spinning disk	CrestOptics	Microscopy Facility, Level 4, Kenneth Myer Building, The Florey
Tuesday 5 th March 10:30am – 12:30pm	Phenolmager	Akoya	Level 3C Seminar Room, Walter and Eliza Hall Institute of Medical Research
Tuesday 5 th March 10:30 am - 12 pm	3i AxL-CTLS Demo	3i	Digital Learning Hub (DLH), Level 3, Medical Building, University of Melbourne

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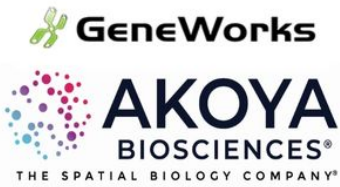
4th National Meeting
March 5 – 8, 2024
Melbourne Connect
www.lma2024.org



Australian Microscopy and
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Miltenyi Biotec



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