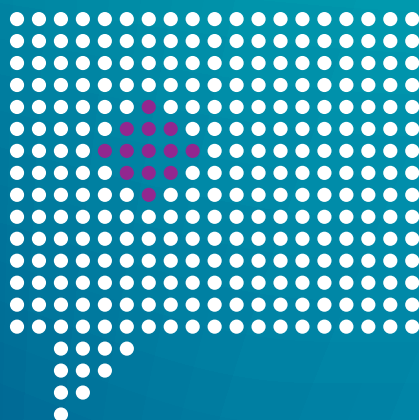


EMBL Australia PhD Course



Hobart 2019



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EMBL Australia acknowledges the generous support of the University of Tasmania and the National Collaborative Research Infrastructure Strategy.

The organising committee would like to thank the Australian Antarctic Division, the Institute for Marine and Antarctic Studies, Bonorong Wildlife Sanctuary, Coherent Scientific, abacus dx and Raven Consulting Group for their contributions to the program.

EMBL Australia would also like to thank:

PhD Course Committee 2019

- ▶ Pirjo Apaja
- ▶ Michelle Boyle
- ▶ Lisa Foa
- ▶ Nadya Glebova
- ▶ Kana Gudan
- ▶ Lydia Kokotos
- ▶ Ville-Petteri Mäkinen
- ▶ Tanya Rogers
- ▶ Phillippa Taberlay
- ▶ Antoine van Oijen
- ▶ Coral Warr

Social Committee 2019

- ▶ Allanna Russell
- ▶ Ming Chen
- ▶ Sueanne Chear
- ▶ Muhammad Ishaq

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Welcome!

Welcome to the sixth annual EMBL Australia PhD Course, and to a wonderful career in research.

The course you're about to take is based on a program from EMBL – the European Molecular Biology Laboratory. Their first-year PhD students start their training together with an immersion course in the full range of life science research. There's an emphasis on developing a curiosity for new ideas and a collaborative spirit.

Over the next two weeks, we'll give you a taste of the latest developments in life science, from structural biology to animal models, developmental genetics to next-gen sequencing, biomedical imaging to science communication, all presented by a terrific faculty of Australian and international scientists.

As we form links between previously unrelated disciplines, we're learning to approach old questions in new ways. There's enormous potential in applying tools, such as bioinformatics or systems biology, to revolutionise the way we do research.

The journey doesn't end here. EMBL Australia is committed to supporting young scientists like you through your training and into a research career.



Each year, we support up to 30 Australian students to visit EMBL laboratories across Europe for training, conferences and collaboration.

With our partners in Australia and overseas, EMBL Australia supports various internships and training courses. And as we set up new research groups across the country and our network grows, so too do the opportunities to network with Australia's brightest young research leaders.

We hope that you will form networks and friendships in the next two weeks that will carry you into your careers.

Welcome to EMBL Australia –
I look forward to meeting you.

A handwritten signature in dark ink, appearing to read 'James Whisstock'. The signature is fluid and stylized, with a long, sweeping underline.

James Whisstock
Scientific Head, EMBL Australia

Monday 24 June 2019

Venue	Lecture Theatre 2, L1, Medical Science Precinct (MSP)
10:00 – 10:30am	Arrivals and registrations
10:30 – 11:30am	Morning tea
11:30 – 11:40am	Welcome Prof James Whisstock Scientific Head, EMBL Australia
11:40 – 11:50am	Assoc Prof Ville-Petteri Mäkinen Group Leader, EMBL Australia, South Australian Health and Medical Research Institute(SAHMRI) & PhD Course Committee Convener. The spirit of the EMBL Australia PhD Course
11:50 – 12:30pm	Prof James Whisstock Scientific Head, EMBL Australia Cryo Electron Microscopy – present and future challenges
12:30 – 1:15pm	Lunch break
1:15 – 2:15pm	Prof Jenny Graves Department of Ecology, Environment and Evolution, School of Life Sciences, La Trobe University Weird animal genomes, sex and the future of men
2:15 – 3:15pm	Prof Peter Gunning School of Medical Sciences, University of New South Wales (UNSW) Anti-cancer drug development: from basic science to clinical lead
3:15 – 3:45pm	Afternoon tea
3:45 – 5:15pm	Three-minute thesis presentations
5:15 – 6:30pm	Opening mixer (student social event)

Tuesday 25 June 2019

Venue	Lecture Theatre 2, L1, MSP
9:00 – 10:20am	Dr Melissa Davis Joint Division Head, Bioinformatics, Walter and Eliza Hall Institute of Medical Research (WEHI) Computational methods for the analysis of molecular phenotypes
10:20 – 11:00am	Dr Liesel Fitzgerald Menzies Institute for Medical Research, University of Tasmania (UTAS) The importance of genetics in patient response to cancer treatments
11:00 – 11:20am	Morning tea
11:20am – 12:00pm	Dr Senthil Arumugam Single Molecule Science, UNSW Molecular Basis of Biological Timekeeping: Concepts & Imaging-based Approaches
12:00 – 12:40pm	Prof Coral Warr Head of Biomedical Sciences, School of Medicine, UTAS How do flies smell? Odorant receptors and olfactory signalling in Drosophila
12:40 – 1:40pm	Lunch break
1:40 – 3:40pm	Parallel Workshops Option 1 – Dr William Connelly School of Medicine, UTAS Introduction to programming in R Room 158/159, L1, MSP Option 2 – Dr Louise Roddam & Dr Fiona Stennard, School of Medicine, UTAS Genotyping and mutation analysis Wet Lab 215, L2, MSP

3:40 – 4:00pm	Afternoon tea
Venue	Lecture Theatre 2, MSP
4:00 – 5:30pm	Three-minute thesis presentations



Wednesday 26 June 2019

Visits to Australian Antarctic Division (AAD) & Institute for Marine and Antarctic Science (IMAS)

9:00am	Pickup from the MSP to travel to Kingston
9:00 – 1:00pm	AAD – talks and tours
1:00 – 2:00pm	Lunch break
2:00pm	Depart for IMAS Taroona
2:30 – 4:30pm	IMAS – talks and tours led by Prof Chris Carter

Thursday 27 June 2019

Venue	Wet Lab 215, L2, MSP
8:30 – 9:00am	Workshop follow-up
Venue	Lecture Theatre 2, L1, MSP
9:00 – 9:40am	Prof David Howells Professor of Neuroscience and Brain Plasticity, UTAS Quality preclinical science
9:40 – 10:20am	Dr C. Glenn Begley CEO, BioCurate 10% of the time it works every time
10:20 – 11:00am	Prof David Vaux Deputy Director, WEHI Researchers behaving badly
11:00 – 11:20am	Morning tea
11:20 – 12:00pm	Panel discussion / Q&A Research integrity and ethics Chair: Prof Ben Canny, School of Medicine, UTAS
12:00 – 12:40pm	Prof Julie Simpson Head of the Biostatistics Unit & Deputy Head of the Melbourne School of Population and Global Health, University of Melbourne. Mathematical and statistical modelling: An integrated powerful tool for extending the lifespan of antimalarial treatments
12:40 – 1:40pm	Lunch break
Venue	Lab 207/208, L2, MSP
1:40 – 3:40pm	Prof Julie Simpson & Dr David Price Biostatistics Unit, UniMelb Workshop: Visualising Data: the good, the bad and the error bar
3:40 – 4:00pm	Afternoon tea

Venue	Lecture Theatre 2, L2, MSP
4:00 – 5:30pm	Three-minute thesis presentations
Friday 28 June 2019	
Venue	Lecture Theatre 2, L1, MSP
9:00 – 9:40am	Assoc Prof Ville-Petteri Mäkinen Group Leader, EMBL Australia, SAHMRI Pathway and network analyses in Systems Genetics
9:40 – 10:20am	Assoc Prof Pirjo Apaja Group Leader, EMBL Australia, SAHMRI Protein networks in health and disease
10:20 – 10:40am	Morning tea
10:40 – 11:20am	Prof Ross Cagan Department of Developmental and Regenerative Biology Director, Center for Personalised Cancer Therapeutics, Icahn School of Medicine at Mount Sinai Personalized Medicine: A Cancer Overview
11:20am – 12:00pm	Dr Matt Piper Head, Nutritional Physiology and Ageing Research Group, Monash University The nutritional determinants of ageing in Drosophila
12:00 – 1:00pm	Lunch break
Venue	Room 207/208, L2, MSP
1:00 – 4:00pm	Dr Mirana Ramialison Group Leader, Developmental System Biology, Australian Regenerative Medicine Institute (ARMI) Workshop: Genome browsing: exploring gene expression, regulation and function

Monday 1 July 2019

Venue	Room 207/208, L2, MSP
9:00 – 9:40am	Assoc Prof Geraldine O'Neill Group Leader, Focal Adhesion Biology, The Children's Hospital at Westmead Cancer invasion: form follows function
9:40 – 10:20am	Dr Brad Sutherland Senior Research Fellow Biomedical Sciences, School of Medicine, UTAS Neurovascular coupling, controlling the brain's energy supply and its dysfunction in disease
10:20 – 10:40am	Morning tea
10:40 – 11:20am	Prof Lisa Foa Head of Research & Acting Head, School of Medicine, UTAS Is a motile endoplasmic reticulum necessary for neuronal development?
11:20 – 12:00pm	Assoc Prof Roger Pocock Anatomy & Developmental Biology, Monash University Using <i>Caenorhabditis elegans</i> to understand nervous system development and function
12:00 – 1:00pm	Lunch break
1:00 – 4:00pm	Parallel Workshops Option 1 – Dr Robert Gasperini Senior Research Fellow, School of Medicine, UTAS Advanced Imaging Workshop
Venue	Room 207/208, L2, MSP Option 2 – Assoc Prof Ville-Petteri Mäkinen Group Leader, EMBL Australia, SAHMRI Primer for multi-variable subgrouping of complex life science data
Venue	Room 158/159, L1, MSP

Tuesday 2 July 2019

Venue	Room 158/159, L1, MSP
9:00 – 9:40am	Prof Kathryn Burdon Menzies Institute for Medical Research, UTAS Discovering genetic causes of eye disease to improve diagnosis, prevention and treatment
9:40 – 10:20am	Dr Phillippa Taberlay Senior Research Fellow, School of Medicine, UTAS Mapping epigenomes
10:20 – 10:40am	Morning tea
Venue	Room 207/208, L2, MSP
10:50 – 11:50am	Dr Kate Patterson Senior Visual Science, Communications Office, Garvan Institute Artistry vs Accuracy in Visual Science Communication
11:20 – 11:30am	Break
Venue	Room 207/208, L2, MSP
11:30am – 1:30pm	Dr Kate Patterson Garvan Institute Workshop: Harnessing Illustrator for publication-worthy figures
1:30 – 2:30pm	Lunch break
Venue	Lecture Theatre 2, L1, MSP
2:30 – 3:10pm	Prof Alex Hewitt Menzies Institute for Medical Research, UTAS Genetic Profiling for Blinding Eye Diseases

3:10 – 3:40pm

Dr Michael Dobbie
CEO, Australian Phenomics Network
[Enabling the discovery of gene function and
understanding of genetic drivers of disease](#)

3:40 – 4:00pm

Mr Kenji Fujimura – Co-convenor, EAPS 2019
PhD Student, Peter MacCallum Cancer Centre
[EMBL Australia Postgraduate Symposium \(EAPS\)
2019/2020](#)



Wednesday 3 July 2019

A devilish problem: The multi-disciplinary response to devil facial tumour disease

Venue	Lecture Theatre 1, L1, MSP
9:00 – 9:30am	Assoc Prof Bruce Lyons School of Medicine, UTAS Dancing with the devil – infectious cancers in an iconic Tasmanian marsupial
9:30 – 10:00am	Dr Andy Flies Menzies Institute for Medical Research, UTAS FAST immunology for a slow killer
10:00 – 10:30am	Dr Amanda Patchett Menzies Institute for Medical Research, UTAS Devilomics
10:30 – 10:50am	Break
10:50 – 11:20am	Dr Richard Wilson Central Science Laboratory, UTAS Finding biomarkers for DFTD – a Devil of a challenge
11:20 – 11:40 am	Dr Carolyn Hogg Australasian Wildlife Genomics Group, University of Sydney Game of Clones: Devil sex, violence and disease
11:40am – 12:20pm	Dr David Hamilton School of Natural Sciences, UTAS Social networks, behaviour and transmission of DFTD
12:20 – 1:00pm	Lunch break
1:00 – 5:00pm	Trip to Bonorong Wildlife Sanctuary Includes tour by Greg Irons

Thursday 4 July 2019

Venue	Lecture Theatre 2, L1, MSP
9:00 – 9:40am	Prof Peter Dearden Head of Genomics Aotearoa, University of Otago Plasticity, genome structure and evolution
9:40 – 10:20am	Prof Steven Smith Professor of Plant Genetics and Biochemistry, School of Natural Sciences, UTAS Genetic control of plant architecture
10:20 – 10:40am	Morning tea
10:40 – 11:20am	Prof Tracey Dickson Associate Dean – Research College of Health and Medicine, UTAS Animal models of neurodegenerative disease – the pros and cons of the transgenic approach
11:20am – 12:00pm	Dr Rebekah McWhirter Senior Research Fellow, Centre for Law and Genetics, Faculty of Law, UTAS Genetics and the Law: Science Outside the Silo
12:00 – 12:40pm	Prof Dianne Nicol Professor of Law and Director of the Centre for Law and Genetics, Faculty of Law, UTAS Getting innovative health technologies into the clinic: ethical, legal and social perspectives
12:40 – 1:30pm	Lunch break
Venue	Room 158/159, L1, MSP
1:30 – 2:30pm	Panel discussion / Q&A – Genetics and Society Chair: Prof Coral Warr, Head of Biomedical Sciences, School of Medicine, UTAS
Venue	Hobart Function and Conference Centre
3:30 – 5:30 pm	Poster session

5:30 – 6:30pm	Cocktail function and light dinner
Friday 5 July 2019	
Venue	Lecture Theatre 2, L1, MSP
9:00 – 9:50am	Scientia Prof Kat Gaus Single Molecule Science, UNSW, EMBL Australia UNSW Representative Single molecule imaging of receptor signalling
9:50 – 10:40am	Prof Peter Currie Director of Research ARMI, EMBL Australia Monash University Representative Understanding regeneration in living systems
10:40 – 11:00am	Morning tea
11:00 – 11:40am	Assoc Prof Ethan Scott School of Biomedical Sciences, UQ Sensory Processing in Larval Zebrafish: Perspectives from Whole-brain Calcium Imaging
11:40am – 12:30pm	Prizes and closing remarks
12:30 – 1:30pm	Farewell lunch
1:30 pm	Departure



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