THE AUSTRALIAN PHYSIOLOGICAL SOCIETY

60TH DIAMOND JUBILEE CONFERENCE

21-24 Nov 2021

Gold Coast, Qld

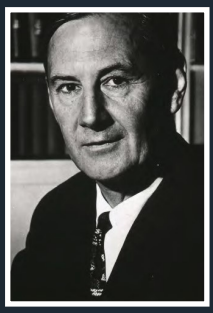
Australian Physiological Society

Griffith UNIVERSITY

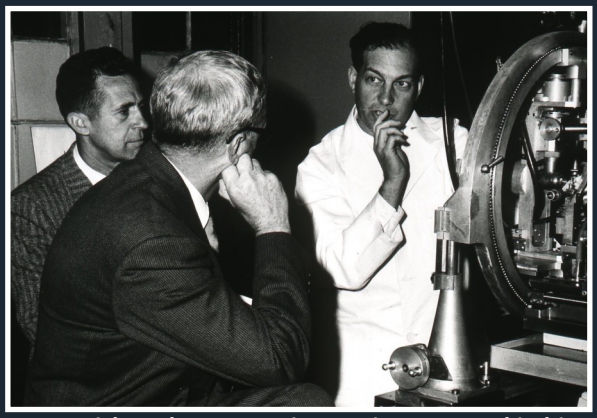
THE AUSTRALIAN PHYSIOLOGICAL SOCIETY

60TH DIAMOND JUBILEE CONFERENCE

Over 26-28 May 1960, 126 physiologists and pharmacologists attended a meeting in the Department of Physiology, University of Sydney at which 84 scientific papers were read. At the meeting, those present were invited to consider the form to be taken by the proposed society and to consider the draft constitution. P.O. Bishop, head of the host Department, took the chair and W.V. Macfarlane acted as secretary. The name of the society chosen at this meeting was the Australian Physiological Society.



Victor Macfarlane, elected Secretary of APS, Inaugural Meeting of APS, Sydney 1960



Peter Bishop demonstrating equipment used in his studies of the visual system, at the Inaugural Meeting at the University of Sydney in 1960

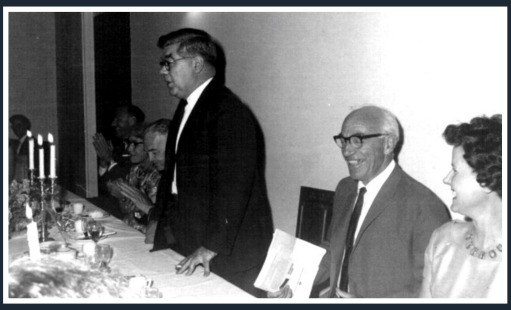
Audience in a session at the Inaugural Meeting in 1960, University of Sydney

Image: Thank you to Roger Dapney for these photos

1961: Molly Holman & Geoff Burnstock

1964 Monash Meeting:
Anne Sefton and Judith Neal

1964 Monash Meeting:
Ann Donovan, ?, Sandra Rees and ?



1966: Roy "Pansy" Wright giving the after dinner speech at the University of Melbourne meeting. Sir John Eccles on his left.

1968 Canberra:
Jack Eccles, Martha Vogt and Jack Coombs

1969: Mark Rowe, Barry Sessle & John

1968: Mollie Holman, Laurie Geffen & Rod Westerman

1969: Paul Korner and Bob Whelan

1972: Left to right: Steve Redman, Peter Gage and unknown person at the cocktail party for the Regional

1978: Archie McIntyre, Jim McLeod & Jim Lance

APPS Dinner Sydney 1977:L to R: Helen Drennen (ANU), Dirk van Helden (UNSW), Belinda Walker (Monash), David Adams (UNSW), Nancy Grant (USyd), Ken Takeda (UNSW), Susan Dawe and Dr. Alan Bretag (South Australian Institute of Technology/ UniSA), Owen Hamill (UNSW).

1971: Canberra meeting:
Jack Coombs and Steve Redman

1971 Canberra meeting:
Bill Levick, Bob Porter & Ray Muir

1977 Hobart meeting:

1977 Hobart meeting:

Akos György, ?, Trefor Morgan, Graham Boyd, Bruce Scoggins & John Young

A new logo for the Society was introduced in July 2004

2013 Geelong meeting: Previous AuPS secretaries: David Saint (2003-2007), Robyn Murphy (2010-2013), Rick Lang (1999-

Photo from 2014 (Brisbane): AK McIntyre Prize Winners: Gordon Lynch (1995), Kate Murphy (2011), James Bell (2012), Karen Gibson (1997-joint), Mark Hargraves (1994), Derik Steyn (2014), James Ryall (2008), Robyn Murphy (2010-joint), Matthew Watt (2004), Paul Gregorevic (2006), Bradley Launikonis (2005).

2015 Hobart Meeting, AuPS Presidents: David Allen (2010 -2013) and David Adams (2005-2009)

2016 Adelaide Meeting: Angela Dulhunty (awarded AuPS Honorary membership) & Graham Lamb

Photo from 2017 (Melbourne):
Previous Michael Roberts Award Winners (right) from left to right:
Yvonne Hodgson (2011), David Saint (2012), Kathy Tangalakis (2016), Glenn Wadley (2017), Deanne Skelly (2014), Julia Choate (2015), and Kay Colthorpe (2013).

2017 Melbourne Meeting: Council Dinner

2019 Canberra Meeting,
AuPS Presidents: Gordon Lynch (2018-2020), Graham (2014-2017), Lamb, Robyn Murphy (2021-present)

PowerLabC

ADINSTRUMENTS

High-performance data acquisition hardware
Re-engineered for unparalleled flexibility

Modular system

Powerful and portable

Analog compatible

Digital framework for the future

Want to learn more?

Join us at the ADInstruments AuPS Products Presentation

1:30 pm on Tuesday 23rd November

(prior to the poster finalists session)

to learn about PowerLab C and C Series,
plus our other exciting new product releases!

adinstruments.com/powerlabc

APAC SCIENTIFIC

Cardiovascular | Pharmacology | Physiology | Behaviour | Cancer Biology | Respiratory

We are passionate about offering the top solutions for research and providing excellent support. We exclusively represent leading scientific brands in Australia and New Zealand.

DMT

- Wire & pressure myographs
- Horizontal organ baths

OXFORD OPTRONIX

- Dissolved oxygen (pO_2) & laser doppler blood flow
- Cell colony counter
- HypoxyLab

INDUS INSTRUMENTS

- Doppler Flow Velocity (non-invasive)
- Rodent Surgical Monitor

we INCORPORATED

- Robust small animal ventilators
- Gas analyzers

transonic

- Ultrasonic flow measurement
- Solid state blood pressure catheters

ugo basile

Leading devices

- Pain & inflammation
- Behavioural studies

apacscientific.com

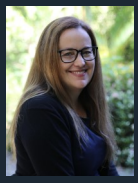
Local Organising Committee

Chair:

Deanne Hryciw,
Griffith University

Members:

Olivia Holland
Griffith University



Melissa Reichelt
University of Queensland

Linlin Ma
Griffith University

aups.org.au

@AuPhysiolSoc

Image Left: Destination Gold Coast, Thor Elias Engelstad

Cover Images: Destination Gold Coast

- Main Beach
- Broadbeach
- Surfers Paradise Beach
- Home of the Arts Park

Welcome

On behalf of the Australian Physiological Society (AuPS), we welcome you to the 2021 meeting, hosted by Griffith University, located in the heart of beautiful Gold Coast (Sunday November 21 to Wednesday November 24). The 60th Diamond Jubilee Conference will be one to remember, whether you are attending at the Griffith University Southport Campus, one of our dynamic hubs or virtually. This event is a celebration of the history of the society, and an event which will showcase cutting edge Physiology research and learning and teaching, both Nationally and Internationally.

The conference features:

- Nine symposia across the physiological sciences.
- Eleven international speakers.
- The physiological education symposium: Core Concepts in Physiology Education: Assessments and Curricula Activities.
- Oral and poster free communication sessions with awards for student and post-doctoral presentations.
- AuPS Invited Lectur by Prof Matt Watt (University of Melbourne)
- AuPS Plenary Lectur by Prof David Adams (University of Wollongong)
- AuPS Michael Roberts Lecturers by Assoc Prof Andrew Moorhouse (UNSW) and Dr Charles Sevigny (University of Melbourne)
- A historical symposium focused on the evolution of the Australian Physiological Society, presented by , Jack Carmody, Roger Dampney, Angela Dulhunty and Judith Whitworth.

The welcome reception on the Sunday night features the historical symposia with key honorary members of the society, followed by a welcome reception of drinks and canapes. The annual conference dinner on the Tuesday night will be held at Skypoint, located in the heart of Surfers Paradise, and will be an event to be remembered. The student and early career researcher mixer on Monday evening promises to be a terrific social event.

Each of the hubs promises to be a fantastic way to interact with your fellow Physiologists in these unprecedented times.

We look forward to welcoming you to the historical AuPS 60th Diamond Jubilee Conference.

Deanne Hryciw

Assoc Prof Deanne Hryciw
School of Environment and Science

Transport

https://www.griffith.edu.au/transport

Gold Coast Campus

Parklands Drive, Southport

Public Transport: Light Rail

https://ridetheg.com.au/

The best option to travel to campus is the light rail "G:Link". We recommend you disembark at the ***Gold Coase University Hospital*** stop. From here walk via University Dr or Alumni Dr to building G03 (~1 min walk).

Find out more about the Gold Coast's tram network, pricing, frequency and download the My G: app for real time tram tracking.

Public Transport: Bus

https://www.surfside.com.au/gold-coast

Alternatively there is Public transport buses operated by Surfside Buslines. Disembark at the ***Gold Coast University Hospital*** stop. From here walk via University Dr or Alumni Dr to building G03 (~1 min walk)

By Car: Parking

https://www.griffith.edu.au/transport/parking

On-campus parking can be quite tight and Casuall parking rates apply. Payment can be made via the PayStay App which allows you to pay directly from your phone. Note that you will need to identify the zone you are in, with the eight-digit zone codes located on the campus parking maps and on car park signage. Visit the website ahead of time for information on parking maps, zones, time limits and fees.

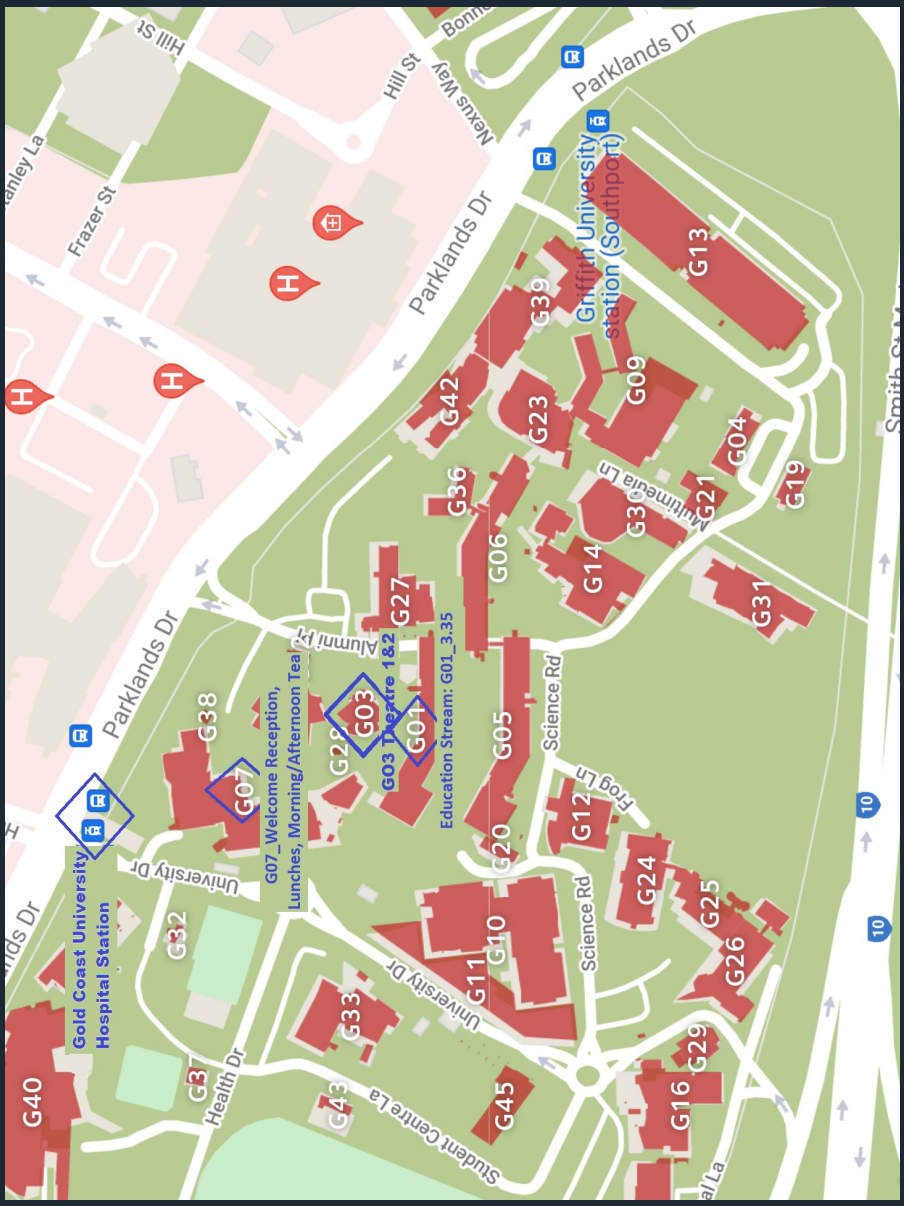
By Taxi:

Call Taxis Combined on 133 300 or you can order an Uber. Ask the driver to for the Griffith University, Gold Coast Campus—University Drive.

Image: Griffith University

Gold Coast Campus

For further information visit https://www.griffith.edu.au



Conference information

Registration and Event Assistance

You can register at the conference from 4pm on Sunday at the reception desk in the foyer area of G03 lecture theatre 1 & 2 or from Monday morning at your hub location. Should you require any assistance during the conference please visit the registration desk or contact your hub leader.

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.

Gold Coast Attendees:

Welcome Reception & Catering

The Welcome Reception, Lunch, Morning and Afternoon Tea are in building G07

Presentations: Lectures, Symposia and Free Communications

Presentations will take place in G03 lecture theatre 1 & 2. These theatres are on the ground floor.

Physiology Education Stream

The Education stream will be held via the online platform. Check your email for your unique log-in information. If attending the Gold Coast, live presentations will be from G01, room 3.35 on level 3.

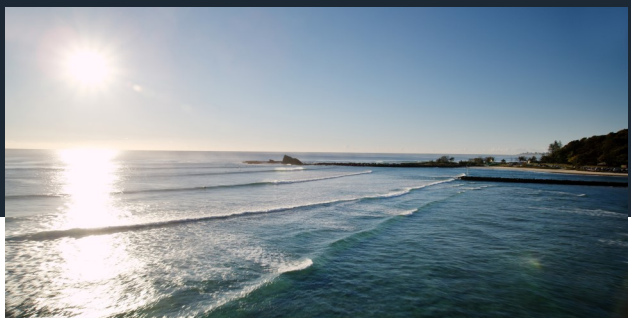
IT SUPPORT

IT help for presenters: If you require assistance with IT at the conference, please approach staff at the registration desk

Campus Security (24h): 1800 800 707

Image: Griffith University

Conference Information



Hub attendees:

There are conference hubs in Melbourne, Sydney, Hobart, Adelaide, Perth and Canberra. Keep an eye on your email—your hub leader will communicate information specific to your location.

A note that all times in the program are AEST Gold Coast.

Hub location	Hub Contacts	
WA (Perth)	Erin Lloyd (UWA)	Erin.lloyd@research.uwa.edu.au
VIC (Melbourne)	Nolan Hoffman (ACU) Cassandra Smith (VU)	Nolan.Hoffman@acu.edu.au Cassandra.Smith@live.vu.edu.au
TAS (Hobart)	Renee Ross (UTAS)	Renee.Ross@utas.edu.au
SA (Adelaide)	Kelsi Dodds (Flinders Uni) Sam Henderson (Adelaide Uni) Saeed Nourmahammadi (Adelaide Uni)	Kelsi.Dodds@flinders.edu.au Sam.Henderson@adelaide.edu.au Saeed.Nourmohammadi@adelaide.edu.au
NSW (Sydney)	Melissa Cameron (Uni Syd) Fred von Wegner (UNSW)	Melissa.Cameron@sydney.edu.au f.vonwegner@unsw.edu.au
ACT (Canberra)	Stephen Fairweather (ANU)	Stephen.Fairweather@anu.edu.au

Image: Destination Gold Coast

Oral Presentations

Presenters at GC and Melbourne Hubs

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.

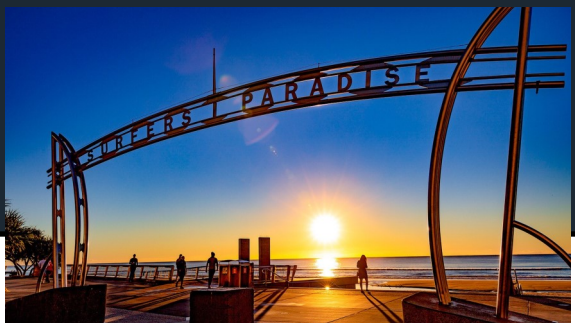
Presenters at Hubs

Presenters at hubs other than the GC or Melbourne will pre-record their presentations and this will be streamed. In some cases, a live presentation may be possible —if this is relevant to your hub, you will be contacted via email.

Q&A Sessions

There will be time for Q&A after each presentation. This will be facilitated by live AV links to each conference hub, and via the chat function offered through the online

Image: Griffith University



Poster Presentations

Poster Presentations:

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

Poster Session—Monday 1pm

Presentations: Every poster presentation will have an associated 3min vimeo that will be available for all conference delegates to view via the online platform. In addition, there will be a poster session ('live') at the Gold Coast and at each hub on Monday at 1pm. Presenters, please stand by your printed poster during this time to answer any questions.

Poster Presentation Prize—Tuesday 1:30pm

The judges will view the 3min vimeo presentations and student videos will be chosen as finalists. These finalists will attend the poster session on Tuesday where their vimeo will be streamed to all hubs followed by a 5min live Q&A with each presenter. The poster prize winners will be determined from this session.

Image: Destination Gold Coast

Sunday 21st November

4pm **Registration opens**
Reception Desk outside G03 theatre 1&2

5pm: **Welcome & AuPS Historic Symposium**
G03 theatre 2 or streamed via the online platform

Chair: Robyn Murphy

Pioneers of the Australian Physiological Society
Roger Dampney

European Influences on Australian Physiology
John Carmody

Women in Physiology
Judith Whitworth

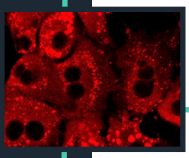
Highlights of Australian Physiology in the 21st century
Angela Dulhunty

7pm **Welcome Reception**
G07 Unitbar

For those attending on the Gold Coast, the historic symposium will be followed by a cocktail reception with drinks and canapes.

The cost of the reception is covered in your registration fee (additional tickets may be purchased by following the registration process)

Image: Destination Gold Coast



AuPS INVITED LECTURE

9AM(AEST), MONDAY 22ND NOVEMBER

AuPS INVITED LECTURE:

Deconvoluting metabolism at the lipid droplet

Prof Matt Watt
University of Melbourne

Matthew Watt obtained his PhD from the Deakin University in 2002, completed postdoctoral fellowships at the University of Guelph (Canada), RMIT University and St. Vincent's Institute, then established a research team in the Department of Physiology at Monash University where he was supported by continuous National Health and Medical Research Council (NHMRC) fellowships for over a decade. Matt moved to the University of Melbourne in 2018 where he is currently Professor and Head of the Department of Anatomy and Physiology. Matt has enduring links with the Australian Physiological Society and served as the National Secretary from 2013-2016. He has served as an Associate Editor for the Journal of Physiology and the American Journal of Physiology Endocrinology and Metabolism.

Matt's research vision is to deconvolute complex metabolic and endocrine regulation to facilitate the development of new therapies for obesity-related diseases, including type 2 diabetes, non-alcoholic fatty liver disease and cancer. His laboratory has worked with many local and international teams to achieve these goals, and they have established and share a comprehensive suite of analytical tools including real-time metabolic assessment in cells, tissues and mice, and lipidomic and proteomic evaluation using advanced mass spectrometry. Most recently, he has established and oversees the open-access Melbourne Murine Metabolic Phenotyping Platform to advance Victoria's capacity for in vivo metabolic testing. At the end of this pipeline, he works closely with industry partners, including Gilead Sciences and CSL, to advance the discoveries made in pre-clinical models towards real world solutions for patients.

Image: Lipid accumulation in hepatocytes. Meex et al. 2015. Cell metab 22(6) :1078-1089.

Monday 22nd November

Please note that all times below are for the Gold Coast AEST , UTC/GMT + 10hrs (+1 for Hobart/Melbourne/ Sydney, +30min for Adelaide, -2 for Perth)
* denotes Speaker at GC.

9:00 **AuPS Invited Lecture**
Location: G03_theatre 1

AEST (GC)			
		Chair: Robyn Murphy	
	9:00	Deconvoluting metabolism at the lipid droplet	Prof Matthew Watt

10:00 - 10:30 Morning tea

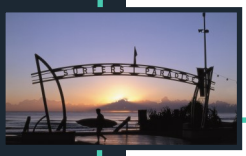
10:30	Session 1: G03_theatre 1		Session 2: G03_theatre 2		Session 3: G01_3.35 (online)	
AEST (GC)		**Symposium: Sex differences in Physiology**		**Free Communication: Substrate metabolism**		**Physiology Education Free Communication 1: Academic and Student Experiences**
		Chair: Livia Hool		*Chair: Macsue Jacques*		*Chair: Christian Moro*
	10:30	Sex differences in hypertension	Heddwen Brooks	10:30 Disruption of the circadian clock component BMAL1 elicits an endocrine adaption that impacts on insulin sensitivity and liver disease	*Benjamin Weger	10:30 New to an academic position - bridging the gap between researchers and teachers	Severine Lamon
				10:45 The impact of hypothyroidism during pregnancy on maternal and fetal outcomes	*Nykola Kent	10:45 Academics' experiences of students with mental health issues: challenges and changes in teaching practice	Julia Choate
	11:00	Molecular Sex differences in response to exercise	Nir Eynon	11:00 Therapeutic blockade of ER-Stress and inflammation regresses diet-induced NASH, without markedly altering lipids, in mice.	Ebru Bolsem	11:00 Easing transition burden for 1st year physiology students: Biology Bridging Resource	Betty Exintaris and Nilushi Karunaratne
				11:15 Mesenteric lymphatic dysfunction promotes insulin resistance and represents a potential treatment target in obesity	Enyuan Cao	11:15 A Lightboard video supports numeracy skills in 1st year cell biology students	*Ann Parkinson
	11:30	Sexual dimorphism and the role of sex steroids in modulating brown adipose tissue activity in adults	Belinda Henry	11:30 Identification of Transforming Growth Factor -β Stimulated Clone 22 Domain 1 (Tsc22D1) is a possible novel therapeutic target for NASH mediated HCC.	Benoit Smeuninx	11:30 Can we reduce the impact of the Covid pandemic on teaching and clinical research in medical sciences?	Fatima Shad Kaneez
				11:45 Metformin confers cardio-protection in type 1 diabetes	Kurt Hemphill	11:45 A faculty approach for creating an inclusive and connected community campus environment for international students during the COVID-19 pandemic	Betty Exintaris and Nilushi Karunaratne
	12:00	Gender Differences in Neurological Disease	*Pamela McCombe	12:00 A nutrient-hormone axis affecting movement economy.	Adam Rose		

12:30-13:00 LUNCH

13:00 **Poster Session (live at each hub)**

Poster presentations:
All posters are available to view as video recordings. Speakers will also be present at either GC or their Conference Hubs

Intrinsic mechanosensitivity and widespread coupling discovered in non-neural cells of spiral ganglion cultures	Yahdiel Abihu - UNSW
The efficacy of a home-based resistance training program to increase muscular outcomes in young females	Sarah Alexander - Deakin University
CHARACTERISATION OF PERICYTE CHANGES IN HEALTHY AND TYPE 2 DIABETIC MUSCLES	Emily Attrill - UTAS
Revealing a new cause of Parkinson's disease through a novel gene discovery – the pathological role of Kir4.2 channel	Xiaoyi Chen - Griffith Uni
The maternal microbiota has an influential role on the developing offspring's enteric nervous system	Benjamin Czapla - Uni Melbourne
Redox ratio in the left ventricle of the growth restricted fetus is linked to cardiac output	Catherine Dimasi - UniSA
Tracking mitochondrial Ca2+ changes during repetitive Ca2+ waves in muscle fibres from a RYR1 gain-of-function mutant mouse.	Rhayanna Gaglianone - UQ
Investigating the Relationship Between Intramuscular Testosterone and Skeletal Muscle Adaptations in Pre-Menopausal Females Undertaking a 12-Week Resistance Training Program	Briana Gatto - Deakin Uni
Therapeutic effect of spermidine supplementation on the mdx mouse phenotype	Nicholas Giourmas - VU
Ischemic preconditioning improves the anaerobic threshold in healthy males and females	Matthew Goldsmith - Western Sydney Uni
Use of genetically-encoded calcium indicators to measure intracellular calcium signalling dynamics between cell-in-cell structures	Ellen Janke - UQ
The future is female: A framework to design female physiology research	Olivia Knowles - Deakin Uni
Vitamin D Receptor protein expression in murine and human skeletal muscle	Hannah Lalunio - Uni Melbourne
Redistribution of calcium content in skeletal muscle fibres mediated by SR Ca2+ leak	Cedric Lamboley - UQ
Effects of hypochlorous acid and hydrogen peroxide on skeletal muscle function: implications for the pathophysiology of Duchenne muscular dystrophy	Thomas Lea - UWA
Acute exercise increases serum lipocalin-2 and attenuates the postprandial decrease in osteoglycin and lipocalin-2 in young men.	Lewan Parker - Deakin Uni
Transgene targeting of inner ear sensory neuron subpopulations	Lily Pearson - UNSW
Transient Receptor Potential Canonical Channel is active in the tubular (t-) system of muscle fibres with mutant RYR1.	Quyhn Phan
Cardiac lipid accumulation contributes to severe diastolic dysfunction in female Heart Failure with preserved Ejection Fraction (HFpEF) and diabetic comorbidity.	Hanneke Raaijmakers - Uni Melbourne
Aerobic exercise strategies for fatty liver disease: a systematic review and meta-analysis	Angelo Sabag - Uni Western Sydney
Optimizing Small RNA-Sequencing Library Preparation from Mitochondrial RNA	Jessica Silver - Deakin Uni
Development and validation of a single fibre malignant hyperthermia diagnostic assay	Daniel Singh - UQ
Characterising cerebrovascular changes in obesity and type 2 diabetes	Nicole Sumargo - UTAS
Mucopolysaccharidosis Type I mice exhibit global skeletal muscle weakness	Irene Tsioutsias - UWA
Liver one-carbon metabolism affects gene expression independent from protein lysine methylation	Yuquin Wu - Monash Uni
THE EFFECTS OF METFORMIN AND INSULIN TREATMENT DURING PREGNANCY ON ONE-CARBON METABOLISM	Dayna Zimmerman - UQ
Altered placental stress response in gestational diabetes	Olivia Holland - Griffith



Michael Roberts Prize Lecture

2pm (AEST), Monday 22nd November

2019 AuPS Michael Roberts Prize Lecture:

How can we effectively clear the hurdles to reach the Physiology finals?

Assoc Prof Andrew Moorhouse
UNSW Sydney

Assoc Prof Andrew Moorhouse was awarded the 2019 Michael Roberts Price for excellence in physiology education.

Andrew was delighted to receive the Michael Roberts award in 2019, being nominated for "a sustained and collegial contribution to excellence in Physiology education at a National and International level, and for the development of innovative Physiology teaching activities". He has built a strong national and international profile in teaching development and leadership, but is happiest when engaging directly with students and inspiring them to develop awe and understanding of the discipline. At UNSW Sydney he contributes to the teaching of over 1500 students per year in Science and Medicine, through course development, lectures, practicals and online learning. Andrew is currently Head of Physiology Teaching at UNSW Sydney, and the Education Officer for AuPS.

Image: Surfers Paradise, Destination Gold Coast

Michael Roberts Prize Lecture

2:30pm(AEST), Monday 22nd November

2020 AuPS Michael Roberts Prize Lecture:
Maintaining an individualised student-centred experience in blended, technology-enhanced learning

Dr Charles Sevigny
University of Melbourne

Dr Charles Sevigny was awarded the 2020 Michael Roberts Price for excellence in physiology education.

Charles is the proud recipient of the 2020 Michael Roberts award, cited for his "active engagement and excellence in teaching and learning, focus and development of digital learning modalities in the School and recognition of his outstanding pastoral care". Charles is the Director of Digital Learning for the School of Biomedical Sciences and the Director of Teaching and Learning in the Department of Anatomy and Physiology at the University of Melbourne. He also coordinates three units and delivers over 100 lectures per year to more than 1200 students. These combined interests in digitally-enabled and face-to-face teaching are underpinned by the desire to deliver a blended, student centred experience which involves students as individuals despite online learning and large class sizes.

Image: Destination Gold Coast

Monday 22nd November

14:00 — **AuPS Michael Roberts Prize Lectures**
Location: G03_theatre 1

AEST (GC)

Chair: Glenn Wadley

14:00	**2019 Prize Winner** How can we effectively clear the hurdles to reach the Physiology finals?	A/ Prof Andrew Moorhouse
14:30	**2020 Prize Winner** Maintaining an Individualised Student-Centred Experience in Blended, technology-Enhanced Learning	Dr Charles Sevigny

15:00 - 15:30 — **Afternoon Tea**

15:30

Session 1: G03_theatre 1

AEST (GC)

Symposium:
Is evolutionary loss our gain? The effects of alpha-actinin-3 deficiency in health and disease

Chair: Peter Houweling

15:30	ACTN3 genotype influences androgen receptor signalling in skeletal muscle	Kelly Roeszler
16:00	ACTN3 genotype influences skeletal muscle mass regulation and the response to dexamethasone	Jane Seto
16:30	Skeletal muscle fiber type modifies our response to acute cold exposure - an explanation of the evolutionary selection of the ACTN3 557X allele in humans	Victoria Wyckelsma
17:00	Impact of cold exposure and ACTN3 R577X.	Peter Houweling

Session 2: G03_theatre 2

Free Communication:
Across the membrane

Chairs: Daniel Singh & Angus Lindsay

15:30	Ryanodine receptor Ca2+ leak regulates Ca2+ redistribution across the SR, cytoplasm and mitochondria in slow-twitch muscle fibres	*Crystal Seng
15:45	Study of the pathological role of TRPM2 channel in Neuroinflammation in Parkinson's disease	*Linlin Ma
16:00	Comparing sarcoplasmic reticulum calcium release mechanisms: insights for muscle based thermogenesis	*Luke Pearce
16:15	ORAI1-dependant IL6 Gene Regulation via Store-operated Calcium Entry in Triple-negative Breast Cancer	*Shao Ming Chan
16:30	A GC-MS/Single-cell Method to Evaluate Membrane Transporter Substrate Specificity and Signalling	Stephen Fairweather
16:45	The contribution of intestinal ceramides to whole-body metabolic dysfunction	Michael Mah

Session 3: G01_3.35 (online)

Physiology Education Workshop

Chair: Kathy Tangalakis & Andrew Moorhouse

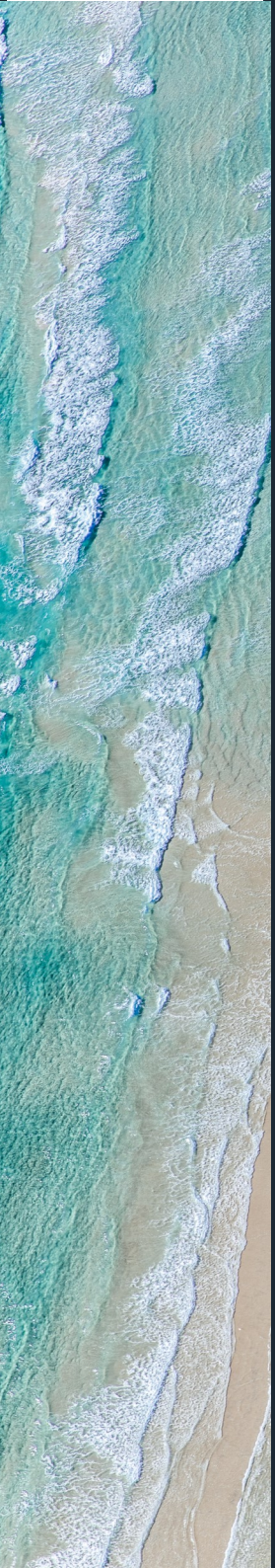
15:30 ***Core Concepts in Physiology Education: Developing Assessments and Curricula Activities***

A set of seven Core Concepts in Physiology Education have recently been developed by Australian Educators, adapted from those published by the American Physiological Society and the Physiological Society UK.

Teams of academics are currently 'unpacking' each core concept into subthemes and the National Biosciences Assessment Collaboration has incorporated them into an Assessment Framework which will allow us to map to assessments.

In this workshop we will form small teams to develop learning and assessment activities aligned to these unpacked concepts that can be used as a resource in the different courses in which Physiology content is taught.

This will be an online and hands-on workshop with further details sent to registered participants.



Education Workshop

3:30pm, Tuesday 22nd November

Join via the online platform

AUPS EDUCATION WORKSHOP

Core Concepts in Physiology Education:

Assessments and Curricula Activities

We recently reached national consensus on seven Core Concepts in Physiology Education, adapted from those published by the American Physiological Society and the Physiological Society UK. Teams of academics are currently 'unpacking' each core concept into sub-themes and the National Biosciences Assessment Collaboration has incorporated them into an Assessment Framework which will allow us to map and improve our assessments. The next step is to develop learning and assessment activities aligned to these concepts that educators can implement as part of their curricula. These activities need to be flexible to meet the different courses in which Physiology content is taught (e.g., Advanced Medicine to Introductory Allied Health courses). Come along with your some ideas and we can work in small groups to develop assessments and learning activities we can all share, modify and implement.

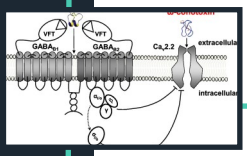
Facilitators:
A/Prof Kathy Tangalakis (kathy.tangalakis@vu.edu.au)
A/Prof Andrew Moorhouse (a.moorhouse@unsw.edu.au)

Image: DestinationGoldCoast

TUESDAY 23RD NOVEMBER

Please note that all times below are for the Gold Coast AEST , UTC/GMT + 10hrs (+1 for Hobart/Melbourne/ Sydney, +30min for Adelaide, -2 for Perth)
*** denotes Speaker at GC.**

8:30 AEST (GC)	Session 1: G03_theatre 1		Session 2: G03_theatre 2		Session 3: G01_3.35 (online)	
	Symposium: **The liver at the centre stage of metabolic regulation** *Chair: Matthew Watt*		**Symposium:** **New insights into mechanisms of heart disease and dysfunction** *Chair: Kim Mellor*		**Physiology Education Symposium:** **Innovations in Physiology Education** *Chair: Julia Choate*	
8:30	The liver as an endocrine organ – Understanding hepatokine secretion during the development of non-alcoholic fatty liver disease	Magdalene Montgomery	Regulation of glucose transport during cardiac diseases and diabetes	Véronique Lacombe	Embedding employability across the physiology degree: Integration versus a stand-alone course	*Deanne Hryciw
9:00	Exercise-induced metabolic adaptations in the liver	John Thyfault	Resolving the basis of calcium channel leak in arrhythmia	Michelle Munro	Supporting innovations in physiology education through staff reflection	Kate Carrol & Sharon Fleknoe
9:30	Boosting mitochondrial metabolism in the liver - implications for metabolic disorders and aging	Nigel Turner	A Novel Human Pluripotent Stem Cell Model Demonstrates Sympathetic Neuronal Hyperactivity in Long QT Syndrome Type 1	Annika Winbo	Absent but still engaged: Connecting with diverse student cohorts around threshold concepts using interactive, online modules	Sarah Etherington
10:00	Liver-derived small extracellular vesicles regulate glycemic control through increased insulin secretion	Paula Miotto	Cellular mechanisms of cardiomyopathy in diabetes – novel insights of glycophagy involvement	Lea Delbridge	Less is more: Teaching using core physiology concepts and competencies	Dee Silverthorn
10:30 - 11:00	**Morning tea**					
11:00 AEST (GC)	**Session 1: G03_theatre 1**		**Session 2: G03_theatre 2**		**Session 3: G01_3.35 (online)**	
	Symposium: **Maternal influences on fetal development** *Chair: Deanne Hryciw*		**Free communication:** **Signalling and Metabolism** *Chair: Ben Perry*		**Physiology Education Free communication 2:** **Virtual vs Face to Face Teaching Activities** *Chair: Puspha Sinnayah*	
11:00	Mitochondrial reprogramming as a putative therapeutic target in metabolic syndrome and hypertension of fetal origin	Julie Y.H. Chan	Piezo1 regulates shear-dependent nitric oxide production in human erythrocytes	*Lennart Kuck	Comparing the Effectiveness of Online and Face-to-Face Practicals Using a Learning Outcome Framework.	*Yit Chiun Lim
11:15			Skeletal muscle thermogenesis regulated by ryanodine receptor 1 Ca2+ leak.	*Aldo Meizoso	Equally engaging both face to face and online students during live lectures with interactive polling.	*Christian Moro
11:30	Maternal obesity and offspring outcomes	Jodie Dodd	CRISPR/Cas9 and lentiviral rescue methods to study ORAI1 function in transcription activation	*Melanie Robitaille	Students' perceptions of challenges in internal and external delivery modes of a physiology course	*Kay Colthorpe
11:45			Blocking IL-6 trans-signalling does not diminish the efficacy of IC7Fc as a treatment for diet induced metabolic disease in mice	Jingjing Zhao	Adapting to blended learning: Does strategy choice or engagement impact performance?	*Louise Ainscough
12:00	Fetal alcohol spectrum disorder: a disorder affecting the brain, body, or both?	Karen Moritz	Long non-coding RNA Tug1 modulates mitochondrial and myogenic responses to exercise in skeletal muscle	Adam Trewin	Are Virtual Physiology Laboratories Effective for Student Learning Compared with Traditional In-Person Laboratories?	Ari Pinar
12:30	Epigenetic Regulation and Chronic Kidney Disease	Sonia Saad	Compound Fuling granule (CFG) inhibits endometrial cancer progression and invasion in vitro	Sidra Khan	The face-to-face teaching of Gross Anatomy following COVID-19 from a student's perspective	Rudi Klein
	The Physiological Society Thank you to *The Physiological Society* for their sponsorship and support of this symposium.		Quantitative modelling of amino acid transport and homeostasis in mammalian cells	Gregory Gauthier-Coles	Students want lectures: Survey of student perception of learning experience during CoVID19 lockdown	Joseph Rathner
13:00-13:30	**LUNCH**					



AuPS PLENARY LECTURE

5pm (AEST), Tuesday 23rd November

AuPS Plenary Lecture

Analgesic α-conotoxins: Role of peripheral GABAB receptors, calcium and potassium channels in neuron excitability and nociception

Prof David Adams

CEO and Executive Director of the Illawarra Health & Medical Research Institute (IHMRI), University of Wollongong

Biography:

David has been an elected Council member of the Australian Physiological Society (AuPS; 1995-98, 2003-04) and is a past President of AuPS (2004-10). He is a member of four Editorial Boards of international scientific journals and is an ARC grant reviewer, a member of NHMRC Ideas Grant Review Panel and member of NSW Cardiovascular Disease Research Advisory Committee (2018-22). His research focuses on membrane receptors and ion channels which has been continuously funded by an NHMRC Project and Program Grants (2005-19) and ARC Discovery Grants.

David is internationally recognised for his contributions to membrane physiology, in particular that of ion channel function and modulation using electrophysiological recording techniques. In the last 20 years, he has identified novel venom-derived peptides (conotoxins) from cone snails as probes for ion channel structure and function and to identify novel pain therapeutics. This research has focused on investigating conotoxins that selectively target the voltage-gated sodium and calcium channels, nicotinic acetylcholine receptors, and G protein-coupled receptor modulation of calcium and potassium channels.

Image: Adams & Berecki, 2013. BBA 1828(7), 1619-1628

TUESDAY 23RD NOVEMBER

14:45	Session 1: G03_theatre 1		Session 2: G03_theatre 2		Session 3: G01_3.35 (online)	
AEST (GC)	**Symposium:** **Non-coding RNAs in metabolic tissues** *Chair: Severine Lamon*		**Symposium:** **Supplements...some might actually do something - lessons from vascular biology** *Chair: Shaun Sandow*		**Physiology Education Free communication 3:** **Teaching Methods and Learning Strategies** *Chair Louise Ainscough*	
	14:45	Trials and tribulations of microRNA cardiac targeted therapies — Bianca Bernardo	14:45	3 novel therapies for peripheral arterial disease: targeting natriuretic peptide receptor 3, beta-3 adrenergic receptor, and omega-3 fatty acids — Kristen Bubb	14:45	Effective Methods Utilised by Biomedical Science Students to Improve Science Communication — *Luli Faber
					15:00	Embedding art into histology: Visual Thinking Strategies (VTS) to enhance visual literacy. — *Jordan Patti
	15:15	Sex-specific differences in the microRNA profile of skeletal muscle — Danielle Hiam	15:15	Exploring the "fishy" tail: Omega-3 Polyunsaturated fatty acids (n-3 PUFAs) evoke vascular relaxation by targeting specific smooth muscle cell potassium channels. — Alister McNeish	15:15	Professional identity of biomedical science students: the interplay between skills, attributes, and self-esteem — *Emma Richards
					15:30	Peer Evaluation in collaborative assessments in Physiology using Buddycheck — Puspha Sinnayah
	15:45	Human thermogenic adipocyte regulation by the long noncoding RNA LINC00473 — Søren Nielsen	15:45	Dietary nicotinamide mononucleotide (NMN) improves endothelial function and vascular stiffness in aged murine skeletal muscle arteries. — Timothy Murphy	15:45	Bring on Blended Learning: Student's evaluation of their online learning resources. — Kristina Anevska
					16:00	Online Collaborative Team work: Can it really work or are we Zooming towards disaster? — Angelica Fong
	16:15	Role of microRNAs in chemotherapy-induced muscle wasting in cancer cachexia — Kate Murphy	16:15	Effect of omega-3 polyunsaturated fatty acids on oxidative stress in patients with small abdominal aortic aneurysm — *Fraser Russell		
17:00	**AuPS Plenary Lecture** **Location: G03_theatre 1**					
AEST (GC)	*Chair: Deanne Hryciw* Analgesic α-conotoxins: Role of peripheral GABAB receptors, calcium and potassium channels in neuron excitability and nociception. — Prof David Adams					
19:00	**Conference Dinner at Skypoint** **SkyPoint is located at the top of the Q1 Building (Surfers Paradise Boulevard)**					

Conference Dinner

Date: **Tuesday 23rd November**
Time: **7pm**
Location: **SkyPoint**
Dress: **Lounge Suit**

The annual conference dinner on the Tuesday night will be held at SkyPoint.

SkyPoint is located at the top of the Q1 Building (Surfers Paradise Boulevard), the world's tallest residential building, in the heart of Surfers Paradise. Delegates are asked to make their own way to the dinner.

The three course sit-down dinner (included in your registration) should not be missed (additional tickets may be purchased by following the registration process).

Image: SkyPoint (SkyPoint.com.au)

WEDNESDAY 24TH NOVEMBER

Please note that all times below are for the Gold Coast AEST , UTC/GMT + 10hrs (+1 for Hobart/Melbourne/ Sydney, +30min for Adelaide, -2 for Perth)
*** denotes Speaker at GC.**

9:00 AEST (GC)	Session 1: G03_theatre 1		Session 2: G03_theatre 2	
	Symposium: Developmental and pregnancy physiology - roles in health and disease *Chair: Olivia Holland*		**Joint symposium: Physiological Society of Japan/AUPS Microglia and Neuronal Interactions in Brain Plasticity** *Chairs: Andrew Moorhouse & Hiroaki Wake*	
	9:00 Associations between COVID-19 lockdown and post-lockdown on the mental health of pregnant women, postpartum women and their partners from the Queensland Family Cohort prospective study	*Vicki Clifton	**9:00** Microglial regulation of peripheral nerve injury-induced synaptic remodeling in the thalamus	Yoshifumi Ueta
	9:30 Sulphate deficiency and adverse developmental outcomes	*Paul Dawson	**9:30** Sex differences in spinal cord microglia following nerve injury	Gila Moalem-Taylor
	10:00 Events at birth - Implications and strategies for treating newborn brain damage	*Tracey Bjorkman	**10:00** In vivo microglia dynamics and circuit plasticity in learning	Ako Ikegami
	10:30 Transthyretin; a transport system for delivery of hormones and proteins to the placenta and fetus	*Kerry Richard	**10:30** Repopulating microglia promote brain repair in an interleukin-6 dependent manner	*Emily Willis
	The Physiological Society Thank you to *The Physiological Society* for their sponsorship and support of this symposium.			
11:00-11:30	**Morning tea**			
11:30 AEST (GC)	**Session 1: G03_theatre 1**		**Session 2: G03_theatre 2**	
	Symposium: Ion channels as biological targets for diseases *Chair: Linlin Ma*		**Free communication: All things muscle** *Chair: Kevin Watt*	
	11:30 Ion channels: The cause of and solution to chronic visceral pain?	Stuart Brierley	**11:30** Identifying novel mediators of contraction within the urinary bladder urothelium and lamina propria tissue layers.	Charlotte Phelps
			11:45 Prevention of heart failure by expression of neuregulin-1-β1 in cardiomyocytes using adeno-associated virus.	Melissa Reichelt
	12:00 Mechanistic insights from a mouse model of HCN1 developmental and epileptic encephalopathy	Christopher A Reid	**12:00** Exercise training improves long term memory, irrespective of obesity, in mice.	Olivier Fuller
			12:15 Multi OMICs integration of exercise responses in human skeletal muscle	Macsue Jacques
	12:30 Aquaporin-1 ion channels: The answer to a long-standing mystery in Sickle Cell Disease	Andrea Yool	**12:30** Neuromuscular remodeling and perturbed BMP signalling promote muscle wasting in cancer cachexia	Adam Hagg
			12:45 Cardiomyocyte cross-bridge derived stiffness is elevated in diet-induced cardiometabolic disease	Johannes Janssens
	13:00 ASICs are more than a shoe brand: targeting ASIC1a to protect against ischemic injury of the heart and brain	*Glenn F King	**13:00** STBD1 deficiency disrupts homeostatic glycogen regulation and impairs cardiac function.	Sarah Hayes

13:30-14:00	**LUNCH**		
14:00	**AGM** Location: G03_theatre 1		
AEST (GC)	**AuPS AGM and AuPS student prizes**		
15:00	**Session 1: G03_theatre 1**		**Session 2: G03_theatre 2**
AEST (GC)	**Symposium:** **Intercellular communication axes in cardiac health and disease** *Chair: Lea Delbridge*		**Symposium:** **Women Bridging the Valley of Death** *Chairs: Emma Rybalka, Nicole Stupka, Cara Timpani*
15:00	Arrhythmogenic consequences of cardiac adipose-cardiomyocyte communication	James Bell	A Life in Industry and Academia: The Value of Physiology to the Pharmaceutical Industry — Eva Chin
15:30	Modulated autonomic innervation of the diabetic heart	Carol Bussey	The Eteplirsen® Story: From research through commercialisation, to the next challenge — Sue Fletcher
16:00	Exosome mediated protection in myocardial ischaemia/reperfusion	Sean Davidson	Translational Time Travel: What I Known Now and What I Wish I Had Known About Translational Research When I Was at the Bench — Nicky Konstantopoulos
16:30	Extracellular vesicles in (cardiac) cell remodelling and regenerative medicine	David Greening	Targeting Nrf2 to treat Duchenne Muscular Dystrophy: A Translational Approach — Emma Rybalka

NOTES

NOTES

NOTES

NOTES

aups.org.au

@AuPhysiolSoc

Thank you to our meeting sponsors: