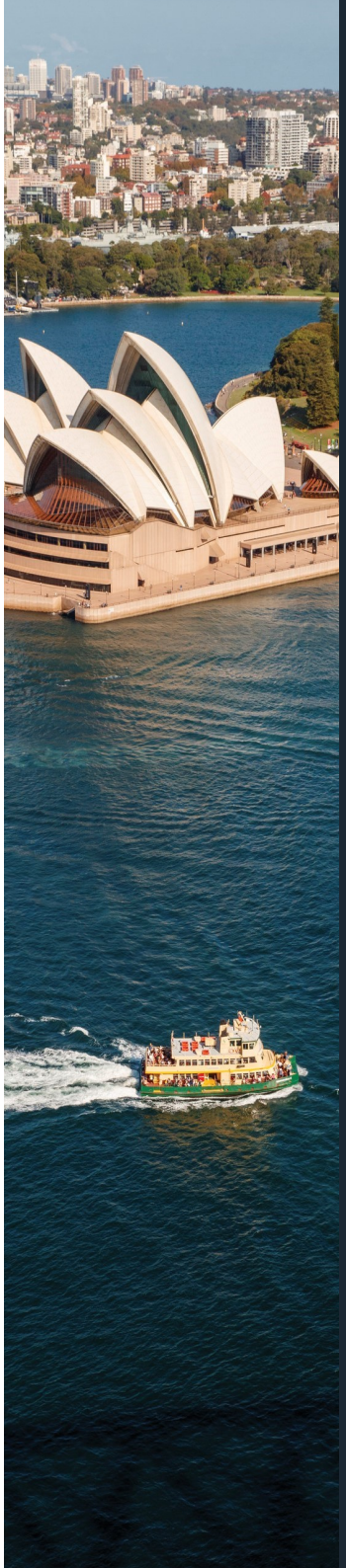
AuPS 2018 Scientific Meeting

Sydney, NSW
25 -28 November 2018

Australian Physiological Society AuPS

THE UNIVERSITY OF SYDNEY



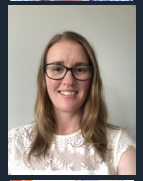
Local Organising Committee

Chair:

Assoc Prof Bill Phillips
University of Sydney

Members:

Assoc Prof Andrew Moorhouse
UNSW Sydney



Dr Melissa Cameron
University of Sydney

Prof Stewart Head
Western Sydney University

Dr Trevor Lewis
UNSW Sydney

Image: Bridge climb, Destination NSW

Cover Images:

- Anderson Stewart Building, New Law Buildings: University of Sydney
- Mrs Macquarie's Chair sunset, Vivid Festival Darling Harbour: Destination NSW
- Vivid Festival, Opera House, Manly Ferry, Harbour Bridge: R Ross

Welcome

On behalf of the Australian Physiological Society (AuPS), we are delighted to welcome you to the 2018 Annual scientific Meeting hosted by The University of Sydney, Camperdown campus. The meeting runs from Sunday November 25 to Wednesday November 28 and will feature:

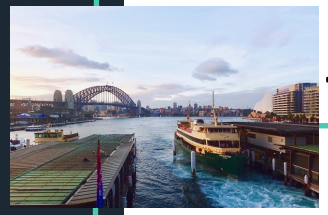
- Eleven symposia across the physiological and biophysical sciences
- Nine invited international speakers
- The physiological education symposium
- The AuPS Invited lecturer by Prof Liva Hool, University of Western Australia
- The AuPS Invited Plenary Lecturer by Prof Walter Boron, Case Western Reserve University, Cleveland Ohio
- The AuPS Michael Roberts Education Prize Lecturer by A/Prof Glenn Wadley, Deakin University
- Oral and poster free communication sessions with awards for the best student and post-doctoral presentations.

The plenary lecture on Sunday evening (5pm) by Prof Liva Hool is followed by our welcome reception: drinks and finger food in the courtyard of the historic Anderson Stuart Building. It will feature a wine tasting from David Allen's vineyard. The annual conference dinner on Tuesday night at the glitzy 'Dockside' Darling Harbour should not be missed. The student and early career researcher mixer on Monday evening is at the Rose Hotel Chippendale, a much-loved local student haunt.

We, the local organising committee, warmly welcome you to AuPS 2018.

Bill

Assoc Prof Bill Phillips
Chair of AuPS Local Organizing Committee
william.phillips@sydney.edu.au



Transport

Camperdown Campus

Eastern Ave, Camperdown NSW 2006

The University of Sydney has two main entrances: one is just past Victoria Park where Broadway becomes Parramatta Road, and the other is on City Road at the corner of Butlin Avenue. The AuPS conference will be held at the 'New Law' Building

Public Transport: Buses and Trains

The nearest suburban railway stations are Redfern (approx. 15 min walk via Abercrombie Street) or Central station (~20 min walk along City Road and George street).

Buses to and from Central station to the campus are frequent from both Parramatta Road (disembark at Derwent Street) and City Road (disembark at Butlin Avenue). We suggest catching either the 423, 426, 428 or M30 buses heading west from Railway Square at Central Station.

To travel on public transport in Sydney you will need an Opal Card (smart card). These can be purchased at the airport, newsagents, kiosks and vending machines at stations. Visit the Opal website for more information. https://www.opal.com.au/

By Car: Parking

On-campus parking can be quite tight and operates on a pay and display basis ($24/day flat fee: look for a ticket machine). We suggest you first try the Shepherd Street car park ($4 per hour, or $24 flat rate valid to 6am next morning). Please be careful to park only where casual parking is permitted and to make sure your ticket is clearly visible on the dashboard.

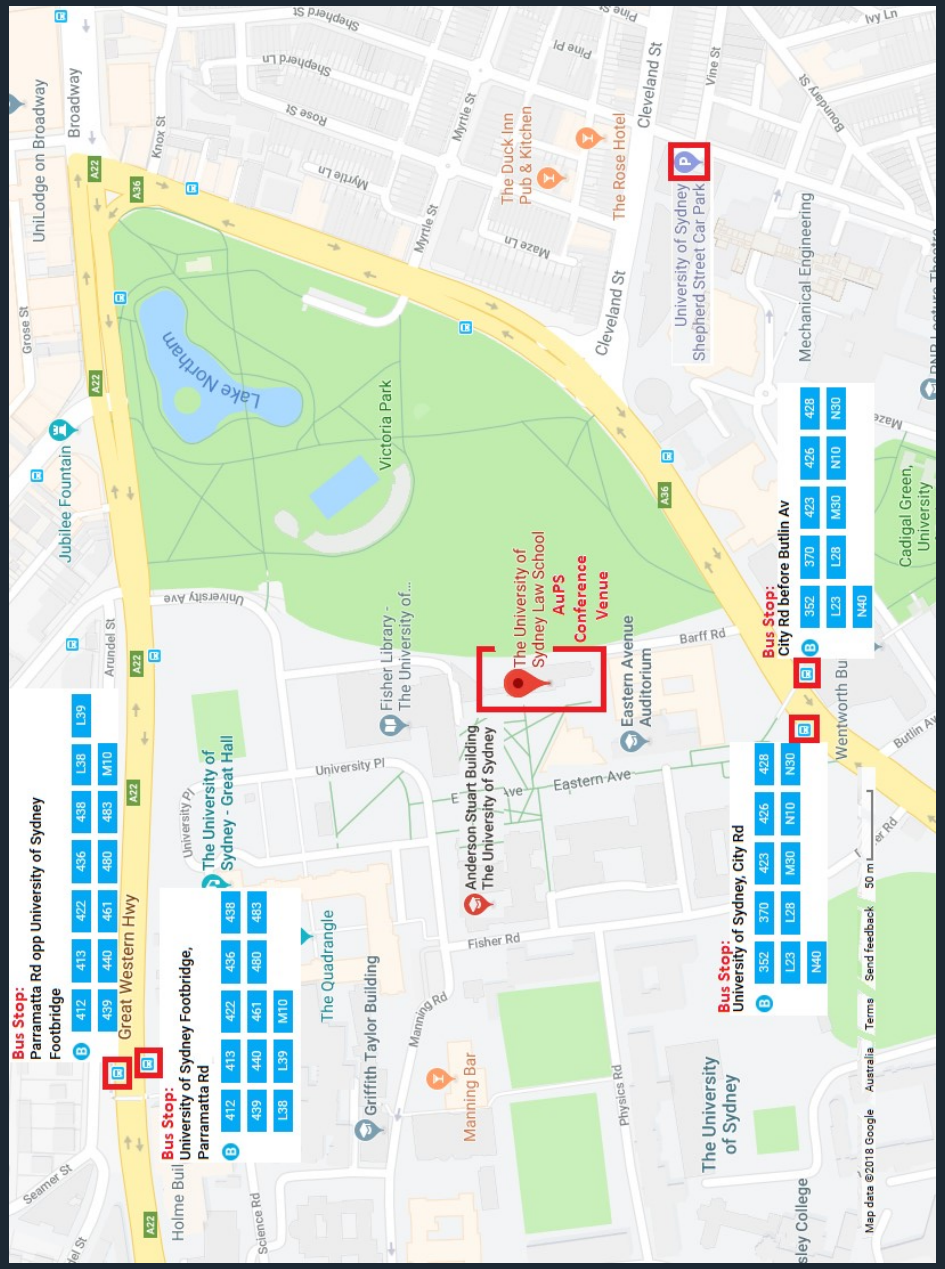
By Taxi:

Call Taxis Combined on 133 300. Ask the driver to for the 'University of Sydney Law School' on the Camperdown campus. Heading out you can readily hail a taxi from City Rd, just two minutes walk south of the Law School

Image: Circular Quay, R Ross. Image: Google Maps

Camperdown Campus

For further information visit Transport NSW:
https://transportnsw.info/



Conference information: General

Image: New Law Building, University of Sydney

EVENT ASSISTANCE

Should you require any assistance during the conference please visit the registration desk (open 4pm-6pm Sunday; 8-9am Mon-Wed) in foyer area outside LT 101 of the New Law Building.

NAME BADGES

Please wear your name badge at all times, as it is your entry into all sessions and enables security to identify you as a conference delegate.

CATERING

Lunch, Morning and Afternoon Tea will be available in the foyer of the New Law Building in the foyer surrounding LT 101.

TRADE DISPLAYS & PASSPORT COMPETITION

In your registration package you will receive a passport card. Registrants who have their passport card stamped at all four Trade displays will go into the draw for a prize, to be drawn at the AGM on Wednesday. Lets get behind our knowledgeable and helpful sponsors: ADI, APAC, Austral and SDR who generously support AuPS. The trade displays are located in the New Law Building Foyer (see venue map on pg 11).

PRESENTATIONS

Oral Presentations:

All speakers must upload their presentations at least 30min before the start of their session. Files may be loaded between 8am—5pm each day.

Please drag and drop your Powerpoint file into the named folder for your session on the PC desk top in the lecture theater where you are presenting. We recommend that you check any embedded videos or animated files at this time to ensure the file format is supported.

Poster Presentations:

Posters should be mounted in their allocated space on Monday morning and remain on display for the duration of the conference.

The poster session will be on Monday 1-3pm. Authors with odd numbered poster boards should be in attendance at their poster to answer questions for one hour, beginning at 1pm. Those with even numbered posters should be in attendance beginning at 2pm. **Please be prepared to give a brief (2 minute) oral presentation** of your poster.

IT SUPPORT

IT help for presenters: If you require assistance with IT at the conference, please approach staff at the registration desk or contact the IT Service Desk team (Mon-Fri: 8am to 6pm):
Email: audivisal.service@sydney.edu.au
Ph. +61 2 9351 2000

WIFI ACCESS

WiFi is available to registrants: select 'UniSydney-guest' and enter

Username: aups_2018. Ask at the registration desk for the password. Alternatively you may access wifi via Eduroam.

Useful contacts & facilities

Emergency assistance:
000 (police, fire, ambulance)

Campus Security (24h):
(02) 9351 3333

Closest hospital:
Royal Prince Alfred
Ph: +61 2 9515 6111

Gyms and swimming pools:
Victoria Park pool (5min walk east) and the University Sports and Aquatic Centre (7min walk south).

Conference information: Venue

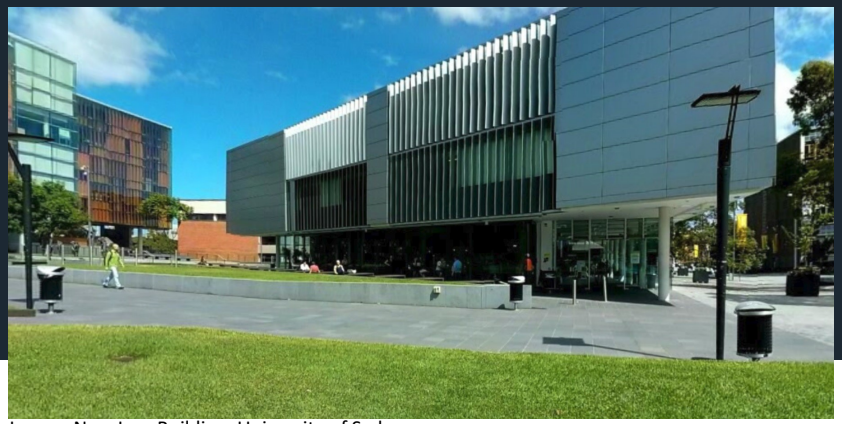


Image: New Law Building, University of Sydney

Registration and Welcome Reception

Registration will take place in the foyer area of the New Law Building surrounding LT 101 (open 4pm-6pm Sunday; 8-9am Mon-Wed). The Welcome Reception following the Invited Lecture on Sunday evening will be held in the Anderson Stuart Building.

Presentations: Lectures, Symposia and Free Communications

Presentations will take place in the New Law Building or adjacent Carslaw Building in one of the following lecture Theatres (as indicated in the programme):

- New Law LT 101
- New Law LT 106
- Carslaw LT 173

Speakers should upload their Powerpoint presentations in the assigned lecture theatre at least 30min before their session is due to start. (There is no separate speaker preparation room).

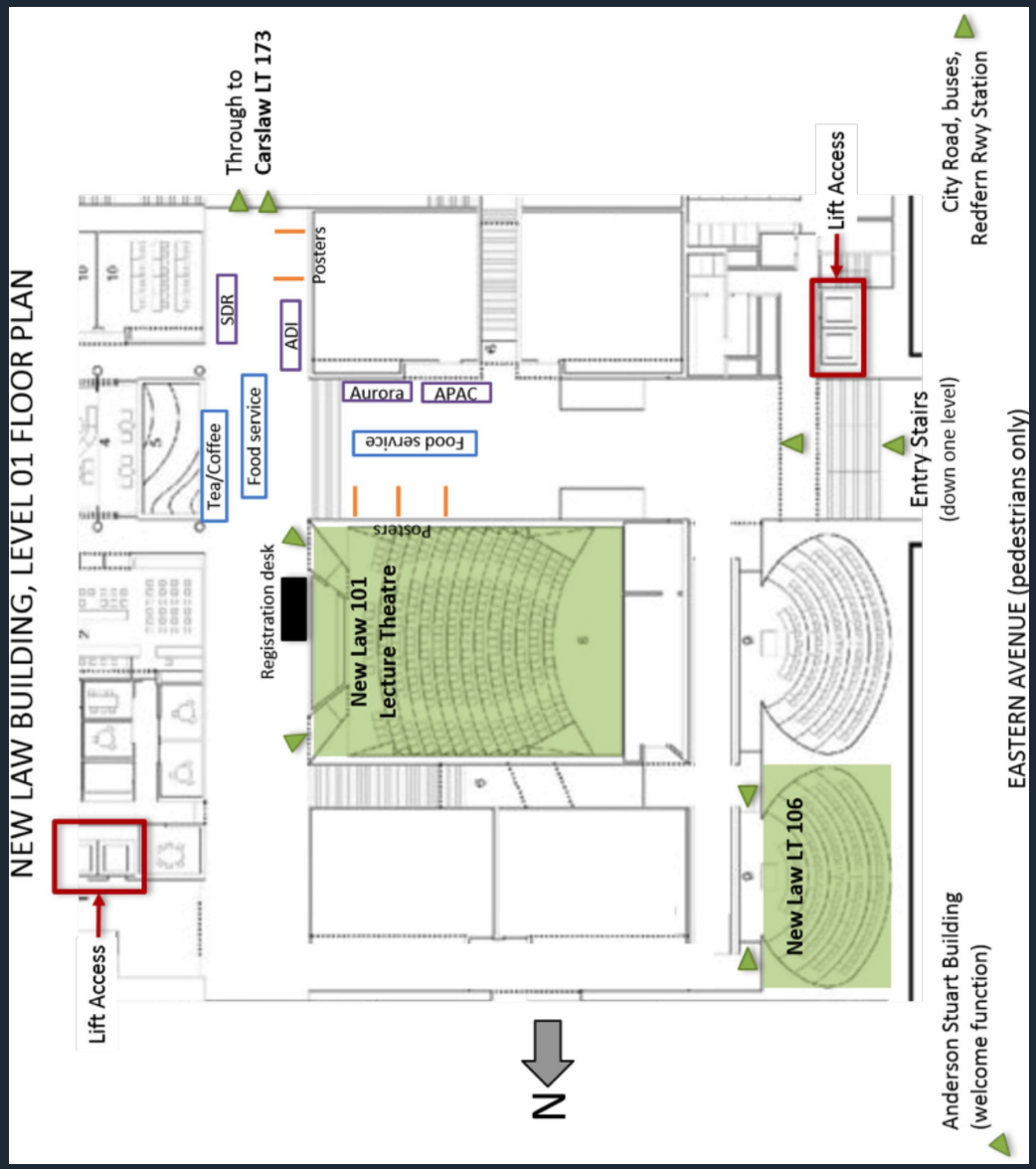
Workshops and Discussions

Workshops will be held in the William (Liam) Burke Seminar Room (Rm N248) Anderson Stuart Bldg (as indicated in the programme).

Posters, Trade Displays & Catering

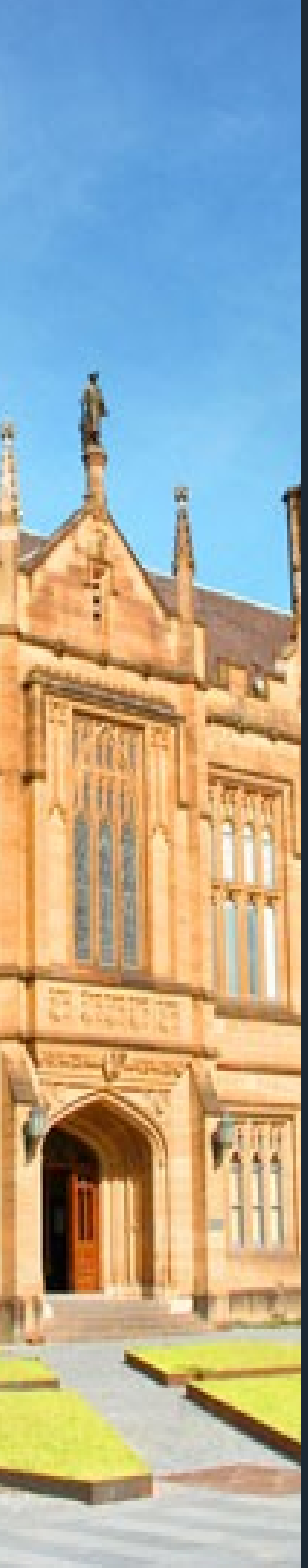
Posters, trade displays, coffee/tea and lunch will be in the foyer of the New Law Building surrounding LT 101.

Floor Plan



2018 CONFERENCE PROGRAMME

Australian Physiological Society AuPS



Sunday 25th November

4pm **Registration opens**
Law building Foyer, outside Law 101

5pm: **AuPS Invited Lecture: Prof Livia Hool**
Law 101 Lecture Theatre

6pm **Welcome Reception**
Anderson Stuart Building

Welcome Reception

The Welcome Reception features Prof Hool's Invited Lecture in Lecture Theatre 101, in the New Law Building. This lecture will be followed by a cocktail reception in the courtyard of the Anderson Stuart Building. The reception will commence at 6pm and features a wine tasting from David Allen's vineyard.

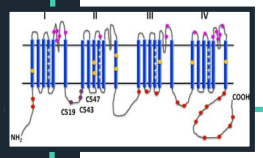
The Anderson Stuart Building

Anderson Stuart was the driving force that oversaw the establishment and construction of the first Medical School in Australia in 1883. The Anderson Stuart building (where the Discipline of Anatomy and Histology is located) was the first permanent building to house a Medical School in Australia and is commonly referred to as 'The Old Medical School' building.

The Anderson Stuart Building is a superb example of neo-gothic architecture located across from the New Law lecture theatre and adjacent to the main quadrangle.

The building, carved out of beautiful golden Sydney sandstone - exhibits many gargoyles, superb stained glass windows and carvings. It was designed by James Barnet, with additions by Walter Liberty Vernon and then Leslie Wilkinson. It is on the Heritage list and has recently undergone substantial renovations.

Reference and Image: University of Sydney. For more information visit http://sydney.edu.au/medicine/anatomy/about/anderson-stuart.php



AuPS INVITED LECTURE

5pm, Sunday 25th November

AuPS INVITED LECTURE:

Taming the beast: targeting the L-type calcium channel to reduce cardiovascular morbidity and mortality

Prof Livia Hool
University of Western Australia

Prof Livia Hool completed her PhD in cellular electrophysiology at Royal North Shore Hospital, Sydney in 1995. She then undertook 2 years post-doctoral research as recipient of an American Heart Association Postdoctoral Fellowship in the School of Medicine, Case Western Reserve University, Cleveland, Ohio. In 1998 she was awarded a Peter Doherty Fellowship from NHMRC and relocated to The University of Western Australia where she established the Cardiovascular Electrophysiology Laboratory in the Physiology Department. She has received continuous national competitive funding since establishing the laboratory and previously held a NHMRC Career Development Award and an ARC Future Fellowship. She is currently recipient of an NHMRC Senior Research Fellowship, Faculty-at-Large of the Victor Chang Cardiac Research Institute in Sydney, President of the International Society for Heart Research Australasian Section and Founding Director and General Secretary of the Australian Cardiovascular Alliance. The work of her laboratory is concerned with understanding the role that the L-type Ca^{2+} channel plays in mediating alterations in calcium and metabolic activity in the heart leading to sudden cardiac death and heart failure. This is studied at the level of purified channel protein, the single cell, the whole heart *ex vivo* and in murine models of cardiomyopathy strategically directed towards building basic knowledge, method development, discovery, and translation.

Abstract 1P

Image: Cardiac L-type Ca^{2+} channel protein
Muralidharan et al. Clin Exp Pharmacol Physiol 2017; 44:46-54

Monday 26th November

Monday, 26th November 2018

Law 101		Law 106		Carslaw 173	
	Symposium: Ion channel function Chair: David Adams		**Symposium: Shift work: beneficial effects of exercise and the timing of meals** Chair: Glenn McConell		**Free communications: Exercise physiology** Chairs: Michells Keske & Aaron Petersen
8:30	**D.J. Beech**: Piezo1 mechano-sensor in vascular physiology and disease 2P	8:30	**J.A. Hawley**: Timing is everything: exercise & nutrition as 'Zeitgebers' that influence circadian biology 6P	8:30	**A.C. Petersen**: Effects of hypoxia on skeletal muscle molecular adaptations to heavy resistance training 10P
				8:45	**H. Dillon**: MicroRNA expression in female skeletal muscle mitochondria following a single bout of endurance exercise 11P
9:00	**K. Poole**: Mechanoelectrical transduction at the cell-substrate interface 3P	9:00	**G.K. McConell**: Can exercise overcome the negative metabolic effects of shift work? 7P	9:00	**S. Green**: Initial orthostatic hypotension: effects of tilt speed and hand position on finger arterial blood pressure during head-up tilt 12P
9:22	**C.D. Cox**: A TRiP through the mechanical world of TRPP channels 4P			9:15	**S. Alexander**: Investigating exosomal microRNA and lipidomic profile in response to acute endurance exercise in males and 13P
		9:30	**S. Banks**: Altering the timing of meals to improve metabolic and cognitive performance outcomes in shift workers 8P	9:30	**S.G. Wette**: Expression of putative mechanosensing signalling proteins in skeletal muscle after power resistance exercise and feeding in resistance-trained 14P
9:44	**I. Vetter**: Ion channels in pain pathways: insight from venom peptides 5P			9:45	**J. Silver**: MiRNA expression in skeletal muscle mitochondria following an acute bout of endurance exercise 15P
10:06	**Steve Petrou** - No abstract provided	10:00	**M.L. Jackson**: Impact of shift work on sleep, alertness and cognitive function– can "splitting" sleep reduce the adverse effects of night shift work? 9P		
10:30	**Morning Tea (foyer, new law building, outside LT 101)**				

Law 101		Law 106		Carslaw 173	
	Symposium: Metabolic implications of vascular dysfunction Chair: Renée Ross		**Free communications: Skeletal muscle and disease** Chairs: Bradley Launikonis & Zoe White		**Free communications: Regulating cellular function** Chairs: Kayte Jenkin & Grigori Rychkov
11:00	**M.A. Keske**: Skeletal muscle microvascular blood flow and insulin action 16P	11:00	**K.N. Roeszler**: ACTN3 genotype influences androgen receptor signalling and skeletal muscle mass regulation in health and disease 20P	11:00	**G.Y. Rychkov**: The mechanism of Orai channels dependence on intracellular pH 27P
		11:15	**A.L. Pascoe**: Reproducibility and ethical concerns of Notexin as an acute animal injury model 21P	11:15	**F.H. Zhou**: TRPM2 channels contribute to liver ischemia and reperfusion injury 28P
11:30	**S.J. Blackwood**: The physiological importance of flowmotion 19P	11:30	**J.P. Hardee**: Therapeutic potential of slow muscle programming by low-frequency stimulation in dystrophic mice 22P	11:30	**K.A. Jenkin**: Human and non-human intestinal NHE3: Human NHE3 demonstrates increased susceptibility to inhibition and unique regulation by ubiquitin 29P
		11:45	**B.P. Frankish**: Dot blotting for fibre type identification of single muscle fibres: a fast, reliable and sample-sparing method 23P	11:45	**A.J. Trewin**: Mitochondrial ROS generated at the complex-II matrix or intermembrane space microdomain has distinct effects on redox signalling and stress sensitivity in *C. elegans* 30P
12:00	**D. Premilovac**: Metabolic-vascular coupling: pericytes regulate capillary blood flow 18P	12:00	**Z. White**: Cholesterol lowering prevents ambulatory dysfunction in muscular dystrophy 24P	12:00	**M.S. Cameron**: Different vasodilator mechanisms in intermediate- and small-sized arteries from the hindlimb vasculature of the toad, *Rhinella marina* 31P
		12:15	**C.R. Lamboley**: Movements of calcium in skeletal muscle fibres in the absence of calsequestrin 25P	12:15	**R.I. Siriwardhana**: New insights into the regulation of uterine contractions in human labour 32P
12:30	**C.M. Kolka**: The skeletal muscle endothelium: the barrier within 17P	12:30	**D.P. Singh**: Mechanisms of Ca^{2+} release in human and toad skeletal muscle in response to halothane 26P	12:30	**J.S.M. Cuffe**: Gestational diabetes mellitus is associated with an altered placental glucocorticoid receptor isoform profile, increased human placental lactogen mRNA expression and placental glycogen accumulation 33P
13:00 - 15:00	**Lunch and Posters (Foyer area outside Law 101)**				

MONDAY 26TH NOVEMBER

	13:00-14:00: Odd numbered poster authors in attendance. 14:00-15:00: Even numbered poster authors in attendance	
1	**T.V. Lakeland**: Exploring how compartment-specific changes in NAD biosynthesis influence the response to endurance training	34P
2	**L. Parker**: Acute continuous moderate-intensity exercise, but not low-volume high-intensity interval exercise, attenuates postprandial suppression of circulating osteocalcin in young overweight and obese adults	35P
3	**G. Allsopp**: The effect of hypoxia on older adults' muscle strength and mass responses to resistance training	36P
4	**S.I. Head**: Evidence from a mouse model that high levels of circulating dihydrotestosterone increases skeletal muscle mass and force production in isolated fast- and slow-twitch muscles in males and females but reduces recovery from fatigue in females	37P
5	**S. Landen**: Sex-specific epigenetic adaptations to endurance exercise	38P
6	**B.S. Launikonis**: Determination of heat production in human skeletal muscle from measurements of basal Ca^{2+} movements	39P
7	**C.Y. Tan**: Miniature inhibitory postsynaptic current in cerebellar Purkinje cells of old dystrophic *mdx* mice	40P
8	**R. Koopman**: Choline as a nutritional intervention to alleviate the dystrophic pathology in mdx mice	41P
9	**J.L. Huang**: Elevated MuSK expression restores dystrophin-associated proteins to the sarcolemma of mdx muscle fibres	42P
10	**A. Meizoso-Huesca**: Free fatty acid receptor 4 activation induces lysophosphatidic acid receptor 1 (LPA1) desensitization independent of LPA1 internalization and heterodimerization	43P
11	**D. Ge**: Evidence of neuromuscular junction remodelling during periods of prolonged muscle inactivity in amphibians	44P
12	**B.T. Tepper**: The role of ADAMTS5 in extracellular matrix remodelling in diet-induced insulin resistance	45P
13	**D. Hiam**: The influence of GWAS-based gene variants on the bone-remodelling marker Osteocalcin in the Gene SMART study	46P
14	**J.Q. Zhang**: Post-myocardial infarction exercise training improved calcium sensitivity and cardiac function	47P
15	**M.C. Renton**: The role of protein kinase D in cardiac glucose metabolism in diabetic cardiomyopathy	48P
16	**A.C. Betik**: Use of vibration platforms to increase total limb and skeletal muscle microvascular blood flow	49P
17	**T.V. Murphy**: Effect of gestational diabetes on endothelium-dependent vasodilation of human myometrial and omental arteries	50P
18	**K. Roberts-Thomson**: Family history of Type 2 diabetes alters muscle capillary perfusion after a meal	51P
19	**M.G. Morales-Scholz**: Divergent autophagy responses in the liver and skeletal muscle of diabetic (db/db) mice	52P
15:00	**Afternoon Tea**	

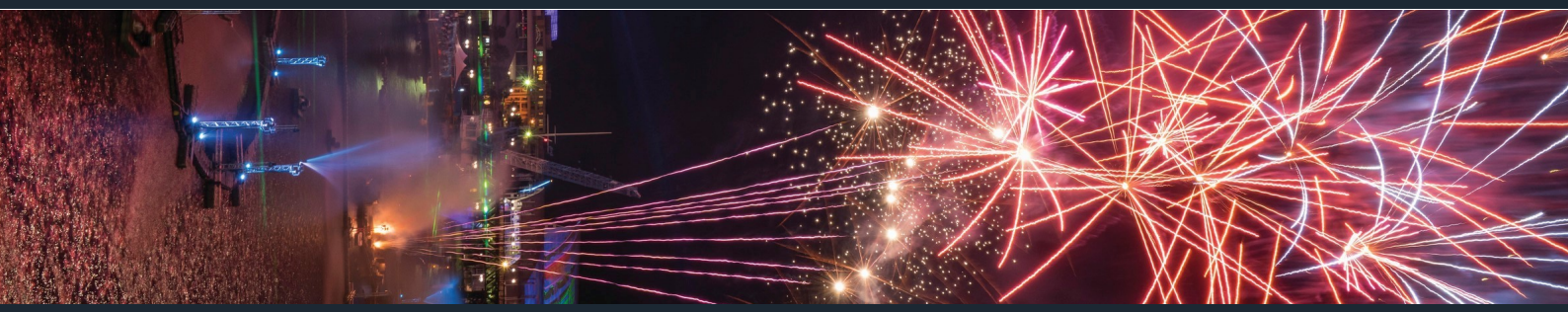


Image: Vivid Sydney 2016, Destination NSW

ECR WORKSHOP

5:30PM MONDAY 26TH NOVEMBER

The William (Liam) Burke Seminar Room (Rm N248)
Anderson Stuart Bldg.

The ECR workshop is intended for junior researchers (honours, PhD and up to 10/15 years post-PhD).

This year Dr Enzo Porrello and Dr Nir Eynon will talk about their career progression from PhD, to post-doc, to group leader's. The workshop will be followed at 7pm by the Stu-dents/ECR mixer at the Rose Hotel in nearby Chippen-dale

For more information contact Giselle Allsopp (gallsopp@deakin.edu.au) or Richard Mills (richard.mills@uq.edu.au)

MONDAY 26TH NOVEMBER

	Law 101		Law 106	
	Symposium: Metabolic and signalling dysregulation in cardiac stress Chair: Kim Mellor		**Free communications: Skeletal muscle and metabolism** Chairs: Adam Rose & Kirsten Howlett	
15:30	**E.D. Abel**: Novel mechanisms linking metabolic signaling and mitochondria to the pathophysiology of heart failure	53P	**X. Ren**: MMP2 and MMP9 in wild-type and mdx mice with taurine supplementation	57P
15:45			**K.I. Watt**: A metabolic role for the Hippo signalling pathway effector Yap in adult skeletal muscle fibres	58P
16:00	**L.M.D. Delbridge**: Molecular mechanisms of cardiac metabolic stress pathology	54P	**R.J. Mills**: Development of a human skeletal micro muscle platform with pacing capabilities	59P
16:15			**B.D. Perry**: Metformin divergently regulates the unfolded protein response and reduces protein synthesis and autophagy in palmitate-treated myotubes	60P
16:30	**R.R. Lamberts**: Autonomic dysregulation in the diabetic heart	55P	**A.B. Addinsall**: Inflammatory regulation by Selenoprotein S is not responsible for the loss of muscle performance	61P
16:45			**S.J. Blackwood**: Isoproterenol enhances force production in mouse glycolytic and oxidative muscle *via* separate mechanisms	62P
17:00	**J.L.J. Coleman**: Orphan G protein-coupled receptor GPR37L1 and the cardiovascular system: variability across methods and models	56P	**A.J. Rose**: Liver one-carbon metabolism affects the integrated stress response and systemic metabolic control	63P
17:30	**Student and ECR Workshop** **Location: The William (Liam) Burke Seminar Room (Rm N248) Anderson Stuart Bldg.**			
19:00	**Student/ECR mixer** **Location: The Rose Hotel, Chippendale**			

STUDENT AND ECR MIXER

The Student and ECR function will follow the ECR workshop on Monday.

Date: **Monday, 26th November**
Time: **7pm**
Location: **The Rose Hotel**
52-54 Cleveland St, Chippendale
Dress: **Casual**
Transport: **A 7-minute walk from the conference venue.**

The student and early career researcher mixer is on Monday evening following the ECR workshop. The Rose Hotel, is a great venue and has long been a favourite for Friday night lab drinks.

The Rose Hotel is ~7 minute walk east of the conference venue at 52-54 Cleveland St, Chippendale - Please meet the organisers at the ECR workshop at the William Burke Seminar Room (Rm N248 in the Anderson Stuart Bldg.) should you wish to walk with a group. Just be careful when you step back out onto busy Cleveland street after the mixer - We recommend catching public transport rather than driving.

Contact: Giselle Allsopp (gallsopp@deakin.edu.au) or Richard Mills (richard.mills@uq.edu.au)

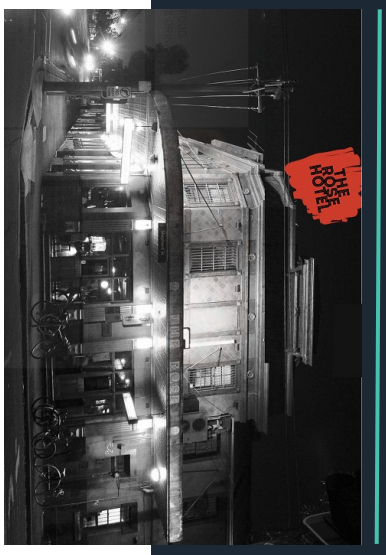
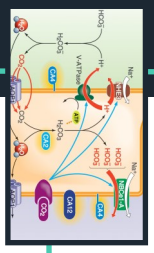


Image: The Rose Hotel www.therosehotel.com.au

Tuesday 27th November

Tuesday, 27th November 2018					
Law 101		**Law 106**		**Carslaw 173**	
	Symposium: The genome and epigenome of the exercising skeletal muscle Chair: Nir Eynon		**Free Communications: Cardiac Physiology** Chairs: James Hudson & Richard Mills		**Free communications: Neural mechanisms** Chair: Gary Housley
8:30	**N. Eynon**: What do we know on the genome of the exercising muscle? 64P	8:30	**M.E. Reichelt**: Cardiomyocyte ErbB4 receptors are essential for neonatal cardiac hypertrophy and growth, and also maintain cardiac function in adult 68P	8:30	**J.M.E. Cederholm**: Noise-induced hearing adaptation kinetics of the 'cochlear amplifier' maps to $P2X_2$ receptor-dependent auditory brainstem response 74P
		8:45	**L.J. Daniels**: Glycogen dysregulation and cardiomyocyte dysfunction in a rat model of type 1 diabetes 69P	8:45	**N.L. Absalom**: Concatenated $GABA_A$ receptors reveal diverse molecular phenotype of epilepsy-causing mutations 75P
9:00	**J.T. Seto**: New insights into the influence of *ACTN3* on muscle performance 65P	9:00	**J.E. Hudson**: Functional screening in human cardiac organoids for new regenerative therapeutics 70P	9:00	**W.D. Phillips**: Cannabinoids increase synaptic vesicle filling at the neuromuscular junction 76P
		9:15	**S.P. Wells**: Acute oestradiol slows conduction and prolongs action potential duration in the left atrium, but not in cardiomyocyte cultures 71P	9:15	**P.G. Noakes**: The neuromuscular junction - the hidden player in MND: studies from MND model mice and MND patients 77P
9:30	**J.M. Craig**: Developing epigenetic biomarkers - applications for exercise 66P	9:30	**N.A. Beard**: Characterization of RyR2 function in failing human atria 72P	9:30	**L.G. Hall**: The role of the Alzheimer's disease protein amyloid beta 42 in heart disease 78P
		9:45	**E.J. Chan**: STBD1 regulation of myocardial glycogen content 73P	9:45	
10:00	**S. Voisin**: Racing against the (epigenetic) clock: exercise training slows down epigenetic aging in skeletal muscle 67P				
10:30	**Morning Tea (foyer, new law building, outside LT 101)**				



AuPS PLENARY LECTURE

2PM, Tuesday 27th November

AuPS PLENARY LECTURE:
Common Principles across Physiological Systems

Prof Walter Boron

Case Western Reserve University

Cleveland, Ohio USA.

Prof Walter Boron is the David N. and Inez Myers/Antonio Scarpa Professor & Chairman of the Department of Physiology and Biophysics in the School of Medicine at Case Western Reserve University.

Walter completed his MD and PhD in the Department of Physiology and Biophysics at Washington University. He was appointed as a postdoctoral Fellow at Yale University School of Medicine where he joined the academic staff in 1980 rising to Professor (1987) and Chair (1989) of the Department of Cellular and Molecular Physiology at Yale, before being appointed to his current position at Case Western in 2007. Walter's research focus is in pH regulation and gas and ion transport in renal epithelia and brain, and with his collaborators have contributed significant discoveries in these areas. In recognition of these achievements he has been honoured with numerous awards including the Homer Smith Award from the American Society of Nephrology (2005), election to the National Academy of Medicine (2014), election as President (1999-2000) and Fellow (2015) of the American Physiology Society and recently (2010-2017) served as the Secretary-General of the International Union of Physiological Sciences. Walter has also had a distinguished career as a Physiology educator, most notably as contributing author and Co-Editor (with Emile Boulpaep) of *Medical Physiology. A Cellular and Molecular Approach* (Elsevier), now in its 3rd Edition.

Abstract 112P

Image: Bicarbonate handling by the proximal tubule
https://physiology.case.edu/people/faculty/walter-f-boron/

Tuesday 27th November

	Law 101		Law 106	
	Symposium: The structural basis of electrical signalling: latest developments in the structural analysis of ion channels and transporters Chair: Jamie Vandenberg		**Symposium: Maternal Influences on fetal physiology** Chair: Deanne Hryciw	
11:00	**J. Yang**: Structural basis of function and regulation of endolysosomal TRPML channels	79P	**D.M. Sloboda**: Maternal microbial and metabolic influences on programming reproductive and metabolic outcomes	84P
11:30	**G.F. King**: Cryo-EM structure of a gating modifier–sodium channel complex reveals the complex molecular basis of allosteric modulation of channel gating	80P	**Margaret J. Morris**: Maternal effects on offspring metabolism and behaviour – impact of diet and stress	85P
11:52	**C. Lau**: Understanding the mechanisms of hERG channel gating and drug inhibition using cryo-EM	81P	12:00 **H. Chen**: Impact of maternal cigarette smoke exposure on brain health, lessons learned from a mouse model	86P
12:14	**J.M. Gulbis**: Investigating the role of conformational change of the pore in Kir channel gating	82P		
12:36	**R.M. Ryan**: The split personality of glutamate transporters: a chloride channel and a transporter	83P	12:30 **D.H. Hryciw**: Elevated maternal linoleic acid reduces male fetal survival	87P
13:00	**Lunch (Foyer area outside Law 101)**			
14:00	**Plenary Lecture:** **W.F. Boron**: Common principles across physiological systems	112P		
15:00	**Afternoon Tea**			
	Symposium: Rigor and reproducibility in physiological research Chairs: Bill Phillips & Séverine Lamon			
15:30	**David Vaux** - No abstract provided			
16:00	**S.C. Gandevia**: Reproducibility: why you should be worried?	88P		
16:30	**M.D. Grounds**: Building rigour in exploratory rodent studies of neuromuscular disease	89P		
17:00	**Panel discussion**			
19:00	**Conference Dinner** **Location: Dockside. Cockle Bay Wharf, Wheat Rd, Darling Harbour**			

Rigor and Reproducibility in Physiological Research is the important focus of a symposium at AuPS 2018. Ensuring reproducibility in preclinical research, in the face of many publicised failures, is a challenge for all experimental physiologists. A discussion paper entitled '*Show me some discipline*' (available on the AuPS website), by Prof Bill Phillips and Dr Severine Lamon provides an introduction and some context to this thorny challenge.

Conference Dinner

Date: Tuesday 27th November
Time: 7pm
Location: Dockside Restaurant, Cockle Bay Wharf, Darling Harbour
Dress: Lounge Suit

The annual conference dinner on the Tuesday night will be held at The Dockside Restaurant at Cockle Bay Wharf. The three course sit-down dinner (included in your registration) should not be missed (additional tickets may be purchased by following the registration process). Canapes and drinks will begin from 7pm, with dinner served from 7:30pm.

Cockle Bay is an iconic Sydney location, on the Eastern Promenade of Darling Harbour. The Dockside restaurant is on the Balcony (or 1st floor) Level. Wheelchair access is available via the lifts and ramps from the Promenade, the Pyrmont Bridge and the Darling Park Car Park.

Please make your own way to Dockside (transport information is available on the AuPS website). It is walking distance from CBD hotels or you can take a taxi to Cockle Bay Wharf, Wheat Rd, Sydney.

The doors will open from 6:30pm. If you arrive early you may also wish to stroll along the wharf and enjoy the play of light on the water.

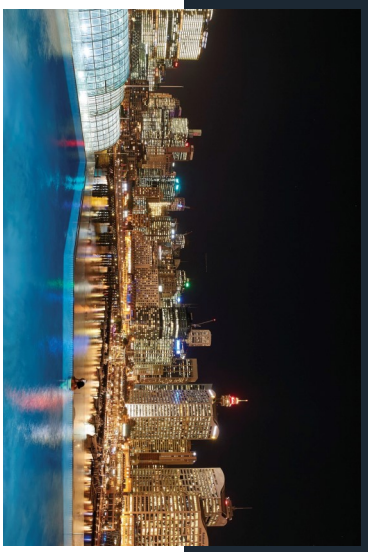
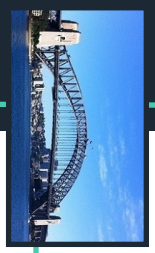


Image: Darling Harbour, Destination NSW

Wednesday 28th November

	Law 101		Law 106	
	Symposium: Enhancing student engagement: flipping, quizzes, study tools, condensed units and Chairs: Julia Choate & Yvonne Hodgson		**Symposium: Immunometabolism and disease** Chairs: James Ryall	
8:30	**K. Tangalakis**: Revolutionizing first year: an innovative block model to improve student engagement and success	90P	**S.L. Masters**: NLRP1 exacerbates colitis-associated cancer through IL-18, with effects on butyrate producing Clostridiales	95P
8:54	**S. Flecknoe**: Activating the classroom to enhance student engagement and learning	91P	**K.G.R. Quinlan**: Eosinophils in adipose tissue energy expenditure	96P
9:18	**J. Choate**: Engaging biomedical students with their course *via* in-curriculum professional development	92P	**K. Schroder**: New insights into inflammasome signalling and inhibition	97P
			M.A. Febbraio: The novel designer cytokine IC7Fc protects against obesity-induced metabolic disease	98P
9:42	**K. Colthorpe**: Biomedical science students' active engagement in study tool creation and use	93P		
10:06	**A.J. Moorhouse**: Medical students engaging in physiology *via* a national quiz competition	94P	**J.D. Schertzer**: Microbiota components that improve endocrine control of metabolism in obesity and ageing	99P
10:30	**Morning Tea (foyer, new law building, outside LT 101)**			



Michael Roberts Prize Lecture

1:30pm, Wednesday 28th November

Assoc Prof Glenn Wadley
Deakin University

AUPS Michael Roberts Eduction Prize Lecture, 2017 Winner

A/Prof Glenn Wadley completed his PhD in exercise physiology at Deakin University in 2004. From 2004-2009 he held a full-time postdoctoral position that was funded by NHMRC project grants in the Department of Physiology at The University of Melbourne. In April 2009, he was appointed as a full-time research and teaching academic in the School of Exercise and Nutrition Sciences (SENS)at Deakin University. He teaches undergraduate exercise physiology and metabolism and has implemented active learning approaches to improve student learning and engagement. He has also held teaching and leadership roles in research training (Faculty of Health Honours Course Director 2011-2015; SENS PhD Coordinator 2016-2017). In 2018 he was appointed associate Head of School (Research). He was recognized in 2016 with an Australian Award for University Teaching - Citation for Outstanding Contributions to Student Learning.

He is an exercise physiologist with 20 years' experience investigating the impact of exercise and nutritional interventions on glucose metabolism and more recently on cardiac growth. His research utilizes both human and animal models to investigate molecular mechanisms and whole-body physiology with clinically relevant health outcomes.

Abstract 111P

Image: Sydney Harbour Bridge, R Ross

Wednesday 28th November

Law 101			Law 106		
	Symposium: Adipose tissue - physiology and pathology Chair: Lea Delbridge			**Education free communications**	
11:00	**M.J. Watt**: Identification of metabolically distinct adipocyte progenitor cells in human adipose tissues	101P	11:00	**L. Ainscough**: 'Let's not keep it private': Schooling background and student preparedness transitioning into university	103P
			11:15	**S. Orgeig**: Improved student engagement and outcomes using a multi-purpose online platform – an alternative option for the one-on one tutor in large classes	104P
11:30	**W.C. Boon**: Effects of oestrogens on adipose tissues	113P	11:30	**H. Nagaraja**: Matching teaching strategies to learning style preferences in an undergraduate physiology module	105P
			11:45	**S. Lamon**: Evaluating the redevelopment of a physiology online postgraduate unit	106P
12:00	**J.R. Bell**: Pericardial adipose accumulation and cardiac pathology – mechanistic insights	102P	12:00	**V. Hasa**: Working as partners: a student-staff collaboration in the redesign of a major biomedical capstone course	107P
			12:15	**C. Young**: Lessons learnt from redesigning a major biomedical capstone course	108P
			12:30	**S.J. Etherington**: Tertiary physiology educators' perspectives on internationalisation of physiology	109P
			12:45	**D.H. Hryciw**: Work integrated learning in the science curriculum	110P
13:00	**Lunch (Foyer area outside Law 101)**				
13:30	**Michael Roberts Education Prize Lecture:** **G.D. Wadley**: Adventures in flipping the classroom	111P			
14:00			**14:00**	**AGM and award of prizes**	
15:00	**Education Workshop: MCQs and SAQs in Australian Physiology Education**				
17:00	**Location: The William (Liam) Burke Seminar Room (Rm N248) Anderson Stuart Bldg.**				

Image: Mrs Macquarie's Chair sunset, Destination NSW

Education Workshop

3pm, Wednesday 28th November

The William (Liam) Burke Seminar Room (Rm N248), Anderson Stuart Bldg.

AUPS Education Workshop

MCQs in physiology, Current status and a national database?

The education workshop will focus on multiple choice and short answer assessment items in our undergraduate physiology teaching. The first half will discuss the way we use these assessment items, including some mini showcase presentations around current practises and online platforms to present these assessments. The second half will focus on the concept of a National Physiology Question Database, the key processes, use and benefits of such a resource. All those interested in Physiology and Biomedical Science Education are welcome to attend and participate in this workshop.

For those interested, there will be a Physiology educators dinner following the workshop.

Facilitators:
Julia Choate (julia.choate@monash.edu) and Andrew Moorhouse (a.moorhouse@unsw.edu.au)

For further information contact Julia Choate: julia.choate@monash.edu

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