

University of Otago, Christchurch Newsletter

Dean's welcome

Welcome to our first newsletter for 2015. I hope you had an enjoyable summer break.

While many businesses close down over the Christmas period, our campus does not. Around our buildings, young researchers work as part of our annual Summer Studentship programme. This is a chance for scores of young scientists to experience being a researcher for 10 weeks. Sponsors provide the support for students to work under the guidance of experienced researchers. Students' findings form part of ongoing, wider research projects. This is the case with the Summer Studentship project on Inflammatory Bowel Disease which is profiled below.

This year we will have more than 1000 full and part-time students on campus. We are well-known for teaching undergraduate medical students, but it may surprise you to learn the majority of our students are postgraduates. Many are health professionals, such as nurses, undertaking further education, and in turn, improving the level of health care provided in Canterbury.

Every year we host a series of public lectures where our senior staff share information about their research findings. This year we have six speakers, lecturing on topics such as gut health, psychological health, and the invention by Christchurch-based scientists of the next generation medical scanner.

The series begins with a lecture from newly-promoted Professor Richard Gearty. A gastroenterologist, Professor Gearty, like most of our medical staff, has a University – Canterbury District Health Board joint clinical appointment. These University joint clinical appointments help ensure the clinical relevance and clinical benefits of our research.

A schedule of our upcoming Public Health Lectures is on page two. We hope to see you there.

Regards

Peter Joyce

Summer student finds highest IBD rates in the world

Canterbury has the highest rates of Inflammatory Bowel Disease (IBD) in the world, according to results of a Summer Studentship project.

Summer student Vikesh Gupta tallied all diagnosed cases of IBD in the Canterbury region during 2014, then compared the data to a ground-breaking 2004 study by gastroenterologist Professor Richard Gearty. He found a 50 per cent increase over the decade; giving Canterbury the dubious honour of having the highest rates of IBD in the world.

The latest studentship research was supervised by Professor Gearty and paediatrician and gut health specialist Professor Andrew Day.

Professor Day says IBD is a serious and growing problem worldwide. The condition encompasses Crohn's disease and ulcerative colitis, and can result in abdominal pain, diarrhoea and bleeding.

Professor Day says the reason behind Canterbury's exceptionally high rates of IBD is unknown but he and Professor Gearty continue with research to understand it.



Summer student Vikesh Gupta (middle) discusses his project with a sponsor and supervisor Professor Andrew Day (right).

Thank you to our Summer Studentship programme sponsors:

Age Concern Canterbury Trust | Anaesthetists' Instrument Pool Ltd | Arthritis New Zealand | Bowel and Liver Trust | Cancer Society Diamond Harbour, Ellesmere and Ashburton Groups | Cancer Society Oxford and Kaiapoi Groups | Cancer Society Rangiora, Diamond Harbour and Amberley Groups | Cancer Society of New Zealand Canterbury/West Coast Division | Canterbury District Health Board | Canterbury Branch of the NZ Federation of Graduate Women | Canterbury Healthcare of the Elderly Education Trust | Canterbury Medical Research Foundation | Canterbury Orthopaedic Services | Canterbury Scientific Limited | Centre for Translational Cancer Research | CDHB GM Trust Funds (Medical and Surgical Division) | Christchurch Gastroenterology Research Trust | Cure Kids | Diabetes Research and Training Trust | Douglas Pharmaceuticals Limited | Edith Tripp Summer Studentship | Elaine Jensen and the late Janet Collerton | Fisher and Paykel Healthcare Limited | Govan Family Trust | Helen Poole and Ian McDonald Memorial Trust | Maurice and Phyllis Paykel Trust | New Zealand Breast Cancer Foundation | New Zealand Heart Foundation | Pacific Leprosy Foundation | Pacific Radiology Group | Pegasus Health (Charitable) Limited | Roland Stead Summer Studentship | Rural Canterbury PHO | SJ Charitable Trust | University of Otago, Christchurch Pathology Department | University of Otago – Division of Health Sciences | Urology Research Foundation Board | WH Travis Trust

Free health lectures

Every year we hold a series of lectures to share latest information on health research with you.

This year we have a great line-up of staff who will share information on topics including gut health, the medical scanner of the future, mental health effects of the earthquakes, and the Ebola virus.

Lecture schedule

Wednesday 25 February, 7pm

Professor Richard Geary, gastroenterologist
Gut Instincts – the gastrointestinal tract in health and disease

Wednesday 4 March, 7pm

Associate Professor Anthony Butler, radiologist and developer of the MARS colour scanner
MARS: A new form of medical imaging

Wednesday 11 March, 7pm

Professor Steve Chambers, infectious disease specialist
Ebola – 12 months on. What have we learned?

Wednesday 18 March, 7pm

Associate Professor Suzanne Pitama, Māori/Indigenous Health Institute director
The Meihana Model: Utilising a Māori health framework within your clinical practice.

Wednesday 25 March, 7pm

Associate Professor Suetonia Palmer, researcher and CDHB kidney specialist
How do we know whether medicines work and are safe?

Wednesday 1st April, 7pm

Associate Professor Caroline Bell, psychologist
Shaky times; the psychological effects of the Canterbury earthquakes and all that has followed.

All lectures are held at the University of Otago, Christchurch's main building on the Christchurch Hospital campus. The physical address is 2 Riccarton Ave.

Cutting-edge Parkinson's disease research

Tremors and other motor impairments used to be considered the biggest burden of Parkinson's disease. But in recent years doctors and scientists have recognised that cognitive problems such as dementia can be more debilitating.

Medication is available to control motor issues but not to treat cognitive problems.

Dr Tracy Melzer is at the forefront of research into understanding, and hopefully one day predicting, the onset of dementia in Parkinson's disease.

Dr Melzer says a significant number of patients with Parkinson's disease experience cognitive impairments, but symptoms can take anywhere between two and 20 years to develop.

He and his colleagues from the New Zealand Brain Research Institute (NZBI) collect brain imaging scans, using latest technology, and compare them with measures of disease severity and detailed cognitive tests, to look for changes which might indicate the onset of dementia. They have collected almost six years of data already from 130 South Island patients.

The ultimate aim is to predict which patients are at the highest risk of developing cognitive impairments in the near future and include them in trials of new drug therapies.

"If you can target them before they develop cognitive impairments you have a better chance of delaying the onset or even preventing it," Dr Melzer says.

The Health Research Council of New Zealand recognised the significance of Dr Melzer's work by awarding him one of its Emerging Researcher grants.

Promotions

New Associate Professors:

Research Associate Professor Gabi Dachs
Research Associate Professor Nigel Anderson
Associate Professor Suetonia Palmer
Clinical Associate Professor Catherine Stedman
Associate Professor Suzanne Pitama

New Professors

Professor Lutz Beckert
Professor Richard Geary
Research Professor Chris Frampton
Clinical Professor Geoff Shaw



Dr Tracy Melzer

Christchurch campus' pivotal role in medical training

A Christchurch doctor has been appointed to oversee the training of all University of Otago medical students.

Professor Tim Wilkinson says his role is to ensure the training of medical students is standardized across Otago's three campuses. Students do their final two years of training in either Dunedin, Christchurch or Wellington. They then do clinical placements in hospitals or general practices anywhere between Southland and Taupo in central North Island.

"My focus is on creating greater cohesion between campuses and sharing of ideas and resources. I'm also ensuring students' learning ideally matches patients' needs."

This involves reviewing the core components of the course. Professor Wilkinson says learning is now split into two streams. The first is learning about 150 core patient 'presentations' or medical diagnoses. The second is professional activities or learnings which doctors need but are not about medical conditions, such as professionalism.

In addition to his University of Otago role, Professor Wilkinson is on the board of Health Workforce New Zealand. This is a Government organisation which works to ensure New Zealanders have a health workforce to meet our needs.



Professor Tim Wilkinson

Christchurch study improves Hep C treatment globally



Associate Professor Catherine Stedman

A Christchurch research project has changed the face of hepatitis treatment worldwide. Associate Professor Catherine Stedman and her team trialled a new and inventive combination of drugs to treat Hepatitis C. One of the drugs, called Sofosbuvir, was newly developed. After Associate Professor Stedman published her findings in the *New England Journal of Medicine*, the company which developed the drug sold for \$11 billion.

Associate Professor Stedman works for the University, and for the Canterbury District Health Board as a gastroenterologist and hepatologist.

She says typically patients get treated with injections of Interferon, which has "horrible side effects", is not cheap and not hugely

effective. She and collaborators at the University of Auckland found treating patients with Sofosbuvir and Ribavirin pills was "like hitting the jackpot". Cure rates over 90 per cent were achieved using a short course of tablets without significant side effects, and because of the excellent safety profile, ongoing studies have shown it is even possible to safely and effectively treat patients with cirrhosis and advanced liver disease, with life-saving results.

The new drug, Sofosbuvir, is very expensive (a typical course is \$85-\$100,000), so is not subsidised by Pharmac. However because Associate Professor Stedman continues to run trials on the treatment in Canterbury, local patients are getting free access to this and other similar drugs.

Self-destructing cells research could improve cancer treatment

All cells have a 'self-destruct' function, where damaged or infected cells sacrifice themselves for the good of the body. Scientists know that cancer cells have the ability to turn off this 'self-destruct' function, allowing them to grow out of control and become resistant to chemotherapy.

Professor Mark Hampton has won funding from the Royal Society's Marsden Fund to study how the self-destruct process works. He is focusing on a newly discovered way in which cells destroy themselves, called necroptosis.

Professor Hampton says in understanding how this process works, they may ultimately be able to control when cells in our body self-destruct.

He says the findings of his three-year research project could be applicable to diseases other than cancer, including heart disease and stroke.

"When organs in our body are placed under extreme stress, for example a heart attack, they can self-destruct. In the case of heart cells, we want them to be repaired rather than die. Therefore, we would like to learn how to turn the self-destruct button off. It is the opposite in tumours, where we want to activate the self-destruct button."

Professor Hampton has studied the self-destruct pathways of cells for several years. Previous studies have been supported by the Health Research Council and the Cancer Society of New Zealand.



Professor Hampton (left) discusses his project with colleagues.

Minimising the impact of bipolar disease

A research project to minimise patients' acute bipolar episodes is also strengthening ties between the University and Health Board.

Dr Maree Inder from the University of Otago, Christchurch, is involved in research on the potential of psychotherapy in conjunction with medication in treating bipolar disorder.

"Our hypothesis is that there is another tier or level of care ideally for patients, sitting between mental health acute services and ongoing care in the community."

She is involved in a study that looks at the benefits of a form of psychotherapy (called Interpersonal Social Rhythm Therapy (IPSRT)) provided by a specialist bipolar disorder clinic.

The work is being done in consultation with Canterbury District Health Board staff. An advisory group comprising people from both organisations has been established.

Previous research by Dr Inder and colleagues found that psychotherapy lessened depressive symptoms and enabled patients to resume their everyday lives faster, such as returning to work.

In the latest study, half of patients receive IPSRT for 18 months in addition to standard treatments. The others receive standard treatment only.

Dr Inder is the latest GAMA Foundation Fellow for bipolar disorder research.

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Appeal**

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otago.ac.nz/christchurch/about/appeal