

MEDSCI NZ

PROGRAMME

2019

ORGANISING COMMITTEE

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Dr Joanne Davidson (Co-Chair)

A/Prof Rebecca Campbell (Co-vice chair)

Dr Jeff Erickson (Co-vice chair)

A/Prof Rajesh Katare (PSNZ)

Prof Allan Herbison (CNE)

Dr Rosemary Brown (CNE)

Prof Greg Anderson (NZSE)

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Dr June-Chiew Han (ABI)

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Monday 2nd Sept 2019
QRW Opening Night Speaker

4:00 – 6:00	<p>MEDSCI POSTER SESSION</p> <p><i>Sponsored by New England Biolabs</i></p> <p>Rydges Hotel</p>
<p><u>Queenstown Research Week Opening Night and Plenary Session</u> <i>sponsored by University of Otago</i></p>	
6.00pm – 6.10pm	<p>Welcome: Peter Shepherd <i>University of Auckland</i></p>
6.10pm – 6.25pm	<p>Official Opening: Prof Gary Evans <i>Victoria University and Chief Science Advisor, MBIE</i></p>
6.25pm – 6.30pm	<p>Plenary Introduction: Nikki Moreland <i>Sponsored by Abacus dx</i> <i>University of Auckland</i></p>
6.30pm – 7.30pm	<p>Professor Joan Steitz 2018 Lasker Award winner for her pioneering role in expanding our understanding of RNA biology and her lifelong advocacy for inclusion of women in the sciences <i>Yale University, New Haven, USA</i></p>
7:30 – 9.00pm	<p>Opening night mixer <i>Sponsored by Abcam</i></p>

Tuesday 3rd Sept 2019
MedSci Plenary Lectures, Societies' Presentations

MedSci Plenary Lecture Queenstown Room

9.00 am -	MedSci Plenary Lecture: Prof John Osborn Title: New insights into kidney-brain communication in cardiovascular disease Chair: Julian Paton
10.00 am	

10.00 am - 10.30 am	Morning Tea: Trade Exhibition Area, Level 4
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Societies' Presentations

10.30 am - 12.30 pm	<p>Session 1A: PSNZ Bullivant Prize Finalists</p> <p>Clancys Room, Level 5 Chairs: Marie Ward & Rohit Ramchandra</p>	<p>Symposium 1B (NZSE): Perspectives and problems of puberty</p> <p>Room: Dart Room, QT Building Chairs: Rosie Brown and Teodora Georgescu</p>
10.30 am - 10.45 am	<p>1A.1 Bullivant Prize Contestant 1: Marco Annandale Experimental evidence of substrate-driven fructolysis in cardiomyocytes in vitro – implications for diabetic cardiomyopathy.</p>	<p>1B.1 Alistair Gunn (University of Auckland) Houston we have lift off...and the countdown hasn't even started yet!</p>
10.45 am - 11.00 am	<p>1A.2 Bullivant Prize Contestant 2: Hamish Atken-Buck Long-chain acylcarnitines as acute modulators of human atrial muscle function</p>	
11.00 am - 11.15 am	<p>1A.3 Bullivant Prize Contestant 3: Caroline Focke Do hypothalamic CRH neurons express circadian and ultradian activity patterns?</p>	<p>1B.2 Karen MacKenzie (University of Otago, Christchurch) Failure to Launch – a clinical guide to delayed puberty</p>
11.15 am - 11.30 am	<p>1A.4 Bullivant Prize Contestant 4: Mridula Pachan Hyperoxia reduces coronary blood flow in ovine heart failure</p>	
11.30 am - 11.45 am	<p>1A.5 Bullivant Prize Contestant 5: Tracy Zhang The challenge of anaesthesia during ischaemic stroke: haemodynamic observations in normotensive and hypertensive rats</p>	<p>1B.3 Greg Anderson (University of Otago) Beyond leptin and fat: multiple metabolic modulators of pubertal timing</p>
11.45 am - 12.00 pm	<p>1A.6 Bullivant Prize Contestant 6: Anna Krstic Ca²⁺ handling in cardiomyocytes: does adaptive hypertrophy modify the response to inotropic stimulation?</p>	
12.00 am - 12.15 pm	<p>1A.7 Bullivant Prize Contestant 7: Timothy Jones Arrhythmogenic calcium release events in isolated human atrial trabeculae</p>	<p>1B.4 Victor Navarro (Harvard University) <i>sponsored by Thermo Fisher Scientific</i> Control of puberty onset by neuroendocrine pathways upstream of Kiss1 neurons</p>
12.15 pm - 12.30 pm	<p>1A.8 Bullivant Prize Contestant 8: Shivani Sethi Central Regulation of the Diabetic Heart</p>	
12.30 pm	PSNZ AGM – Clancy's Room	NZSE AGM – Dart Room

12.30 pm – 1.30 pm	Lunch: Trade Exhibition Area, Level 4, Rydges Hotel
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MedSci Plenary Lecture Clancys Room

1:30 pm – 2:30 pm	MedSci Plenary Lecture: Prof Herbert Herzog. <i>Sponsored by Abacus dx</i> Title: Stress and obesity - insights from the NPY system Chair: Dave Grattan
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Societies' Presentations			
2:30 pm – 3:30 pm	Session 2A PSNZ Hubbard Prize Finalists Clancys Room, Level 5 Chairs: Kim Mellor & Carolyn Barrett	Symposium 2B (NZSE): NZSE Nancy Sirett Lecture and Student Oral Award Finalists (<i>sponsored by Medi'Ray</i>) Room: Dart Room, QT Building Chair: Greg Anderson & Ryan Paul	
2:30 pm – 3:00 pm	2A.1 Hubbard Prize Contestant: Bradley Jamieson (University of Otago) Projections of suprachiasmatic nucleus vasopressin neurons regulate preoptic kisspeptin neuron electrical activity	2B.1 NZSE Nancy Sirett Lecture Graham Barrell (Lincoln University) Lessons From the Large Animals	
3:00 pm – 3:30 pm	2A.2 Hubbard Prize Contestant: Parisa Koutsifeli (University of Auckland) Characterizing the role of glycogen autophagy in regulating glycogen content in diabetic cardiomyocytes	2B.2 NZSE Prize Finalist: Eleni Hackwell (University of Otago) Prolactin action on kisspeptin neurons is required for maintaining lactational infertility. 2B.3: NZSE Prize Finalist: Judith Swart (University of Otago) The effect of reproductive experience on maternal motivation	
3.30 pm – 4.00 pm	Coffee Break: Trade Exhibition Area, Level 4, Rydges Hotel		
Societies' Presentations			
4.00 pm – 6.00 pm	Session 3A: Free Communications and PSNZ Presentations/Awards Clancys Room, Level 5 Chairs: Rebecca Campbell & Jeff Erickson	Symposium 3B: (Sport Ex & Nut., Massey) New insights into the cellular and molecular regulation of aging muscle Room: Dart Room Chairs: David Rowlands & Navneet Lal	Symposium 3C: (Auckland Bioengineering Institute) Computational and experimental physiology of our various organ systems Room: Rees Room Chairs: June-Chiew Han & Kenneth Tran
4:00 pm – 4:30 pm	3A.1 New & Emerging Researcher Prize Contestant: Carol Bussey (University of Otago) Cardiac-specific sympathetic and vagal parasympathetic nerve activity in circadian heart rate rhythm	3B.1 Phil Sheard (Otago University) <i>Sponsored by Bio-Strategy Ltd</i> Is sarcopenia a neurodegenerative disease?	3C.1 Kenneth Tran (Auckland Bioengineering Institute) Exploring cardiac energetics through the lens of computational modelling
4:30 pm – 5:00 pm	3A.2 New & Emerging Researcher Prize Contestant: Michelle Munro (University of Otago) Resolving the role of dyadic organisation in cardiac dysfunction	3B.2 Paul Gregorevic (Melbourne University) Exploring novel mechanisms regulating muscle mass in health, disease and ageing	3C.2 Martyn Nash (Auckland Bioengineering Institute) Relating microstructural remodeling and ventricular mechanics in heart failure
5:00 pm – 5:30 pm	Free Communications: 3A.3 Julia Shanks	3B.3 Nir Eynon (Victoria University, Melbourne)	3C.3 Jichao Zhao (Auckland Bioengineering Institute)

	<p>Sympathomodulation in heart failure: A role for stellate ganglia Nrf2.</p> <p>3A.4 Debra Fong Defending Blood Flow to the Selfish Brain: Evaluating Dynamic Cerebral Autoregulation in the Conscious Rat</p>	<p>Developing epigenetic biomarkers of healthy ageing</p>	<p>Novel computerized analysis to improve our understanding and treatment of atrial fibrillation</p>
5:30 pm–6:00 pm	<p>3A.5 Tonja Emans Optimizing Reperfusion and Recovery from Ischemic Stroke: Preliminary Data</p>	<p>3B.4 Kim Mellor (Auckland University) Cardiomyocyte functional adaptations with aging and disease</p>	<p>3C.4 Alys Clark (Auckland Bioengineering Institute) <i>In silico</i> models of pregnancy and the uterine blood vessels: from <i>in vitro</i> cell culture to the <i>in vivo</i> organ</p>
6:00 pm–6:30 pm			<p>3C.5 Tim Angeli (Auckland Bioengineering Institute) Understanding the gut through translational physiology: bioengineering benchtop to clinical bedside</p>
7.00 pm	<p>MedSci Dinner + Prize-giving Prime Restaurant 8 Rees St, Queenstown</p>		

Wednesday 4th Sept 2019
MedSci Plenary Lecture, Societies' Presentations

MedSci Plenary Lecture Queenstown Room

9.00 am - 10.00 am **MedSci Plenary Lecture:** Prof Rosalind John
Title: Genomic Imprinting influences maternal behaviour and life long health
Chair: Rosie Brown

10.00 am - 10.30 am **Morning Tea: Trade Exhibition Area, Level 4**

Societies' Presentations

10.30 am - 12.30 pm	Symposium 4A (PSNZ): Novel insights into cerebral blood flow dysregulation in cardiovascular disease. Dart Room, Level 5 Chairs: Julian Paton & Shieak Tzeng	Symposium 4B (CNE): Homeostatic neural circuits Room: Queenstown Room Chairs: Karl Iremonger & Elodie Dezrosiers	Session 4C: Free Communications Room: Rees Room Chairs: David Crossman & Amelia Power
10.30 am – 11:00 am	4A.1 Kevin Shoemaker (University of Western Ontario) Large cerebral artery contributions to cerebral perfusion in health and heart disease	4B.1 Stephanie Padilla (Massachusetts Amherst University) Kiss1 Neurons in the Arcuate Nucleus of the Hypothalamus are a Hub for Metabolic, Temperature and Neuroendocrine Outcomes.	4C.1 Chris Charles A Porcine Model of Heart Failure with Preserved Ejection Fraction: Characterization with MRI and Metabolic Energetics 4C.2 David Rowlands Utility of the 13C-breath (RATIO) method to track changes in fat-oxidation maxima during intense cycling exercise following glycogen manipulation by acute dietary intervention
11.00 am – 11:30 am	4A.2 Philip Allan (Otago University & CCDHB) New approaches to assessing and optimising cerebral perfusion	4B.2 Zane Andrews (Monash University). <i>Sponsored by Abacus dx</i> Hunger-sensing Agrp neurons link metabolic and motivational states	4C.3 Tumanu Futi Cardiac Fibrosis is not Associated with an Earlier Requirement of Surgical Cardiac Intervention in Māori and Pacific Patients 4C.4 Isabel Nguyen Sodium thiosulfate improves renal function and oxygenation in L-NNA induced hypertensive rats
11.30 am - 12.00 pm	4A.3 Fiona McBryde (Auckland University) Blood pressure and cerebral perfusion after stroke	4B.3 Stuart McDougall (Floreys Institute) Neurophysiology of viscerosensory circuits	4C.5 Lorna Daniels Elevated cardiac fructose content may contribute to lipid accumulation in the diabetic heart
12.00 pm - 12.30 pm	4A.4 James Fisher (Auckland University) Cerebrovascular dysfunction in atrial fibrillation	4B.4 Joon Kim (University of Otago) Stress experience and hormone feedback tune distinct components of hypothalamic CRH neuron activity	

12:30 pm	MedSci AGM – Queenstown Room		
12.30 pm – 1.30 pm	Lunch: Trade Exhibition Area, Level 4, Rydges Hotel		
Societies' Presentations			
1.30 pm - 3.30 pm	Symposium 5A (PSNZ): New Concepts and Emerging Therapies for Cardiac Dysfunction Clancys Room, Level 5 Chairs: Yonis Akubar & Alona Ben-Tal	1.30 pm - 3.30 pm	Symposium 5B (CNE): Hypothalamic regulation of behaviour Room: Dart Room, QT Building Chairs: Rachael Augustine & Kristina Smiley
1.30 pm – 2:00 pm	5A.1 Shane Nanayakkara (Baker Heart & Diabetes Inst.) Heart failure with preserved ejection fraction: improving diagnosis and management	1.30 pm – 2:00 pm	5B.1 Sarah Lockie (Monash University) Ghrelin and AgRP neurons in control of memory and appetite
2.00 pm – 2:30 pm	5A.2 Martin Stiles (Waikato Heart & University of Auckland) Targeting the substrate in ablation of persistent atrial fibrillation: recent lessons and future directions	2.00 pm – 2:30 pm	5B.2 Anica Klockars (University of Waikato) Differential responses to anorexigenic drugs in the valproic acid model of autism spectrum disorders in rats
2.30 pm - 3.00 pm	5A.3 Alona Ben-Tal (Massey University) New approach for modelling the cardio-respiratory system	2.30 pm - 3.00 pm	5B.3 Sharon Ladyman (Otago University) Contribution of central prolactin receptors to changes in energy homeostasis during pregnancy and lactation
3.00 pm - 3.30 pm	5A.4 Yonis Abukar (Auckland University) The role of respiratory sinus arrhythmia in modulating heart function during heart failure	3.00 pm - 3.30 pm	5B.4 Oliver Bosch (University of Regensburg, Germany). <i>Sponsored by Abacus dx</i> Why mom doesn't care: maternal neglect is caused by an increased brain CRF system activity
3:30 pm – 4:00 pm	Afternoon Tea		
Societies' Presentations			
4.00 pm - 6.00 pm	Symposium 6A (PSNZ): Novel targets and diagnostics in cardiovascular disease: from discovery science to clinical application Clancys Room, Level 5 Chairs: Kim Mellor & Lorna Daniels	4.00 pm - 6.00 pm	Symposium 6B: Free Communications & Info Blitz Presentations Room: Dart Room Chairs: Chris Coyle & Kate Lee
4.00 pm – 4.30 pm	6A.1: Enzo Porrello (Murdoch Children's Research Institute, Melbourne) <i>sponsored by New England Biolabs</i> Human pluripotent stem cell-derived cardiac organoids for accelerated drug discovery	4.00 pm - 4.15 pm	6B.1: Michael Pankhurst Changes in anti-Müllerian hormone levels during pregnancy and the postpartum period
		4:15 pm – 4:30 pm	6B.2: Emma Buckels Preptin knockout mice have increased bone volume without overt metabolic changes
4.30 pm – 5.00 pm	6A.2: Julian Paton (Auckland University) Novel drug targets for treatment of hypertension	4:30 pm - 4:45 pm	6B.3: Brya Matthews Identification of osteoprogenitor cells in the mouse periosteum
		4:45 pm – 5:00 pm	6B.4: Raewyn Poulsen IL-1 β causes osteoarthritis-like changes in the chondrocyte circadian clock by activation of the NMDA receptor/CREB and CaMK2 pathways

5.00 pm – 5.30 pm	6A.3: Alana Whitcombe (Auckland University) Assessing the utility of multiplex bead-based immunoassays in the diagnosis of rheumatic fever	5.00 pm - 5.30 pm	6B.5 NZSE Emerging Researcher Award: Kristina Smiley (Otago University) Identifying a novel role for prolactin in the transition to paternal care
5.30 pm – 6:00 pm	6A.4: Amelia Power (Otago University) Nitric oxide in the heart: a moderator of β -adrenergic signalling?	5:30 pm - 6:00	Info Blitz 6B.6 Amy Ruddenklau Role of central progesterone signalling in PCOS pathology 6B.7 Christopher Veitch The Alpha-Adrenergic System and CaMKII in Diabetic Arrhythmia 6B.8 Erica R Hendrikse Exploring Expression of CGRP Receptors in Rat Brain; Implications for Migraine 6B.9 Dhananjie Chandrasekera Understanding the role of altered microRNA cargo in pericardial fluid exosomes in the diabetic heart 6B.10. Yeri Rim Investigating Suprachiasmatic Neuromedin S Neuronal Projections to Kisspeptin Neurons in the RP3V
7.00 pm – 9.00 pm	Mixer & Fashionomics <i>sponsored by Thermo Fisher Scientific</i>		

MedSci Abstracts

Summary of Poster Abstracts

No.	Presenter	Title
Physiological Society of New Zealand Posters (*PSNZ Student Poster Presentation Prize candidate)		
M1	Grace Belworthy*	Circadian regulation of pacemaker proteins in the right atrium
M2	Jenny Clarkson	In vivo population activity of RP3V kisspeptin neurons across the mouse estrous cycle
M3	Chris Coyle	Androgen receptor expression across the estrous cycle in the hypothalamus and new methods for its targeted deletion.
M4	Vasu Singh	Effects of Uptake-2 blockers on rat locomotion
M5	Aisha Sati*	The impact of prenatal androgen excess on microglia in the female mouse brain
M6	Elodie Desrozier	Prenatal androgen excess impairs sexual behavior in adult female mice: perspective on sexual dysfunction in PCOS
M7	Anthony Yee-Goh*	Adipose Stem Cells Versus Cardiac Progenitor Cells: The Better Candidate for Cardiovascular Disease
M8	Igor Felipe*	Selective chemoreceptor hyperreflexia evoked after sympathetic stimulation
M9	Emily Brown*	Mechanosensitivity of TRPV channels; implications for vasopressin neuron activity
M10	Daniel Lavin	Is GLUT9 expression dependent on specific p53 isoforms
M11	Chantelle Murrell*	Distribution of O-GlcNAc in Glucose Sensing Areas of the Rat Brain
M12	Mehwish Abbasi*	Local kisspeptin regulation of oxytocin neuron activity in late pregnancy
M13	Nima Afshar	Computational Modelling of Glucose Uptake in Small Intestine Using CellML
M14	Jarrah Dowrick*	Type II diabetes disrupts beat-to-beat cardiac myofilament calcium sensitivity
M15	Chris Sohn*	Purinergic Antagonism of the Carotid Body Chemoreceptors as a Novel Drug Target for Hypertension
M16	Chris Marshall*	Examining alterations to arcuate nucleus NPY neurons and their neural projections in a mouse model of polycystic ovary syndrome
M17	Cherokee Walters*	The Effect of Rab7 on the Trafficking of the Epithelial Sodium Channel
M18	Rachel Lund*	An Androgen Sensitive Bioassay Optimized for Clinical Purposes
M19	Samuel O'Hara*	The Role of CaMKII in Vascular Smooth Muscle Cell Migration and Atherosclerotic Plaque Development
M20	Lucas Hinton*	Role of protein kinase CK2 in regulation of the cardiac Ryanodine Receptor
M21	Bindu George*	Characterisation of autonomic imbalance in an ovine model of renovascular hypertension

M22	Leena Shoemaker*	Effect of Cerebral Blood Flow on Cognition Across Healthy Adulthood
M23	Angela Greenman*	Reduced calcium sensitivity occurs without differential total myofilament phosphorylation in a diabetic rat model
M24	Vikash Kumar Shah*	Epithelial Sodium Channel (ENaC): Mediator of the aldosterone induced stiffness in endothelial cells.
M25	Nandini Bavana*	Pharmacological modulation of the membrane trafficking of the water channel AQP5 in the rat lens
M26	Sarah Fong*	Metabolic syndrome impairs colocalization of ryanodine receptors and L-type calcium channels within atrial myocytes
M27	Venkata Satthenapalli	Temporal inhibition of Retinoic acid signaling promotes ventricular-specific cardiac differentiation of mouse embryonic stem cells without spontaneous contraction.
NZSE		
M28	William Aye	Analysis of Ca ²⁺ Imaging in Rat Adrenal Medullary Slices
M29	Siew Hoong Yip	Elevated Prolactin during Pregnancy Drives a Phenotypic Switch in Mouse Hypothalamic Dopaminergic Neurons
M30	Yugo Watanabe	Investigating changes in androgen and progesterone receptor expression in the aetiology of PNA-induced polycystic ovary syndrome
M31	Teodora Georgescu	Investigating the acute effects of prolactin upon hypothalamic prolactin-receptor expressing neurons
M32	Adriana Saraiva	Bone remodelling regulation during lactation – the role of prolactin and its receptors
M33	Asha Mamgain	Identifying the role of RFRP neurons in stress induced anovulation
Med Sci Posters (no affiliation)		
M34	Shaleka Agrawal	Functional and structural mapping of atrial arrhythmogenesis in metabolic syndrome
M35	Xinhui Liu	Regulation of calcium in the GnRH neuron dendrons near the median eminence
M36	Alexander Seymour	TRPV channels reset the threshold for vasopressin neuron activation in pregnant rats
M37	Erica Hendrikse	Exploring Expression of CGRP Receptors in Rat Brain; Implications for Migraine
M38	Abigail Bland	An Old Drug for New Tricks; Metformin as a Chemotherapeutic Agent for Lung Cancer.
M39	Stephanie Thwaite	Can we protect hypertrophic hearts against ischaemia-reperfusion injury using carbon monoxide?
M40	Rachael Augustine	Do mice with gestational glucose intolerance have increased O-linked glycosylation in the brain?
M41	Hollian Phillipps	Characterisation of plasma prolactin levels during proestrus in mice
M42	Nensi Shrestha	Toxicity and Efficacy of crizotinib and selumetinib combination therapy in in vivo xenograft model of ALK-positive lung cancer
M43	Lewis Forrester	Maternal Obesity and the Development of Oligodendrocytes in the Offspring
M44	Ji Woo Kim	Does uric acid control expression of p53 isoforms?
M45	Lanqiaozi Shuang	Effects of Shear Stress and Carbon Monoxide on Epithelial Sodium Channels

M46	Simon John-McHaffie	Activin C in prostate cancer: a potential treatment?
M47	Romy Kerbus	Characterisation of metabolic and reproductive dysfunction in two PCOS mouse models
M48	Dong Hoon Choi	Why does contractile stress produced by isolated cardiac trabeculae decrease with increasing muscle cross-sectional area?
M49	Andy Lo	Afterdepolarizations and abnormal calcium handling in impaired TBX5 atrial myocytes
M50	Kate Lee	Gender and strain-specific phenotypes of CREBRF variant in mouse models.
M51	Michael Garratt	17- α estradiol ameliorates age-associated sarcopenia and improves late life physical function in male mice but not in females or castrated males
M52	Mohammed Rizwan	Region-specific deletion of beta-catenin leads to impaired glucose tolerance and increased bodyweight
M53	Zin Khant Aung	Peripartum prolactin and growth hormone concentrations in diet-induced obese mice
M54	Cassie Clark	Role of GALP neurons in conveying leptin signals for reproduction