



# Otago Spotlight Series Cardiovascular disease

Tuesday 20 September, 2016  
9.00am – 3.30pm  
Nordmeyer Lecture Theatre  
University of Otago, Wellington

# Welcome

Tēnā koutou kātoa. I would like to extend a very warm welcome to the Otago Spotlight Series: Cardiovascular Disease Symposium. This is the second event in a series at which we are showcasing the research strengths in health sciences at the University of Otago. We are delighted to share our world-class research into cardiovascular disease (CVD) with you today.

The Division of Health Sciences at the University of Otago has an enviable reputation for research excellence and innovation. Our ground-breaking research underpins many advances in health policy and practice and the understanding of health and disease, both here in New Zealand, and globally.

Otago has significant depth and breadth in cardiovascular disease research. Our staff are leaders in the fields of CVD epidemiology, control and prevention, risk prediction, genetics, and the development of new diagnostics and treatments. We have expertise in health inequalities and in Māori and Pacific health, and are dedicated to undertaking research relevant to New Zealand's unique population groups.

Reducing the burden of CVD is a key priority for New Zealand. This can only be achieved by partnering with stakeholders and communities, and generating world-class research, and translating our research findings into innovative health policy, practice and technologies.

Today, stakeholders will have the chance to meet with researchers and to discuss the future of CVD research in New Zealand – its needs and its priorities. We would value your input on what you see as key priorities for the future of cardiovascular research in New Zealand.

I would like to thank today's speakers and attendees and I encourage you to keep in touch.



Professor Peter Crampton

PRO-VICE-CHANCELLOR  
DIVISION OF HEALTH SCIENCES  
UNIVERSITY OF OTAGO

# Cardiovascular Disease Research at Otago: Setting the Scene

Mortality from coronary heart disease and stroke has been declining over the past 40 years or so in New Zealand and many other relatively affluent westernised societies. It is difficult to disentangle the possible explanations, but improved treatment of those experiencing an acute event, early detection, better management of risk factors, and population measures which have helped to achieve a reduction in cigarette smoking and cholesterol levels, have undoubtedly all contributed.

While encouraging, these trends do not support complacency. CVD remains a leading cause of premature mortality and serious ill-health worldwide. This is true for many countries and population groups with previously low CVD rates, and in ageing populations – even in the presence of falling rates overall. Particularly worrying is the trend towards a changing pattern of risk factors for CVD. Obesity and diabetes have long been known to be associated with an increased risk of CVD. With these diseases having reached epidemic proportions in New Zealand and elsewhere, they are becoming increasingly important causes of CVD. Failure to reverse the epidemics of obesity and diabetes has the potential to undermine the health gains which have been achieved in terms of reducing the overall burden of CVD in recent times.

The University of Otago has a proud history of CVD research. Sir Horace Smirk was appointed to the Chair of Medicine at Otago in 1942. He was a pioneer in the treatment of hypertension with ganglion-blocking drugs such as hexamethonium and has received considerable credit for his contribution to establishing the benefits of treating raised blood pressure. Research in this field was continued by Professor Olaf Simpson who provided much of the crucial evidence underlying the current therapeutic treatments for hypertension. In the 1950s, Professor John Hunter was responsible for one of the early case control studies of myocardial infarction which demonstrated the importance of cholesterol as a risk factor. World leading lipid research continued when he was joined by Professor Ted Nye who was also a pioneer in the field of cardiac rehabilitation.

Today's talks will provide a snapshot of the CVD research being carried out by a new generation of researchers at Otago – both established scientists and emerging researchers. The talks will address questions from across the CVD continuum and provide examples of our progress in prevention, risk prediction, the development of new diagnostic tools and treatments, and the logistics of delivering affordable, equitable patient care in a tightly constrained healthcare system.

Thank you for attending today and we value any input you might wish to share with us.



Professor Jim Mann  
DEPARTMENTS OF MEDICINE AND HUMAN NUTRITION  
UNIVERSITY OF OTAGO

# Programme

9.00-9.15am Mihi

## Session One

- 9.15-9.40 Professor Jim Mann (Medicine, Dunedin School of Medicine)  
**Overview and nutrition research**
- 9.40-10.00 Professor Nick Wilson (Public Health, University of Otago, Wellington)  
**Modelling the impact of tobacco control interventions**
- 10.00-10.20 Dr Rachael McLean (Preventive and Social Medicine, Dunedin School of Medicine)  
**Dietary salt and cardiovascular disease: Evidence to policy**
- 10.20-10.40 Professor Sally McCormick (Biochemistry, Otago School of Medical Sciences)  
**Lipoproteins in heart disease**
- 10.40-11.15 **Morning Tea**

## Session Two

- 11.15-11.35 Dr Pete Jones (Physiology, Otago School of Medical Sciences)  
**Understanding arrhythmias**
- 11.35-11.55 Dr Anna Pilbrow (Medicine, University of Otago, Christchurch)  
**Discovering new risk markers for heart disease in 'junk DNA'**
- 11.55-12.15 Professor Vicky Cameron and Dr Allamanda Faatoese (Medicine, University of Otago, Christchurch)  
**Understanding cardiovascular risk in Māori and Pacific peoples**
- 12.15-12.35 Professor Tony Blakely and Dr Nisha Nair (Public Health, University of Otago, Wellington)  
**Sodium reduction and aortic aneurysm screening interventions – what might the health impact be?**
- 12.35-1.40 **Lunch**
- 1.00 **Tour of the environmental chamber, Centre for Translational Physiology**

## Session Three

- 1.40-2.00 A/P Shieak Tzeng (Surgery, University of Otago, Wellington)  
**Translating waveforms and protons into acute stroke management**
- 2.00-2.20 Professor Andre van Rij (Surgical Sciences, Dunedin School of Medicine)  
**Aortic aneurysm screening**
- 2.20-2.40 Student presenters
- 2.40-3.00 Professor Mark Richards (Medicine, University of Otago, Christchurch)  
**Improving diagnostic, prognostic and therapeutic biomarkers in heart disease**
- 3.00-3.30 Discussion involving Dr Gerry Devlin from the National Heart Foundation and wrap up
- 3.30 **Afternoon Tea**
- 4.00 Taxis depart for flights to Dunedin and Christchurch

# Contribute your views on Cardiovascular Disease Priorities

The Healthier Lives – *He Oranga Hauora* National Science Challenge is a national research collaboration dedicated to achieving healthier lives for all New Zealanders. The key to this is delivering the right prevention to the right population and the right treatment to the right patient.

Healthier Lives is working on the prevention and treatment of four of New Zealand's main non-communicable diseases:

- Cancer
- Cardiovascular disease
- Diabetes
- Obesity

Together, with others working in these fields, we will contribute to New Zealand's commitment to achieving the World Health Organisation goals of:

- Reducing the health burden of non-communicable diseases by 25% by 2025
- Reducing health inequalities between populations by 25% by 2025

We plan to do this in partnership with stakeholders and communities by generating world-class research, and translating our research findings into innovative health policy, practice and technology, designed for New Zealand's unique communities.

Healthier Lives has a major CVD research project underway and, in partnership with the Ministry of Health and the Health Research Council of New Zealand, is currently seeking proposals for further research into long term conditions. We are also looking ahead to identify gaps in the landscape where more research is needed. We would love to hear your views about the most important priorities for CVD research in New Zealand over the next 5 years.

Contribute your views at: [healthier.lives@otago.ac.nz](mailto:healthier.lives@otago.ac.nz)

Further information: [healthierlives.co.nz/](http://healthierlives.co.nz/)

National  
**SCIENCE**  
Challenges

HEALTHIER  
LIVES

He Oranga Hauora

# Human Environmental Chamber

The Global Energetics and Environmental Simulation Suite (GENESIS) is a new research facility developed to support research into environmental disease interactions at the Centre for Translational Physiology, University of Otago, Wellington. GENESIS is capable of simulating temperatures from -10 to +50 degrees Celsius, 10-95% relative humidity and simulated altitude of up to 5400 metres. Additionally, GENESIS is equipped with precision gas sensors for monitoring human energy expenditure and whole body metabolism.

For information on how to access the facility for research, athletic training or commercial applications please contact the Facility Manager at: [ctp.wellington@otago.ac.nz](mailto:ctp.wellington@otago.ac.nz).

A guided tour of the facility will take place at 1pm.



# Entries for the Student Poster Competition

POSTER NUMBER	TITLE, AUTHOR, DEPARTMENT
1	<b>RECYCLING OF APOLIPOPROTEIN(a) AFTER PlgRKT-MEDIATED ENDOCYTOSIS OF LIPOPROTEIN(a)</b> <b>Monika Sharma<sup>1</sup>, Greg Redpath<sup>1</sup>, Michael Williams<sup>2</sup>, Sally McCormick<sup>1</sup></b> <sup>1</sup> Department of Biochemistry, Otago School of Medical Sciences. <sup>2</sup> Department of Medicine, Dunedin School of Medicine
2	<b>DOES AUTONOMIC DYSREGULATION REDUCE CARDIAC RESERVE IN TYPE 2 DIABETES?</b> <b>Genevieve Wilson<sup>1</sup>, Luke Wilson<sup>1</sup>, Regis Lamberts<sup>2</sup>, Kamran Majeed<sup>3</sup>, Sudish Lal<sup>1</sup>, Gerard Wilkins<sup>1</sup>, James Baldi<sup>1</sup></b> <sup>1</sup> Department of Medicine, Dunedin School of Medicine; <sup>2</sup> Department of Physiology, Otago School of Medical Sciences; <sup>3</sup> Royal Adelaide Hospital, Adelaide, Australia
3	<b>CaMKII MEDIATES VASCULAR SMOOTH MUSCLE CELL ACTIVATION CENTRAL TO THE DEVELOPMENT OF ATHEROSCLEROSIS</b> <b>Luke Worthington, Jeff Erickson, Alison Heather</b> Department of Physiology, Otago School of Medical Sciences
4	<b>CaMKII INHIBITION RESTORES CONTRACTILE PERFORMANCE IN CARDIAC MUSCLE FROM A RAT MODEL OF TYPE 2 DIABETES</b> <b>Lorna Daniels, Regis Lamberts, Fiona McDonald, Jeff Erickson</b> Department of Physiology, Otago School of Medical Sciences and Heart Otago, University of Otago
5	<b>RARE GENETIC VARIANTS IN THE LOW-DENSITY LIPOPROTEIN RECEPTOR-RELATED PROTEIN 2 (LRP2) GENE CONFER RISK FOR HYPERURICAEMIA IN NEW ZEALAND POLYNESIANS</b> <b>Tahzeeb Fatima<sup>1</sup>, James Boocock<sup>1</sup>, Tanya J Flynn<sup>1</sup>, Lisa K Stamp<sup>2</sup>, Nicola Dalbeth<sup>3</sup>, Hyon K Choi<sup>4</sup>, David B Mount<sup>5</sup>, Eli A Stahl<sup>6</sup>, Tony R Merriman<sup>1</sup></b> <sup>1</sup> Department of Biochemistry, Otago School of Medical Sciences; <sup>2</sup> Department of Medicine, University of Otago, Christchurch; <sup>3</sup> Department of Medicine, University of Auckland; <sup>4</sup> Institute for Genomics and Multiscale Biology, Icahn School of Medicine, New York; <sup>5</sup> Renal Divisions, Brigham and Women's Hospital and VA Boston Healthcare System, Harvard Medical School, Boston; <sup>6</sup> Division of Rheumatology, Allergy, and Immunology, Massachusetts General Hospital, Harvard Medical School, Boston
6	<b>QUALITATIVE EVALUATION OF PRIOR CARDIOVASCULAR RISK ASSESSMENT AND ITS EFFECTIVENESS IN PATIENTS PRESENTING WITH THEIR FIRST DIAGNOSIS OF ACUTE CORONARY SYNDROME</b> <b>Rosalind Poulgrain, Merrin Rutherford, Stewart Mann</b> Department of Medicine, University of Otago, Wellington
7	<b>HOT-WATER IMMERSION INCREASES LEG PERFUSION IN PERIPHERAL ARTERIAL DISEASE</b> <b>Kate Thomas<sup>1,2</sup> Andre Van Rij<sup>1</sup>, James Cotter<sup>2</sup></b> <sup>1</sup> Department of Surgical Sciences, Dunedin School of Medicine. <sup>2</sup> School of Physical Education, Sport and Exercise Sciences, University of Otago
8	<b>PHYSICAL INACTIVITY CONTRIBUTES TO CARDIOVASCULAR RISK IN ADULTS WITH SYMPTOMS OF OBSTRUCTIVE SLEEP APNOEA HYPOPNOEA SYNDROME</b> <b>Sarah Rhodes<sup>1</sup>, Ben Brockway<sup>2</sup>, Margot Skinner<sup>1</sup></b> <sup>1</sup> Centre for Health Activity and Rehabilitation Research, School of Physiotherapy, University of Otago, <sup>2</sup> Department of Medicine, Dunedin School of Medicine

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- 9      **ARE HIGH ALTITUDE POPULATIONS AT HIGH RISK OF HEART DISEASE?**  
**Nirmal Aryal, Stewart Mann, Mark Weatherall, Yadav Kumar, Deo Bhatta**  
Department of Medicine, University of Otago, Wellington
- 10     **INFLUENZA – THE HIDDEN TRIGGER FOR CARDIOVASCULAR DISEASES**  
**Trang QT Khieu, Michael Baker, Nevil Pierse, Lucy Telfar-Barnard**  
Department of Public Health, University of Otago, Wellington
- 11     **ANTIHYPERTENSIVE MEDICINES UTILISATION: A DECADE-LONG NATIONWIDE STUDY OF  
OCTOGENARIANS, NONAGENARIANS AND CENTENARIANS**  
**Sujita Narayan, Prasad Nishtala**  
Research in Pharmacoepidemiology (RiPE) Group, School of Pharmacy, University of Otago



# Attendees

Surname	First Name	Organisation	Email
Arcus	Kim	Heart Foundation	KimA@heartfoundation.org.nz
Aryal	Nirmal	Medicine UOW	nirmal.aryal@otago.ac.nz
Atkinson	June	Public Health UOW	june.atkinson@otago.ac.nz
Awmee	Devindra	Ministry of Health	devindra_awmee@moh.govt.nz
Bailey	Jennifer	Ministry of Health	Jennifer_Bailey@moh.govt.nz
Baldi	Chris	Medicine DSM	chris.baldi@otago.ac.nz
Barthow	Christine	Medicine UOW	christine.barthow@otago.ac.nz
Blakely	Tony	Public Health UOW	tony.blakely@otago.ac.nz
Boyd	Matt	Ministry of Health	Matt_Boyd@moh.govt.nz
Cameron	Vicky	Medicine UOC	vicky.cameron@otago.ac.nz
Chester	Sara	Ministry of Health	c/o Sophia_Faure@moh.govt.nz
Cleghorn	Christina	Public Health UOW	cristina.cleghorn@otago.ac.nz
Coleman	Karen	Radiation Therapy UOW	karen.coleman@otago.ac.nz
Coleman	Michele	Health Sciences Administration	michele.coleman@otago.ac.nz
Coleman	Lin	Capital Coast DHB	Lin.coleman@ccdhb.org.nz
Conner	James	Research & Enterprise Otago	james.conner@otago.ac.nz
Crampton	Peter	Health Sciences Administration	peter.crampton@otago.ac.nz
Cresswell	Pip	Capital Coast DHB	pip.cresswell@ccdhb.org.nz
Cunningham	Ruth	Public Health UOW	ruth.cunningham@otago.ac.nz
Daniels	Lorna	Physiology OSMS	danlo676@student.otago.ac.nz
Davies	Bronwyn	Capital Coast DHB	Bronwyn.davies@ccdhb.org.nz
Dension	Haley	Victoria University	Hayley.Denison@vuw.ac.nz
Devlin	Gerry	Heart Foundation	GerryD@heartfoundation.org.nz
Doolan-Noble	Fiona	General Practice & Rural Health DSM	fiona.doolan-noble@otago.ac.nz
Dunbar	Janet	Capital Coast DHB	Janet.dunbar@ccdhb.org.nz
Eng	Amanda	Massey University	AJ.Eng@massesy.ac.nz
Ewers	Gillian	Ministry of Health	c/o devindra_awmee@moh.govt.nz
Faatoese	Allamanda	Medicine UOC	allamanda.faatoese@otago.ac.nz
Fatima	Tahzeeb	Biochemistry OSMS	tahzeeb.fatima@otago.ac.nz
Faure	Sophia	Ministry of Health	Sophia_Faure@moh.govt.nz
Fleming	Kirsty	Roche Products Ltd	kirsty.fleming@roche.com
Galvin	Kerry	Health Sciences Administration	kerry.galvin@otago.ac.nz
Gray	Emily	School of Physiotherapy	emily.gray@otago.ac.nz
Greenwell	James	Ministry of Health	c/o Sophia_Faure@moh.govt.nz
Groves	Christine	Research & Enterprise Otago	christine.groves@otago.ac.nz
Harrison	Joanne	Pharmacology & Toxicology OSMS	joanne.harrison@otago.ac.nz
Jameson	Victoria	Research & Enterprise Otago	victoria.jameson@otago.ac.nz
Jones	Pete	Physiology OSMS	pete.jones@otago.ac.nz
Katare	Rajesh	Physiology OSMS	rajesh.katare@otago.ac.nz
Kelly	Bronwyn	Tertiary Education Commission	Bronwen.Kelly@tec.govt.nz
Khashram	Manar	Surgery UOC	manar.khashram@gmail.com
Khieu	Trang	Public Health UOW	khitr138@student.otago.ac.nz
Lane	Jonathan	MBIE	Jonathan.Lane@mbie.govt.nz
Lewis	Lynley	Medicine UOC	lynley.lewis@otago.ac.nz
Lyon	Jane	Ministry of Health	Jane_Lyon@moh.govt.nz
Majumder	Gitta	Capital Coast DHB	gitta.majumder@ccdhb.org.nz
Mann	Jim	Medicine DSM	jim.mann@otago.ac.nz
Marra	Carlo	School of Pharmacy	pharmacy.dean@otago.ac.nz
McCormick	Sally	Biochemistry OSMS	sally.mccormick@otago.ac.nz
McClean	Rachael	Preventive & Social Medicine DSM	rachael.mclean@otago.ac.nz
McNicholas	Anne	Ministry of Health	Anne_McNicholas@moh.govt.nz

Surname	First Name	Organisation	Email
Middleditch	Diane	Capital Coast DHB	Diane.middleditch@ccdhb.org.nz
Miharsa	Lea	Ministry of Health	c/o devindra_awmee@moh.govt.nz
Millar	Elinor	Hutt Valley DHB	Elinor.millar@huttvalleydhb.org.nz
Murphy	Chris	Capital Coast DHB	Chris.murphy@ccdhb.org.nz
Nair	Nisha	Public Health UOW	nisha.nair@otago.ac.nz
Narayan	Sujita	School of Pharmacy	sujita.narayan@otago.ac.nz
O'Hallahan	Jane	Ministry of Health	c/o Anne_McNicholas@moh.govt.nz
O'Reilly	Kate	Capital Coast DHB	Kate.o'reilly@ccdhb.org.nz
Peacock	Leigh	Well Heart	wellheart1@gmail.com
Pickthorne	Judy	Hutt Valley DHB	jude.pickthorne@huttvalleydhb.org.nz
Pilbrow	Anna	Medicine UOC	anna.pilbrow@otago.ac.nz
Poulgrain	Rosalind	Medicine UOW	pouro271@student.otago.ac.nz
Prickett	Tim	Medicine UOC	tim.prickett@otago.ac.nz
Read	Morgayn	Biochemistry OSMS	morgayn.read@otago.ac.nz
Rendle	Bronwyn	Ministry of Health	c/o Anne_McNicholas@moh.govt.nz
Rhodes	Sarah	School of Physiotherapy	rhosa130@student.otago.ac.nz
Richards	Mark	Medicine UOC	mark.richards@cdhb.health.nz
Rose	Deanna	Ministry of Health	c/o devindra_awmee@moh.govt.nz
Roseingrave	June	Wairarapa DHB	June.Roseingrave@wairarapa.dhb.org.nz
Ross	Cecilia	Capital Coast DHB	Cecilia.ross@ccdhb.org.nz
Safarti	John		jlsarfati@icloud.com
Sammut	Ivan	Pharmacology & Toxicology OSMS	ivan.sammut@otago.ac.nz
Schaaf	David	Ministry of Health	David_Schaaf@moh.govt.nz
Schwenke	Daryl	Physiology OSMS	daryl.schwenke@otago.ac.nz
Scott	Nicola	Medicine UOC	nicola.scott@otago.ac.nz
Scott	Beverley	Capital Coast DHB	beverley.scott@ccdhb.org.nz
Sharma	Monika	Biochemistry OSMS	shamo689@student.otago.ac.nz
Stanley	James	Public Health UOW	james.stanley@otago.ac.nz
Sutherland	Biddy	Hutt Valley DHB	gbrjs@globe.net.nz
Thomas	Kate	Surgical Sciences DSM	kate.thomas@otago.ac.nz
Trower	Jill	Wairarapa DHB	cardiac.outreach@wairarapa.dhb.org.nz
Tzeng	Shieak	Surgery UOW	shieak.tzeng@otago.ac.nz
Van Rij	Andre	Surgical Sciences DSM	andre.vanrij@otago.ac.nz
Walsh	Emily	Capital Coast DHB	Emily.walsh@ccdhb.org.nz
Ward	Margaret	Capital Coast DHB	Margaret.ward@ccdhb.org.nz
Weerasekera	Renuka	Ministry of Health	c/o devindra_awmee@moh.govt.nz
Wilson	Genevieve	Medicine DSM	genevieve527@gmail.com
Wilson	Luke	Medicine DSM	luke.wilson@otago.ac.nz
Wilson	Nick	Public Health UOW	nick.wilson@otago.ac.nz
Worthington	Luke	Physiology OSMS	worlu489@student.otago.ac.nz
Wylie	Donna	Capital Coast DHB	Donna.wylie@ccdhb.org.nz
Zhang	Wei	Public Health UOW	wei.zhang@otago.ac.nz





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