



Sunday, 26 November



421.2.03 (Building 421, Level 2)

2pm-5pm Registration Desk Open

421.2.03 (Building 421, Level 2)

4pm-5pm ECR Workshop

421.2.03 (Building 421, Level 2)

5:15pm- 6:15pm AuPS Invited Lecture Chair: Robyn Murphy

Muscle membranes talk
Prof Bradley S. Launikonis - The University of Queensland

ACU Ted Exell Terrace (Building 421, Level 6)

6:30pm - 9pm Welcome Reception

The welcome reception is at ACU Ted Exell Terrace, Level 6 and is included in your registration

Monday, 27 November

8am-10am	421.2.03	421.5.07	
	AuPS/ANZSSFR co-badged day Musculoskeletal ageing in females symposium Chair: Danielle Hiam	Free Communications: Brain and integrative neurophysiology Chair: Stefan Broer	
	8am Sex-based difference in skeletal muscle of middle-aged and older adults in response to a period of disuse Emily J. Arentson-Lantz	8am Targeting Neurofibrosis to Treat Metabolic Disease Feiyue Shi	
	8:30am An 'appetite' for change: preventing falls and fractures in older women Marc Sim	8:15am Unveiling a Hidden Signaling Landscape: Profiling the Secretome of the Medial Basal Hypothalamus in Metabolic Disease Linda T. Nguyen	
	9am Factors that challenge ageing muscle and bone in women: an epidemiological perspective Julie A. Pascoe	8:30am Mapping the diversity of neuronal populations in the inner ear Lily J. Pearson	
	9:30am Mapping the muscle molecular ageing process in females: a lifespan approach Severine Lamon	8:45am Hypothalamic Neurons Expressing the Relaxin Receptor, Rxfp1, Orchestrate Feeding Behaviour and Glycaemic Control for Metabolic Disease Remission in Mice Sam F. Mohammed	
		9am Unraveling a Neuroendocrine Ensemble Orchestrating Metabolic Adaptation in the Hypothalamus Cait A. Beddows	
		9:15am Upgrading Metabolic Disease Treatment by Reversing Glucagon-Like Peptide-1 Resistance in the Brain Callen C. Goldsmith	
		9:30am Unveiling the Role of Reactive Astroglia in Neurofibrosis-Driven Metabolic Disease: Implications for Obesity and Type-2 Diabetes Rui Q. Teo	
		9:45am Mitochondrial dynamics and gene expression are impaired in ALS patient derived iPSC-derived lower motor neurons Leanne Jiang	
10am-10:30am	Morning Tea Greg Craven Centre (Building 421, Level 7)		

Monday, 27 November

10:30am - 12:30pm	421.2.03	421.5.07	
	AuPS/ANZSSFR co-badged day New Frontiers in the biology of ageing and sarcopenia symposium Chair: Nir Eynon	Free Communications: The Heart of the Problem Chair: James McNamara + Livia Hool	
	10:30am Exercise rejuvenates the skeletal muscle methylome and transcriptome Sarah Voisin	10:30am The role of cardiomyocyte cavin-1 in cardiac function and development Hui Y. Khoo	
	11am Overcoming mechanistic challenges to preserve muscle function in sarcopenia Gordon S. Lynch	10:45am TMEM161B is required for the maintenance of cardiac rhythm Jessica F. Briffa	
	11:30am Does skeletal muscle stop ageing physiologically? Avnika A. Ruparella	11am TRPM4-Piezo1 signalling axis drives pressure overload-induced cardiac hypertrophy Yang Guo	
	12pm Sarcopenia, the dark side of ageing: the rise of bone metabolism Itamar Levinger	11:15am Understanding the role of Starch Binding Domain containing protein 1 (STBD1) in maintaining cardiac function Adam Chau	
		11:30am Cardiac glycopagy is involved in physiological glycogen handling in the heart post-exercise James S. L.	
		11:45am HUMAN PLURIPOTENT STEM CELL MODELS REVEAL THE MECHANISM OF ALPK3-INDUCED CARDIOMYOPATHY James McNamara	
		12pm Elucidating the role of the cytoskeleton in regulating mitochondrial function in the heart Teagan Er	
		12:15pm Piezo1 is the cardiac mechanosensory that initiates the cardiomyocyte hypertrophic response to pressure overload in adult mice Ze-Yan Yu	

12:30pm-1:30pm

Lunch and Poster Viewing
Greg Craven Centre (Building 421, Level 7)

Monday, 27 November

1:30pm -
3:30pm

421.2.03

AuPS/ANZSSFR co-badged day - Molecular transducers of skeletal muscle adaptation to exercise, physical inactivity and ageing symposium

Chair: Andy Philp

1:30pm	Age-related gene expression changes in skeletal muscle point to potential mechanisms for sarcopenia	Tea Shavlakdze
2pm	Skeletal muscle redox balance in aged conditions	Chrysovalantou E. Xirouchaki
2:30pm	Metabolomic adaptations to prolonged bed rest in energy balance are linked to fuel utilisation and glucose disposal	Isabelle Alldritt
3pm	Acetylation as fundamental regulator of contractile function	Simon Schenk

421.5.07

Free Communications: From drugs to signalling networks

Chair: Natalie Trevaskis

1:30pm	Hypochlorous acid exposure impairs skeletal muscle function and Ca ²⁺ signalling: implications for Duchenne muscular dystrophy	Thomas A. Lea
1:45pm	Redistribution of calcium content in slow-twitch skeletal muscle fibres mediated by SR Ca ²⁺ leak	Cedric R. Lamboley
2pm	Importance of vitamin D for limiting immobilization-induced muscle loss	Memphis Calzoni
2:15pm	Towards the treatment of Duchenne Muscular Dystrophy: Targeting Inflammation with PK007	Sai Yarlagadda
2:30pm	Smooth muscle contractions in the urinary bladder: Alterations between juvenile and adult detrusor and the influences of G protein-coupled receptor stimulation	Charlotte Phelps
2:45pm	Testosterone accelerates differentiation in young but not replicatively aged mouse skeletal muscle cells	Ross Williams
3pm	Detrusor responses to antimuscarinics medications is consistent between juvenile and adult urinary bladders in porcine tissue	Vineesha Veer

3:30pm- 4pm

Afternoon Tea
Greg Craven Centre (Building 421, Level 7)

Monday, 27 November

4pm - 6pm	421.2.03	421.5.07
	AuPS/ANZSSFR co-badged day - The Muscle-nerve interface, central and peripheral implications for frailty symposium Chair: Adam Haag and Peter Noakes	Free Communications: Energy Metabolism Chair: Sean Yan
	3:45pm Understanding the NMJ's defects in cancer cachexia Roberta Sartori	4pm Phosphoproteomics-directed manipulation reveals SEC22B as an hepatic signaling node governing metabolic actions of glucagon Yuqin Wu
	4:20pm Muscle and neurons in ALS: partners in crime? Shyuan Ngo	4:15pm Interrogating the therapeutic potential of Hexosaminidase A in advanced liver disease Sihan Lin
	4:45pm Targeting central feeding circuits to improve outcomes in cancer cachexia Sarah H. Lockie	4:30pm Polyamine metabolism regulates muscle stem cell and fibro-adipogenic progenitor proliferation and differentiation John H. Nguyen
	5:10pm Investigating the contribution of neuromuscular signaling and inflammation in neuromuscular diseases: ALS/MND and muscular dystrophy Peter G. Noakes	4:45pm Hepatic dynamin-related protein 1 silencing affects glucose metabolism independent of sex and body weight Patricia M. Rusu
	5:35pm From denervation to senescence: exploring the multifaceted signalling in skeletal muscle of geriatric mice Dan Ham	5pm All NASH-HCC models are wrong, but some are more useful than others Benoit Smeuninx
		5:15pm Targeting hepatic HIBCH for the treatment of non-alcoholic fatty liver disease Zhili Cheng
		5:30pm Dietary vitamin B12 deficiency reduces white adipose tissue expression of insulin signalling genes in female rats Elliott S. Neal
		5:45pm Genome-wide CRISPR screen identifies CBX4 as a novel regulator of hepatic lipid metabolism Li Dong

6:30pm- 10pm

ECR Mixer at Stomping Ground Brewery and Beer Hall
 Collingwood 100 Gipps St. 3066

Tuesday, 28 November

8:30am-10:30am	421.2.03	421.5.07	Greg Craven Centre (Level 7)
	Symposium: Emerging research into your mother's role in the aetiology of your disease; molecular mechanisms and novel therapeutics Chair: Deanne Hryciw	Symposium: The physiology of inherited myopathies (with 5 minute introduction from reNEW Melbourne) Chair: Kevin Watt	Education Symposium (with 5 minute introduction from ADI) Chair: Craig Campbell
	8:30am Maternal cannabis use in pregnancy: impacts on fetal/placental development David Natale	8:30am Facioscapulohumeral dystrophy (FSHD): Molecular mechanisms and therapeutic considerations Stephen J. Tapscott	8:30am Creating immersive learning environments in higher education Mohamed Elzein
	9am Maternal nutrition can rescue a nephron deficit in growth-restricted offspring John F. Bertram	9am Humans as model organisms, time and again rare disease patients inform fundamental biology Gina Ravenscroft	9am Virtual Reality in Higher Education Charles Sevigny
	9:30am Exploring the role of human milk lipids in protecting the infant against non-communicable diseases Alexandra D. George	9:30am Cardiac trabecular fate is genetically hardwired prior to sprouting morphogenesis Kelly A. Smith	9:30am Digital teaching in anatomy Michelle Rank
	10am Imbalances in fatty acid during pregnancy and outcomes for her child's health Deanne H. Hryciw	10am The importance of patient advocacy in the treatment of congenital heart failure Adam Piers	10am Utilising the metaverse in biomedical teaching Christian Moro
10:30am- 11am	Morning Tea Greg Craven Centre (Building 421, Level 7)		

Tuesday, 28 November

11am-1pm	421.2.03	421.5.07	Greg Craven Centre (Level 7)
	Symposium: Cardiovascular consequences of obesity (with 5 minute introduction from ADI) Chair: Kate Weeks	A Joint Physiological Society of Japan and Australian Physiological Society Symposium: The interface of calcium release and muscle function in disease and exercise Chair: Robyn Murphy	Education Free Communications: Gamification, labs and graduate careers Chair: Julia Choate
	11am HDAC11 inhibition blocks adipocyte lipolysis through reversible myristoylation of HSL Emma L. Robinson	11am Dyfunctional muscle Ca ²⁺ -thermal signaling in malignant hyperthermia model mice Toshiko Yamazawa	11am Employing Serious Games to Improve Undergraduate Student Engagement Craig Campbell
	11:30am Cardiac adipose: the good, the bad and the unknown James R. Bell	11:30am Development of RyR2 inhibitors and verification of their effects in CPVT mouse models Nagomi Kurebayashi	11:15am Crafty teaching or just a game? Educator and student experience of using Minecraft in physiology education Ben Perry
	12pm Modulating membrane lipids as therapeutics for cardiovascular disease Yow Keat Tham	12pm Calcium dynamics in a recessive ryanodine receptor myopathy Daniel P. Singh	11:30am Physiology murder mystery: a two-part workshop to teach undergraduate digestive and metabolic physiology Michael Leung
	12:30pm DOHaD: Adult Obesity, Heart Disease and Diabetes Janna Morrison	12:30pm Exercise induced fragmentation of the ryanodine receptor: A story of time, muscle fibre type, and fitness for physiological adaptations in skeletal muscle Barnaby P. Frankish	11:45am Utilising LinkedIn for tracking graduate outcomes to advance undergraduate physiology Christine Lee
			12pm Enhancing Student Engagement in Laboratories: Implementing Pass/Fail Lab Skill Competencies Chantal Hoppe
			12:15pm Online laboratory experimental simulations foster skills and enhance the student experience of undergraduate Physiology practical laboratory classes Simone Carron
			12:30pm Can online simulated practical classes replace face-to-face classes in an undergraduate physiology subject? Angelina Fong
			12:45pm Utilizing a Physiological Simulator for Enhanced Physiology Education Joseph A.
1pm-2pm	Lunch and Poster Presenting Greg Craven Centre (Building 421, Level 7)		

Tuesday, 28 November

2pm-4pm	421.2.03	421.5.07	421.4.04
	Symposium: Cardiometabolic diseases: insights from mice, mole-rats, ischemia and immuno-responsivity Chair: Kim Mellor	Symposium: The gastro-intestinal tract as the gatekeeper for metabolic allostasis Chair: Adam Rose and Mark Febbraio	Free Communications: Muscle Adaptation and Exercise Physiology Chair: Sophie Broome
2pm	Co-option of liver glycogen handling enzymes in the naked mole-rat heart Jane Reznick	2pm Dysregulation of amino acid and sphingolipid metabolism in co-morbidities of diabetes Christian Metallo	2pm Exercise, but not glucocorticoids, modifies circulating levels of lipocalin-2 and its forms in young males Carlie Bauer
2:30pm	Signalling mechanisms underlying cardiac wound healing Ronald J. Vagnozzi	2:30pm Intestinal lymph interactions in metabolic control Natalie Trevasakis	2:15pm Repairing muscle without stem cells after exercise William Roman
3pm	Diabetic heart disease: characterising molecular and cellular impacts of glycogen processing dysregulation Lea Delbridge	3pm Intestinal amino acid transporters as critical gatekeepers of nutrient homeostasis Stefan Broer	2:30pm Urolithin A Reduces Markers of Inflammation and Muscle Damage, But Does Not Further Improve Endurance Running Performance in Well-Trained Males Jamie Whitfield
3:30pm	New therapeutic targets for cardiac ischemia Nathan Palpant	3:30pm Intestinal ceramide metabolism and metabolic health Sarah Turpin-Nolan	2:45pm Extracellular vesicles are enriched in activated AMPK following acute exercise Nimna Perera
			3pm The Ubiquitinomics of Skeletal Muscle Hypertrophy Craig A. Goodman
			3:15pm Heat Shock Proteins in human single skeletal muscle fibres resist age associated alterations and differentially respond to high-intensity exercise training Noni Frankenberg
			3:30pm Interrogating the biological roles of dystrophin and utrophin in contraction-mediated adaptations to dystrophic skeletal muscle Justin P. Hardee
			3:45pm Duality of the FHL1 gene in myopathy and exercise performance Saveen Giri
			Education hands-on lab workshop with Julia Choate and ADI Instruments 2pm-4pm Greg Craven Centre Level 7

4pm-4:15pm

Afternoon Tea
 Greg Craven Centre (Building 421, Level 7)

4:15pm-4:45pm

Michael Roberts Prize Lecture (421.2.03)

AuPS Conference Dinner

5pm-6pm

AuPS invited speaker (421.2.03)

at the Plaza Ball Room from 6:30pm

Wednesday, 29 November

9am - 11am	421.4.04	421.5.07	Greg Craven Centre (Level 7)
	Symposium: Cardiac remodelling in Health, Ageing and Disease Chair: Vijay Rajagopal	Symposium: Extremes in Physiology: From Bench to Podium Chairs: John Hawley and Nir Eynon	Education Launch of the Core Concepts (Start at 10am) Chair: Kathy Tangalakis
9am	Crosstalk between Inositol 1,4,5 trisphosphate receptors (InsP3R) and Ryanodine Receptors (RyR) contributes to disrupted Ca ²⁺ handling and arrhythmogenic activity in human heart failure H. Llewelyn Roderick	Physiological determinants of extreme endurance exercise performance: lessons from the first sub-2 hour marathon Andrew M. Jones	10am Unpacking and validating the "physiological adaptation" core concept of physiology Suzanne Estaphan
9:30am	Phosphoinositide 3-kinase protects against atrial enlargement, fibrosis and thrombi Julie R. McMullen	The molecular athlete: From molecules to medals John A. Hawley	
10am	An in vitro model that recapitulates the stiff myocardium and hypertrophic cardiomyopathy disease progression Livia C. Hoel	Survival of the sleepest: how sleep deprivation impacts athlete physiology and performance Olivia E. Knowles	
10:30am	Age-specific changes in myocardial molecular expression of human left ventricular tissues from the Sydney Heart Bank Vijay Rajagopal	10:30am Freeways and Intersections - Medicine, Sport and Science Andrew Garnham	

11am - 11:15am

Morning Tea
Greg Craven Centre (Building 421, Level 7)

Wednesday, 29 November

11:15am-1:15pm	421.4.04	421.5.07	Greg Craven Centre (Level 7)					
Free Communications: Sex matters in physiology		Free Communications: Disease Models in Physiology		Education Free Communications: Student Learning and engagement				
Chair: Kate Weeks		Chair: Leonit Kiriaev		Chair: Kay Colthorpe				
11:15am	Investigating sex differences in early systemic and cardiac responses to overnutrition	Adam J. Trewin	11:15am	Serial notexin injury in wild-type mice produces functionally normal regenerated skeletal muscle with increased fibre branching that's protected from eccentric injury	Leonit Kiriaev	11:15am	Drivers of student engagement and disengagement in a first year human movement studies physiology course	Luli Faber
11:30am	Fetal growth restriction (FGR) alters cardiac metabolism in a sex- and cause-of-FGR-specific manner in the fetal guinea pig heart	Melanie R. Bertossa	11:30am	Investigating skeletal muscle dysfunction in a mouse model of critical illness	Amy J. Bongetti	11:30am	Supporting Introductory Physiology lecture program with interactive online tutorials: impact on students' learning experience and outcomes	Nicole Y. Marden
11:45am	Pericardial adiposity increases more rapidly in response to a high fat diet in males vs female rats	Sarah Hayes	11:45am	Distribution of dysferlin in distinct membrane regions in rat skeletal muscle	Stefan G. Wette	11:45am	A Deep Dive into First-Year Bioscience Students' Mindset and Self-Efficacy	Danielle Burgess
12pm	The effect of gestational stress on femoral bone microarchitecture of the dystrophin-deficient mdx mouse	Saba Gharibi	12pm	Mitochondrial Ca ²⁺ handling in mdx mouse	Rhayanna B. Gaglianone	12pm	Collaborative peer observation learning circles for ongoing professional development	Sinnayah P.
12:15pm	A super complex issue: are there sex-specific changes in mitochondrial respiratory supercomplex assembly following high-intensity interval training in humans?	Dale Taylor	12:15pm	Defective lysosome reformation during autophagy causes skeletal muscle disease	Meagan J. McGrath	12:15pm	Exploring teamwork awareness, beliefs and strategies of Undergraduate and Masters of Pharmaceutical Science students	Emilee Molcik
12:30pm	Cardiomyocyte subcellular lipid localisation is associated with severe diastolic dysfunction in female Heart Failure with preserved Ejection Fraction (HFpEF) and diabetic comorbidity	Antonia Raaijmakers	12:30pm	Associations Between Muscle-Specific Detrimental Phenotypes in Dysferlin-Deficient Mice and Altered Calcium Handling	Aldo Maizoso-Huesca	12:30pm	The Impact of Parasocial Interactions on Student Engagement in Blended Learning Environments	Louise Ainscough
12:45pm	Exercise-responsive gene transcription is differentially affected by an interleukin-6 promoter variant in male and female mice	Lauren E. Watson	12:45pm	Correlating cellular changes with neuromuscular function in Hirschsprung disease	Narges Mahdavian	12:45pm	Stretching for relevance: connecting the relevance of learning to enhance task authenticity	Judith Kibedi
1pm	The role of oestrogen in female skeletal muscle ageing: A systematic review	Annabel J. Crichtow	1pm	Manipulating muscle growth to improve dystrophic pathology in mouse models of Duchenne muscular dystrophy	Wenlan Li			
1:15pm-2:15pm	Lunch + AGM 421.5.07							

Wednesday, 29 November

3p-5pm

421.4.04			421.5.07			Greg Craven Centre (Level 7)		
Free Communications: Targeting cancer and cachexia			Symposium: Mitochondria and Movement: latest insights into mitochondrial adaptations to exercise			Physiology Educators Networking Session		
Chair: Justin Hardee			Chair: David Bishop					
3pm	Chronic stress abrogates the beneficial effects of exercise in murine models of breast cancer	Lauren Terry	3pm	Mitochondrial bioenergetics across the movement spectrum	Graham P. Holloway			
3:15pm	Post-Developmental Disruption of Muscle Pol1 Exonuclease Activity Induces Mitochondrial Stress and a Cachexia-like Phenotype	Simon T. Bond						
3:30pm	TGF- β 1 induces metastatic colonisation to skeletal muscle in mouse models of metastatic breast cancer	Alastair A.E. Saunders	3:30pm	Using 'omics' to understand mitochondrial adaptations to different types of exercise	David J. Bishop			
3:45pm	Is loss of GFRAL neurons protective in a mouse model of cancer cachexia?	Yunpeng Liu						
4pm	Targeting AMPK to improve survival in a colon-26 mouse model of cancer	Emily S. Haber	4pm	Mitochondrial redox regulation in adaptation to exercise	Sophie C. Broome			
4:15pm	Regulation of a Novel Splice Variant of Early Growth Response 4 (EGR4-S) by HER+ Signalling and Heat Shock Factor 1 in Breast Cancer	Jeremy M. Drake						
4:30pm	Phosphorylation of dystrophin S3059 protects against skeletal muscle wasting in mice	Kristy Swiderski	4:30pm	Regulating the powerhouse – removing mitochondrial bias and avoiding some of the pitfalls in exercise proteomics	Nikeisha J. Caruna			
4:45pm	Dysferlinopathy and myofibre-type specific differences: Further investigation of protein and functional changes in dysferlin-deficient muscles	Erin M. Lloyd						

Lunch and Posters

Greg Craven Centre (Building 421, Level 7)

Poster 1	Hannah Lalunio	Empagliflozin may positively affect advanced dystrophic muscle
Poster 2	Irene Tsioutsias	LPS-induced skeletal muscle dysfunction is not caused by neutrophil derived reactive oxygen species
Poster 3	Navabeh Zare-kookandeh	Investigating the Effects of Exercise Intensity on Muscle-derived Mediators of Neuroprotection
Poster 4	Aneta Stefanidis	The dichotomy of bariatric surgery: Investigation of the metabolic benefits and adverse behavioral outcomes - insights from an animal model
Poster 5	Zhenhuan Wang	Physiological responses to graded exercise testing and high-intensity interval exercise under normoxia and hypoxia in trained and untrained individuals
Poster 6	Gizel Ruiz	Interrogating skeletal muscle plasticity in response to growth and oxidative stimuli
Poster 7	Wayne X. Du	Unravelling the role of deubiquitinase Ubiquitin-Specific-Protease-15 in skeletal muscle
Poster 8	Yanie Tan	The long non-Coding RNA OIP5-AS1 is sufficient but not necessary for skeletal muscle differentiation in murine models
Poster 9	Jin D. Chung	Intrinsic muscle stem cell dysfunction in Akita mice, a model of type 1 diabetes
Poster 10	Michael S.M. Mah	Contribution of intestinal ceramides to whole-body metabolic dysfunction
Poster 11	Zijing Zhou / Charles D. Cox	MyoD-family inhibitor proteins act as auxiliary subunits of PIEZO channels
Poster 12	Danush Murali	Eccentric contractions, passive stretches and redox modulation increase nuclear translocation of mechanosensitive transcription factor yes-associated protein in fast-twitch skeletal muscle fibres
Poster 13	Yaan-Kit Ng	Affinity purification-mass spectrometry and single fibre proteomics reveals mechanistic insights of C18ORF25
Poster 14	Lily J. Pearson	Mapping the diversity of neuronal populations in the inner ear
Poster 15	Benjamin Strahan	A Hypothalamic circuit regulates immunity in accordance with whole-body energy balance
Poster 16	Melissa E. Reichelt	AAV-targeting of cardiomyocytes to protect hearts from Trastuzumab-induced cardiomyopathy
Poster 17	Olivia JT Smith	Examination of Mitochondrial calcium uniporter complex proteins in the mdx mouse model of Duchenne muscular dystrophy
Poster 18	Ronnie Blazev	Characterising the role of UFMylation in skeletal muscle
Poster 19	Nicholas Giourmas	Therapeutic effect of β -Hydroxy- β -Methylbutyrate supplementation on the mdx mouse phenotype
Poster 20	Shanie Landen	Mechanisms underlying sex differences in Parkinson's disease