



WELLINGTON

He Kete Kōrero

University of Otago, Wellington Newsletter | Winter 2018

Dean's welcome

Tēnā koutou katoa

Welcome to the Winter 2018 edition of He Kete Kōrero. In this issue we highlight some of the fabulous research and learning going on at our Wellington campus by our staff and our international and New Zealand students.

Our international students come from Egypt, France, USA, Estonia, Pakistan, Thailand, and elsewhere, and their research topics range from 'The use of cellphones to better assess youth mental health and suicide risk' to 'Developing an early warning system for arboviral diseases.'

Although the number of PhD students has remained steady (around 75) over recent years, the international PhDs are an increasing proportion of our overall number - 12 per cent this year compared with 3 per cent in 2016. We also have an international Masters student Kanon Jatuworapruk, a rheumatologist from Thailand, who is focusing on the risk of in-hospital gout attack for his Master of Medical Science, under the supervision of Drs Will Taylor and Rebecca Grainger.

As well as research, we're highlighting some of the innovative approaches to teaching and learning for which this Wellington campus of Otago is becoming well known.

Ngā mihi nui

Sunny Collings
Dean and Head of Campus



Emerging researchers shine

Dr Kirsty Danielson has been awarded an HRC Emerging Researcher First Grant for her novel proposal for diagnosing bowel cancer. She will investigate if the presence of certain types of molecules in the blood could be reliable bio-markers for detecting bowel cancer and even predicting a person's response to chemotherapy.

New Zealand has one of the highest rates of bowel cancer in the world, resulting in about 1,200 deaths annually, says Dr Danielson, a lecturer in the Department of Surgery and Anaesthesia. Current screening strategies are invasive, have a high resource burden, or lack of sensitivity required to detect cancer at an early stage.

While the current roll-out of the national bowel screening programme is a positive step, the method used still has limited sensitivity for detecting early cancers and will add pressure on hospitals to perform more colonoscopies. There's an urgent need for novel, sensitive and minimally-invasive diagnostic strategies for early-stage diagnosis.

Dr Rebecca Dyson, Paediatrics and Child Health, has been awarded an HRC Emerging Researcher First Grant to investigate whether omega-3 can improve cardiometabolic outcomes following preterm birth.

About seven per cent of New Zealand's babies are born prematurely and as these children grow up, they face an increased risk of cardiovascular disease as adults, says Dr Dyson, because levels of omega-3 – essential for normal cardiovascular tissue development – are depleted in preterm babies. Dr Dyson will investigate whether application of omega-3 can help reduce cardiovascular dysfunction.



Senior Research Fellow and epidemiologist **Dr Jason Gurney** will examine strategies to help boost the longevity and quality of life for Māori cancer patients, with a new Māori Health Research Emerging Leader award – one of two presented this year for the first time by the HRC and Ministry of Health.

It is estimated Māori are 20 per cent more likely to develop cancer, but nearly 80 per cent more likely to die from it, and it has also been estimated that Māori patients with terminal cancer are more likely to experience a poor quality of life and palliative care.

Over the next four years, Dr Gurney wants to identify the most important cancer priorities for Māori and then develop an action plan around how best to tackle them, and a policy discussion document to help shape health strategies for Māori. Dr Gurney says he is excited about the fellowship that he believes could have quite a significant long term impact on Māori health.

"This provides an opportunity to focus on solutions to this problem. So let's line up some priorities, and let's tackle them."



Global call to improve health for indigenous people

The Director General of the World Health Organization (WHO), Dr Tedros Adhanom Ghebreyesus, has acknowledged in a letter to the leading international medical journal *Lancet Oncology* that progress on Indigenous health has been slow and more needs to be done. Dr Ghebreyesus's letter was a response to a joint letter from our Public Health experts with Australian and Pacific colleagues challenging the WHO and Governments to prioritise health improvements for Indigenous peoples worldwide. This joint letter and declaration were key outcomes of the very well-attended 'Indigenous Peoples and Cancer Symposium' at our Public Health Summer School in February 2018.



NZ, Australian, Pacific and international speakers and chairs from the Indigenous Peoples and Cancer Symposium.

Otago helping shape global cancer agenda

Professor Diana Sarfati, Head of the Department of Public Health at UOW, signed a Memorandum of Understanding (MoU) on behalf of the University of Otago with the International Agency for Research on Cancer in Lyon, France, in mid-April. The MoU focuses on building capacity and specific research collaborations that will strengthen the evidence-base for cancer prevention and control. Professor Sarfati was also invited by the Director of IARC to join the agency's *Expert Advisory Committee on Social Inequalities and Cancer*.



From L to R: Professor Diana Sarfati, Dr Chris Wild, Director of IARC, Dr Freddie Bray, Section Head Cancer Surveillance at IARC.

Co-design for pain-related disabilities - iSelf-help

Hemakumar Devan and **Meredith Perry**, School of Physiotherapy, and other UOW researchers Rebecca Grainger, Tristram Ingham, Bernadette Jones, William Leung, and Professor Tony Dowell will be working with Professor Leigh Hale, School of Physiotherapy in Dunedin on a major HRC funded project to co-create a digital self-help intervention for people with persistent pain.



Hemakumar Devan



Meredith Perry

In this collaborative research project with Capital & Coast District Health Board Pain Management Service and Tu Kutahi Māori Asthma Research Trust, they will develop and co-design with patients an online-delivered intervention called iSelf-help to help reduce pain-related disabilities. The co-design process will ensure iSelf-help is evidence-based, culturally appropriate, and delivered online. The team will evaluate its clinical and cost-effectiveness compared to group-based, in-person delivered multidisciplinary pain management programs (PMP) in CCDHB.

Persistent non-cancer pain affects more than one in five New Zealanders. Māori, people living in areas of high deprivation, and older adults are at greatest risk. The best evidence for longer-term benefits of persistent pain management are for group based, multidisciplinary PMP focusing on behavioural interventions. But with poor access to multidisciplinary PMP for people living in remote and rural areas, web-based technologies are an alternative way to deliver behavioural interventions. This will be the first study to have patient co-design and compared to group-based, in-person PMPs internationally. For more information, otago.ac.nz/physio/research/ageing/otago666197.html.

Housing and health research

Professor Julian Crane and his team will carry out a three year study to find out whether toxic moulds are a health hazard in NZ homes. Previous Otago research has shown that people who live in cold, damp, mouldy homes have much higher rates of respiratory problems such as asthma, colds and influenza. It isn't known exactly why these conditions lead to more breathing problems, but quite a lot of these leaky homes grow mould that produce mycotoxins. The researchers will investigate whether these tiny amounts of mycotoxins are causing airway inflammatory problems which lead to coughs, wheezing and an increased risk of colds. They'll study the many microbes (bacteria and moulds) in house dust, in leaky and non-leaky homes throughout the country, by measuring the traces of the chemicals they produce.



Cold New Zealand council housing to get upgrade

Research led by PhD student **Lara Rangiwhetu** is looking at whether council housing is warmer and drier due to upgrades and advocating for standards to bring all New Zealand housing up to the World Health Organization (WHO) minimum standard which recommends indoor temperature of 18°C. For more information, otago.ac.nz/wellington/news/otago687678.html.



Biomedical science studies at UOW gain momentum

Our Honours programme in biomedical science is gaining momentum, with two students engaged in significant research projects. **Rami Kanaan** is working with Dr Patricia Whitfield and Associate Professor Jeremy Krebs on the HRC-funded PROGRESS NZ study – assessing markers of glucose metabolism in men with pre-diabetes who identify as NZ Māori, European, Pacifica, or South Asian. **Annabelle Greenwood** is working with Dr Kirsty Danielson and Associate Professor Elizabeth Dennett on an University ORG-funded study to discover novel diagnostic and predictive biomarkers for colorectal cancer.

Both projects highlight the translational aspects of biomedical research that we carry out at UOW and offers these students a unique opportunity to work with patients – fostering clinical and biomedical collaborations.

Annabelle Greenwood and Rami Kanaan.



Research contributes to global Penicillin reformulation efforts in battle against rheumatic fever

Our Associate Dean Pacific **Dr Dianne Sika-Paotonu**, a biomedical researcher, is leading a New Zealand-based project to support global efforts to reformulate a type of Penicillin known as Benzathine Penicillin G (BPG) usually given to children and young persons with rheumatic fever. Group A Streptococcal (GAS) infections can trigger Acute Rheumatic Fever (ARF) and can lead to Rheumatic Heart Disease (RHD) if left untreated.

The study has been designed to find out more about the pharmacokinetics of BPG, which is administered as painful monthly injections for 10 years or more to children and young people who have had ARF previously, to prevent recurrent episodes that could potentially lead to RHD. This type of pharmacology research work would usually require large blood volumes from participants, but thanks to research teams in Australia, this work can now be carried out using finger prick samples instead which is more suitable for treatment with children.

It is recognised that Māori and Pacific peoples in New Zealand are affected disproportionately by ARF/RHD. This is the first study seeking to explore the pharmacokinetics of BPG in a paediatric population of predominantly Māori and Pacific children and young people with ARF.



Researching oxygen levels of preterm babies

International PhD student **Dr Conway Niu** from the Department of Paediatrics and Child Health, has just returned from three months monitoring the overnight drops in oxygen levels of some 300 preterm and full-term babies at the Children's Hospital of Fudan University in Shanghai in a bid to improve the prospects of pretermers.



The data he has brought back will augment the information he is gathering on 100 preterm and term babies in Wellington and Hutt hospitals – giving him a good-sized sample to base his research on. As well as using the latest technology available – oximetry sensors capable of monitoring oxygen levels every two seconds, Dr Niu is carrying out regular follow-up visits to check the health, growth and development of each infant in the New Zealand study over their first year.

While other groups have studied preterm babies at discharge from hospital, this study is comparing data from preterm babies with data from term infants. We are finding that a lot of term babies who are otherwise thought to be healthy also have these short dips in oxygen levels, says American-born Dr Niu, who studied and worked at the Children's Hospital of Fudan University after completing his medical studies in Shanghai.

The study received equipment funding from the Wellington Medical Research Foundation, funding from the University of Otago Priming Partnerships Fund for its Shanghai arm, and equipment support from Promed Technologies. Dr Niu's PhD is supported by a UOW Doctoral Award.



Kids'Cam Tonga: Exploring the diet of Tongan children using wearable cameras

Postgraduate student **Loma Linda Veatupu** is using **Kids'Cam Tonga** data to examine the nature and sources of Tongan children's diets on the small island of Ha'apai. Earlier this year, Loma, a New Zealand-born Tongan visited Ha'apai for the first time, to see things in person confirming the images from the Kids'Cam Tonga participants. She says it was eye-opening to experience the reality of everyday living in a small island Pacific community. By studying Public Health ((DPH and MPH) following an undergraduate degree in anatomy at Otago, Loma hopes to acquire knowledge and skills to contribute to improving the health statistics of our Pacific communities and New Zealand in general. "As a young Pacific woman, I understand the health issues among the Pacific populations in New Zealand. My experiences and growing up in South Auckland have also contributed to my passion for public health".



100% Human

PhD candidate **Denise Steers** and intersex activist Georgia Andrews recently co-presented a paper on "100% Human: young New Zealanders' perspectives" at the *Intersex Social Sciences: Activism, Human Rights, and Citizenship conference* in Bologna, Italy. Georgia is a participant of Denise's research on 'Decision making for young people born intersex', and was invited by Denise to present this paper together in partnership. They received a lot of feedback from academics and activists alike regarding the power of this partnership approach. "It demonstrated the power of unity with allies in promoting the voice of our community in a safe, sensitive and respectful setting. The opportunity to network with many peers from around the world, many of whom I had communicated with online, was a life-changing experience," says Georgia.



Georgia Andrews (left) and Denise Steers in Bologna, Italy.

Denise says the conference was a highlight of her PhD so far, and would encourage others to privilege participants' voices by co-presenting their research. Georgia was able to attend, thanks to staff and students who supported a Givealittle page and the Maurice and Phyllis Paykel Travel Grant.

Events

27 July

Diet, human health, planetary health

John Potter, Chief science advisor to Ministry of Health and Professor at CPHR, Massey University, in Small Lecture Theatre, UOW, part of the Public Health Friday lunchtime seminar series.

8 August

Why we need healthy streets

Seminar from UK Public Health expert Lucy Saunders, hosted by UOW's NZ Centre for Sustainable Cities, 12-1 pm City Gallery, Wellington sustainablecities.org.nz/2018/07/seminar-why-we-need-healthy-streets/

4 September

Symposium on diet-related disease

Hosted by the University of Otago, Wellington, University of Auckland and Healthier Lives National Science Challenge, Nordmeyer Lecture Theatre, University of Otago Wellington.

11 September

2018 Otago Spotlight Series: Infectious Disease Research

A day of short, accessible presentations from international leaders and emerging investigators in infectious disease research in the Nordmeyer Lecture Theatre, University of Otago Wellington.

10 October

An Anthropologist at Home

Congratulations to Louise Signal, (Department of Public Health) who has been promoted to Professor this year. She will give her Inaugural Professorial Lecture (IPL) on 10 Oct at 5pm in the Nordmeyer Lecture Theatre, University of Otago Wellington.

In the news

Some of our students have taken their research a step further to communicate it more widely in the media, including:

Warning labels on alcohol containers highly deficient



Safety warning labels needed on fresh chicken, say researchers

Other recent news

Obesity a tough topic for GPs

Gaps in patient care pathway may perpetuate high rates of sexually transmitted infections

Study aiming to improve New Zealand's low breastfeeding rates

Genetic research reveals new insights into severe childhood epilepsy

Radical new framework for trade and investment treaties

Major fundamental changes required to achieve health equity

Junk food dominates NZ sport

Multimorbidity impacts on employment and financial wellbeing, Otago report shows

Preparing for increased stroke volumes in New Zealand

Smokefree 2025: An opportunity for big scores by the Government

For further detail and more news check out our news page otago.ac.nz/wellington/news/

For upcoming events at the University of Otago, Wellington, check our events page

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