

UNIVERSITY OF OTAGO MAGAZINE

OCTOBER 2016

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NEW ZEALAND



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University of Otago Magazine

A magazine for alumni and friends of the University of Otago

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On 15 August of this year, I celebrated my fifth anniversary as Vice-Chancellor here at Otago. I have no idea where all that time has gone, but I continue to be extremely proud to lead a University that I know and love so well.

In my role as Vice-Chancellor, I travel a lot – within New Zealand and overseas. In fact, I have just returned from a three-week trip to the United States. The primary goal of my trip was to learn more about the study abroad scheme, which plays such a vital role in the recruitment of students from North America to Otago.

Study abroad has been dispatching adventurous American students overseas for a portion of their undergraduate study (typically a semester) for close to 100 years now. It's a big operation, with around a quarter of million students placed at partner universities around the world each year.

Study abroad students are important to Otago, and largely account for the fact that – for many years now – American students are the largest proportion of our international student cohort.

While I knew Otago must be doing plenty right to attract several hundred study abroad students each year, I must confess that I approached this trip with a considerable amount of trepidation. I was afraid that Otago wouldn't stack up somehow – that I would feel like the poor cousin in the company of my peers from a much richer country with a much richer university system.

But none of these fears were realised. Instead, former study abroad students, their supervisors, and even the Presidents of their universities had nothing but great things to say about Otago.

In hindsight, I should have anticipated some of their positive feedback: American study abroad students loved New Zealand.

They were thrilled by our great outdoors. They appreciated that our Kiwi students were extremely friendly, engaging and inclusive. They valued the opportunity to live in the flats in North Dunedin and they made friends, not only with New Zealand students, but with other international exchange students from around the world. They felt welcomed and well supported, and the opportunity to learn more about Māori culture left a lasting impression on all of them.

But there was other feedback that I did not expect – for example, everyone reported that the academic standard at Otago was much higher than that of their home institution. I was constantly told that the American students – many of whom came to us from highly selective and extremely expensive private universities – had to work twice as hard at Otago as they did at home.

They also told me that Otago required students to think for themselves and to take responsibility for their own learning; that Otago fostered a sense of independence that was initially a bit daunting to many of them.

Instead of asking me to bend our system to fit theirs, both students and staff encouraged me to jealously guard our standards in the wake of an increasingly customer-focused approach to university education. Even the students – the ones who struggled while they were with us – told me how much they learned under our system. They thanked me for their experience at Otago, reporting that they felt much more prepared for their lives and their careers in the wake of their time at Otago. They all reported a huge sense of loyalty to Otago and, even though these young people had only spent a semester with us, I saw more than a few tears of joy and recognition during my presentations about the University.



At the end of the trip, I felt like Dorothy in the *Wizard of Oz* – after a long and exhausting journey, I came to the realisation that everything I needed to know was right here all along.

So you have to ask yourself, how is it that a moderately-sized university located at the bottom of the world can punch so far above its weight? The answer to that question lies in the remarkable people who work and study here at Otago.

After five years as Vice-Chancellor, it is very clear to me that, despite their wonderful individual differences, folks at Otago – both staff and students – in Dunedin, Christchurch, Wellington and Invercargill, all share some fundamental things in common. They are smart, ambitious and warm-hearted people. And they're all a bit edgy – that is, they are willing to take risks to get the most out of their work and the most out of their life.

In this issue of the *Otago Magazine* we continue to showcase some of our smart, ambitious, warm-hearted and edgy staff and students who are doing world-class work – not only in producing new knowledge through research, but also in sharing that new knowledge through teaching.

I feel privileged to be the Vice-Chancellor here at Otago and I am looking forward to the next five years.

Professor Harlene Hayne
Vice-Chancellor, University of Otago

Indispensable vigilance

Established following the thalidomide tragedy more than half a century ago, the Otago-based New Zealand Pharmacovigilance Centre is today one of the unsung heroes of our health system, helping to ensure that medicines are safe.



One of the **1st** monitoring programmes

5,000 annual reports

110,000 total reports

124 countries involved

“Adverse reactions to some drugs have been of sufficient significance to take them off the market, but a more likely result is in tightening up prescribing practice ...”

Every time we take some medication, we potentially benefit from the cumulative wisdom of the New Zealand Pharmacovigilance Centre, based at the University of Otago’s Department of Preventive and Social Medicine.

Director Dr Michael Tatley explains that the centre and its 10 equivalent-full-time staff contribute to and support the safety of medicines, vaccines, herbal products and dietary supplements in New Zealand, through the monitoring of voluntary reports of what are dubbed “adverse events”.

These reports are made to either the Centre for Adverse Reactions Monitoring (CARM) or the Medication Error Reporting Programme (MERP), which both operate within the Pharmacovigilance Centre.

CARM dates back more than half a century, to international anguish in the wake of the thalidomide tragedy, in which about 10,000 infants worldwide were born with phocomelia (malformation of the limbs) to mothers who had been prescribed the drug to treat morning sickness.

The international response was to make it tougher to get approvals for medications and to introduce monitoring programmes for early warnings of adverse reactions to their use.

In New Zealand in 1965 Otago’s Professor of Pharmacology, Garth McQueen, established what became CARM, initially a Department of Pharmacology project, but funded by government since 1982.

Tatley says that it was one of the first such post-thalidomide monitoring programmes initiated in the world

and remains one of only three national programmes run independently from medicines regulators such as the Ministry of Health’s Medsafe.

The previous year, the visionary McQueen set up what became the more widely known New Zealand National Poisons Centre, also based at the University and later, too, funded by government.

Tatley, who is also the medical assessor for CARM, explains that it is not there to approve or regulate the use of therapeutic products: that is Medsafe’s job. Rather, CARM collects and evaluates spontaneous reports of unwanted or unexpected adverse reactions to medicines, vaccines and related products that occur when they are used under normal conditions.

He emphasises the extent of the problem by citing research, which shows that adverse drug events account for six per cent of hospital admissions in New Zealand and 16 per cent of claims to the Accident Compensation Corporation.

CARM’s database holds more than 110,000 reports – from doctors, nurses, hospitals, pharmacists, drug companies and patients – and provides New Zealand specific information on adverse reactions to therapeutic products. It currently receives more than 5,000 reports a year.

“CARM monitors and analyses the database for the identification of new signals, or important patterns, clusters or unusual events or practices that could have significance for medicine safety and prescribing practices in New Zealand,” Tatley says.

These findings are considered by Medsafe and the Ministry’s Medicines Adverse Reactions Committee. “This

may result in further investigation and/or formal review, which can lead to emphasising or changing relevant prescribing advice or other regulatory actions aimed at ensuring the safety of medicines registered in New Zealand.”

Examples of adverse reactions include some patients experiencing psychiatric adverse events from taking statins to lower cholesterol levels, and some women getting blood clots from taking so-called third generation oral contraceptives.

Antibiotics are the most commonly reported cause of adverse reactions in New Zealand; allergic reactions are the most common adverse reaction to medication.

“Adverse reactions to some drugs have been of sufficient significance to take them off the market,” Tatley notes, “but a more likely result is in tightening up prescribing practice: not to use it in patients with certain conditions; highlighting drug combinations that interact, and so on.”

CARM’s formal involvement in monitoring adverse effects of psychoactive substances such as “legal highs”, which began in 2013, was a major factor in the banning of synthetic cannabinoids and in making it harder to pedal other psychoactive products.

Tatley says that, as well as providing reports to the Ministry of Health, CARM directly advises health professionals about the possibility of an adverse reaction being due to a drug exposure.

For severe and life-threatening reactions, an electronic alert is recorded in a national system against the patient’s National Health Index number, which is accessible to hospitals. Tatley would



Dr Michael Tatley: "I think that the monitoring of the safety of medicines is an important national function and makes a significant international contribution to medicine safety."

Photo: Graham Warman

like to see this warning system extended so that it is accessible in the electronic records kept by the person's own doctor and other health-care providers.

Tatley notes that New Zealand has one of the highest per capita rates in the world of reporting adverse reactions, which he says reflects more diligent reporting rather than a bigger problem.

CARM and national monitoring centres in 123 other countries pool anonymous data into the database of the World Health Organization's International Drug Safety Programme based in Sweden. New Zealand was one of the 10 founding members of the programme in 1968 and Tatley proudly points to its ongoing international reputation for the quality of

its monitoring work.

"Through this network, New Zealand is able to keep abreast of the latest concerns around drug safety as they emerge, whilst access to the international database serves to complement the local experience of adverse reactions to medicines."

The centre also provides tailored, anonymous data to researchers.

While CARM is interested in adverse drug reactions when medicines are used correctly, the recently-established Medication Error Reporting Programme collects and analyses voluntary reports of actual and "near miss" medication errors. Tatley says that the idea is to learn more about why these errors happen and

what safety improvements are needed to prevent them occurring.

The Pharmacovigilance Centre was previously also the home of the Intensive Medicines Monitoring Programme, focused on the safety of new medicines, until government funding for this programme ceased in 2012.

Tatley says that the New Zealand Pharmacovigilance Centre is a good example of the University's contribution to community service. "I think that the monitoring of the safety of medicines is an important national function and makes a significant international contribution to medicine safety."

IAN DOUGHERTY

FEATURE

Changes and challenges



An aerial photograph of the town of Wanaka, New Zealand, at dusk. The town is illuminated by warm streetlights and house lights, creating a glowing pattern against the dark landscape. In the background, a large body of water (Lake Wanaka) stretches across the middle ground, reflecting the twilight sky. Beyond the lake, a range of rugged mountains is silhouetted against the fading light of the sunset. The sky transitions from a deep blue at the top to a soft orange and pink near the horizon.

The new Catchments Otago research theme is taking a multidisciplinary and collaborative approach to helping overcome some of the most pressing problems caused by rapid changes in the Central Otago alpine lakes areas.

Wanaka at dusk
Photo: Alan Dove

The Central Otago lakes' catchments at the foot of the Southern Alps are experiencing some of the fastest urban growth in the country.

The area surrounding Queenstown and Wanaka is a magnet for people drawn to the wild beauty of snow-capped mountains and pristine lakes. But could the influx of new residents, new infrastructure, new enterprises and ever-increasing numbers of tourists be damaging the very environment that attracts them?

New subdivisions are appearing at a rapid rate, with consequent demands on infrastructure such as increased stormwater flow from hard surfaces and septic tank use, prompting public health concerns, as well as issues such as potential nutrient enrichment and sedimentation in the lakes.

Intensified agriculture, associated run-off into rivers and lakes, increased demands for irrigation water and land-tenure change all contribute to pressures on the environment.

These are pressing problems and wide-ranging concerned communities are seeking answers.

A new multidisciplinary research group at the University of Otago now plans to help with such issues.

The Integrated Catchment Management Research Theme – or Catchments Otago for short – will be working with external organisations, groups and individuals to help develop land and water management strategies to address some of the challenges the region currently faces, as well as those that may arise in the future.

The aim is to find ways of sharing natural resources with sustainable and

equitable economic, environmental and social outcomes.

Research co-directors Professor Kath Dickinson (Botany), Professor Philip Seddon and Associate Professor Gerry Closs (Zoology) lead a diverse team of experts from across all four of the University's academic divisions (Commerce, Humanities, Health Sciences and Sciences).

They aim to identify problems and seek solutions in collaboration with interested external communities. Community involvement is a key part of the research theme's aims, says Dickinson.

"We've all worked together on ecological programmes in the past and are used to going into communities to find out their needs. None of us subscribes to the idea of the University being an ivory tower and out of touch with the real world. All three of us feel applying our science is important and all of us work with communities to do so.

"Catchments Otago will be meeting with organisations and individuals to find out how we can best work with them to address pressing management issues. We are there to listen, not to tell."

The origins of this Research Theme go back to the 1990s, when Otago's Ecology Research Group in conjunction with the Environmental Policy and Management Research Centre brought together people involved in a wide range of research within the University.

"A lot of research publications, symposia, research student co-supervision and teaching initiatives came out of the connections made within the membership," says Dickinson.

"We have built on those experiences

and connections and have now been successful in launching the Catchments Otago idea, thanks to support from the University's Deputy Vice-Chancellor Research, Professor Richard Blaikie."

The University has allocated research theme funding to Catchments Otago for five years. This seed funding is aimed at facilitating increased connectivity between the theme's members and external communities, and encouraging research that will cover topics falling roughly under the sub-headings of water, biodiversity and people.

Catchments Otago will improve multidisciplinary research collaborations, says Dickinson.

"We did a lot of groundwork around the University in putting our theme application together and found about 60 individual projects were already going on in the Central Lakes area. The vast majority of these projects complemented each other in one way or another, so we knew we needed to get the researchers involved together.

"When people work on their own they don't always see other opportunities. But those soon arise when you get individuals together for group discussions. That's what we aim to do.

"As directors, we have an overview and can see synergies between different researchers. We aim to create opportunities for them to meet and potentially work together, which then may lead on to opportunities for our research students.

"We are keen to up the connectivity of the University, both internally on campus and externally with communities."

Dickinson is quick to point out that the directors of Catchments Otago share

"As one of New Zealand's fastest growing urban areas, the Central Otago alpine lake catchments of Hawea, Wakatipu, Wanaka and Hayes face complex developmental challenges across environmental, social and economic disciplines."



Associate Professor Gerry Closs, Professor Kath Dickinson and Professor Philip Seddon: "We can see there are problems. But we need the communities to help us identify how we can best use our research group's expertise."

Photo: Alan Dove

the responsibility of keeping the research theme on track. “We are facilitators. We all have our own work to handle as well, so we all do what we can when we can. It’s very much a team effort.”

Enterprise manager for Environment, Energy and Primary Industries Dr Mara Wolkenhauer and Catchments Otago research fellow Dr Cynthia Winkworth-Lawrence round out the core team.

This first year is focusing on team building within the University and forging links with external communities locally and in the target region around the central alpine lakes. Approaches are being made to community organisations and collaborative relationships with the Otago Regional Council and the Queenstown Lakes District Council are being developed.

“When we meet people in the communities we want to find out what research they need and see how we might be of assistance. We want to respond to what they tell us.

“As one of New Zealand’s fastest growing urban areas, the Central Otago alpine lake catchments of Hawea, Wakatipu, Wanaka and Hayes face complex developmental challenges across environmental, social and economic disciplines.

“Things are happening really fast in the region. There’s a lot going on and people know it. It’s all happening at the same time and quite overwhelming.

“We can see there are problems. But we need the communities to help us identify how we can best use our research group’s expertise.”

Work has begun to identify areas where community input would be valuable to promote research and where research may assist decision-making.

“None of us can do this on our own,” says Dickinson. “But we can collaborate in many areas and, in some cases, we

can put together joint grant applications with other organisations to help fund our work.

“We are looking at applying to the Ministry of Business, Innovation and Employment and other opportunities for funding from the government. We want to bring more research funding into the region in partnership with others, where we can work together for better outcomes all round.”

A series of workshops will be held in November to get local knowledge in the study areas of Lakes Wakatipu, Hayes, Wanaka and Hawea.

“All the lakes are very different and manage things differently. The communities’ interests are very different, so there are no one-size-fits-all answers at this stage.”

Catchments Otago will also be looking at educational opportunities in the area, such as running short courses, or even setting up a physical presence in the region, leading to both learning and teaching opportunities.

For now, the group needs to prioritise research initiatives.

“Areas of Otago and Southland are transforming very quickly, for example in the use of water for agriculture and housing. The speed of change is quite mind-boggling.

“We need to identify the most pressing issues and then fast track them. Communities need advice as to what to do now. We can’t wait 10 to 20 years. Medium to long-term research work will need to be planned and applied for – we have to remember that all research is dependent on funding.

“There are some very difficult issues out there to address. But if we all work together and explore theoretical and practical perspectives we have a good chance of dealing with some of those issues.

“I’m very positive about where we are heading with introducing the University of Otago’s expertise. From the mountains to the sea, we’re encouraging people to talk holistically and not compartmentalise.

“It’s important to see the connections between water, plants, people and the environment around them. It’s all neatly summed up in the often expressed desire: I want my grandkids to be able to swim in the rivers and lakes.”

NIGEL ZEGA

Catchments Otago seeks to:

Understand community needs

Inventory key resources

Undertake projects to ensure efficient, equitable and sustainable resource use

Undertake high quality research that will underpin management decisions

Deliver tools for improved freshwater management for target communities

Co-ordinate and enhance the University of Otago’s capacity in the Central Otago Lakes region.

At the helm

With extensive experience in capital projects' management, new Chief Operating Officer Stephen Willis takes over as the University's large-scale building programme gets under way.

Tank driving, reconnaissance scouting and registered nursing may not seem components of the usual CV for a chief operating officer, but they are all part of the varied work experience of Otago's new COO Stephen Willis.

Leaving school Willis didn't feel ready for university so he joined the Australian Army, which eventually paid for him to gain a nursing degree.

After working in Brisbane he headed to the UK, working in the NHS at a time he describes as "pretty dismal", prompting a move into hospital management.

"I disliked going to work every day wondering what was going to go wrong as a result of not having the right equipment, poor design and poorly planned day-to-day logistics – so that really changed my focus," Willis explains.

On returning to Australia he tackled a master's degree in health service management, opening new career doors. He spent the next 15 years with Mater Health Services Brisbane Ltd, managing large-scale health-related facility projects

across multiple campuses, including Australia's largest health-care precinct, which contained everything from wards and research facilities, to cafés, childcare facilities and car parks.

"My last position was as the Senior Director of Built Environment, which was quite similar to this role in a lot of ways. I was responsible for most of the ancillary services that support hospital precincts, and the property and capital projects portfolio while that organisation went through its largest capital programme ever, over about a 10- to 15-year period."

The budget of just under a billion dollars was not too dissimilar in scale to Otago's programme.

In March last year the tragic loss of baby daughter Maggie, barely 15 minutes after birth, brought an urge for change. When the opportunity emerged to manage Otago's Capital Projects Unit, Willis jumped at it.

"My wife Cheryl and I love the outdoors. I've always loved visiting New Zealand and it was also an opportunity

to give us, as a family, respite after having gone through what we did."

After eight months the COO's role came up and he saw it as an opportunity to return to operating at an influential and senior level within an organisation. By that stage they were feeling very settled in Dunedin and ready to commit to a challenging new role.

"What I've learnt is that university campuses and large hospital campuses are quite similar. This is the first time I've worked in the tertiary sector, but the reality is most of the issues are very much the same.

"In health care you are very patient centric and you work to serve the outcomes of the patients. It's no different here – you're there, ultimately, for the students."

One difference he does notice and enjoy is the feel of the Otago campus.

"I find it invigorating. I walk around this place every day and think, 'How good is this?' It's a different kind of pace and feeling to that of a big inner-city hospital."

Chief Operating Officer

Stephen Willis:

"This is probably the biggest programme the Dunedin market has seen for a long time."

Photo: Alan Dove



"How we continue to respond to changing needs of students in our unique environment and further develop non-academic services around our students is also going to be a focus."

Willis is under no illusions about the building programme's scale, which will place a significant demand on resources.

"It's a challenge for us in terms of internal resources and it's also a challenge for the external resources – in terms of external contractors and subcontractor expertise.

"This is probably the biggest programme the Dunedin market has seen for a long time. That brings challenges of cost control, quality control and in terms of delivering the projects on time."

Launching the Dental School redevelopment effectively marked the beginning of the first wave. The top four priority projects, worth about \$250 million, will all be in the construction phase by the end of this year, while the next wave is already in the design and planning phase.

"Our responsibility isn't just giving students a degree, it is developing them in a broader way. Not just preparing them for their work life, but shaping a better, well-rounded adult," says Willis.

"How we continue to respond to changing needs of students in our unique environment and further develop non-academic services around our students is also going to be a focus."

While his group is directly responsible for University strategic directives such as providing an outstanding campus environment, he is also aware that what they do impacts on others, such as providing an outstanding student experience, by providing a built environment with great amenities.

"Research, teaching – I see my portfolios as being key enablers of achieving all these other things. So it's a challenge for us to continue to have a good understanding of what is required so that we're planning ahead and seen as key partners and thought leaders in our own areas of expertise."

Much of the redevelopment involves funds which have already been set aside, Willis explains.

"The plan has always been not to borrow, but to fund it through our ongoing operational surplus and past investments."

He is quick to acknowledge his predecessor John Patrick's years of dedication to the University to bring it to this point. He served as COO for more than a decade and as Chief Financial Officer for 14 years prior to that, overseeing exponential growth in the student roll, University revenue and assets.

"John has had a profound impact and has left this University in a financial position to tackle this development plan, so we're in a fortunate position to be able to undertake what we have planned."

On a personal note, Willis says he, his wife Cheryl, their boys Harry (9), Jesse (7) and daughter Darcie (4) are already feeling settled. This is in spite of further challenging family circumstances after Darcie was diagnosed with cancer just before he took on the COO role. At the time of writing she had just returned from Christchurch after several months of specialised treatment and was doing well.

"I nearly resigned," Willis says. "Your initial thought, when faced with something like that, is to go back to where you've got family and support," he says.

Even though it happened so soon after the loss of their baby Maggie, they decided to stay because they see their future as being in Dunedin. It is a decision they have never doubted because of the support they have received.

"The local community – whether it's the school mums or people I work with – the amount of support that we've been afforded has just tied us even more to the city. I'm just constantly amazed and humbled. We've been embraced by people of all walks of life. That says a lot about community.

"My family is so much happier here. My kids are happy, family life is better – so we describe it as Maggie's legacy."

MARK WRIGHT

DNA test springs surprises

The 2016 Otago Innovation Limited Proof of Concept winner offers the potential to vastly improve the diagnosis and treatment of infectious diseases in the field.

An enzyme found in the hot springs and geysers of America's Yellowstone National Park has provided a valuable component for a simple and robust method to test for DNA mutations in the field. The discovery has won the 2016 Otago Innovation Limited Proof of Concept Grant competition.

This year is the 10th anniversary of the grant and, to mark the occasion, it came with a \$60,000 prize – an increase on the usual \$50,000 – to be used by the winning researchers to progress the development of their concept towards commercialisation.

The enzyme, engineered by PhD student George Taiaroa, his co-supervisor Associate Professor

Richard Macknight, and protein biochemist Dr Peter Mace, all from the University of Otago Department of Biochemistry, catalyses a reaction that identifies if DNA is carrying a mutation.

“Changes in DNA are hugely important for health and disease,” says Taiaroa. “A single change in the DNA of a virus can allow it to spread rapidly, or a change in the DNA of bacteria can provide the foundation of antibiotic resistance.”

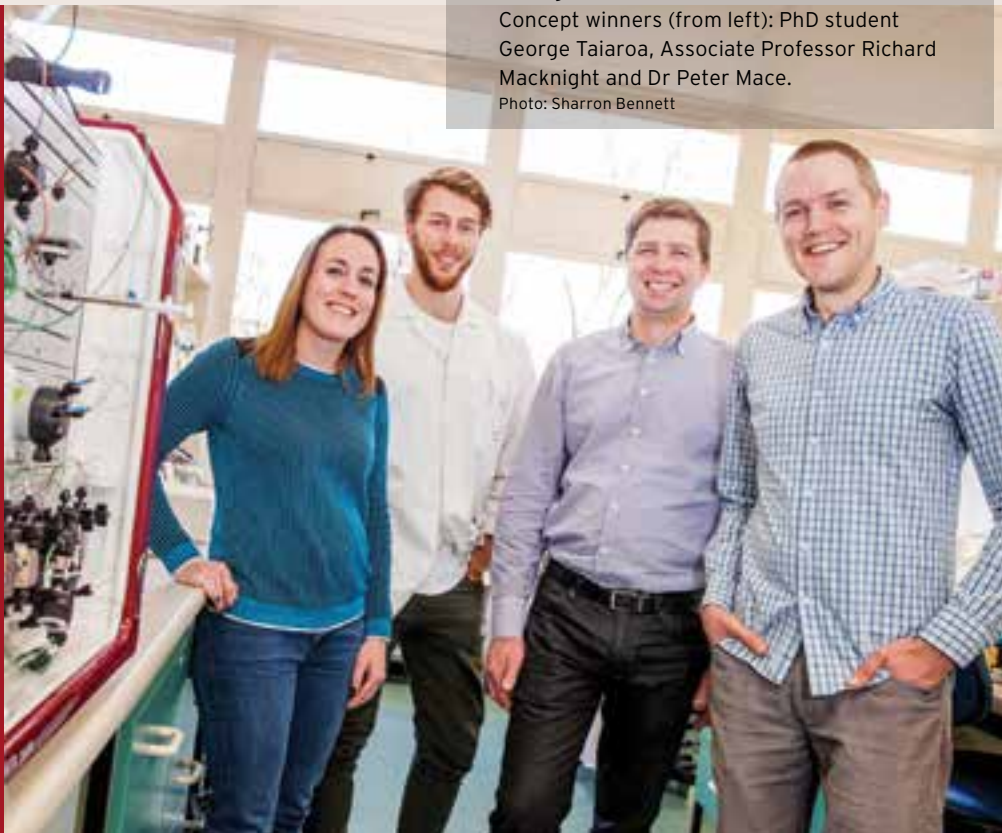
Having an easy-to-perform test, using blood or saliva, has the potential to greatly improve diagnosis and treatment of infectious diseases in remote locations, such as rural villages in the developing world.

“The overall aim of my PhD project, which is what this research is part of, is to make tools which can be used out in the field or at the point of care, to do DNA diagnostics – such as in a remote doctor's clinic in areas where you don't have a centralised hospital, let alone a laboratory.”

The ability to carry out these tests could greatly improve the treatment given to patients by allowing medical staff to see whether a person has an antibiotic-resistant strain of bacteria or a particularly virulent form of a virus.

“To be able to give a really actionable result as to which treatment a patient needs in the space of an hour or two could make a big difference.”

“To be able to give a really actionable result as to which treatment a patient needs in the space of an hour or two could make a big difference.”



The enzyme could also be applied to detect DNA mutations that are characteristic of certain cancers, thereby helping clinicians select the ideal treatment strategy. There are also applications in agriculture, including developing new plant varieties, and in bioprotection.

It is hoped the test could be produced in a form not all that different from a pregnancy test, where a sample with a DNA mutation results in a simple colour change which is different to the normal DNA.

Macknight says there is scope to work with international companies that specialise in these types of simple, portable tests.

The team plans to develop and validate the enzyme over the next year. It will be used in a novel method for analysing DNA they developed last year, which was the winning entry for the 2015 Health Sciences Translational Research Grant.

Macknight says the Yellowstone connection came about because areas such as that yield a range of bacteria that can live in such extreme environments.

“That makes their enzymes tolerant to fluctuations in the environment and, in particular, extremes of temperature, so lots of scientists use enzymes from these sources because you then have something you know is not going to go off over time and is going to be stable.”

Taiaroa says the prize will allow them to move on to the next stage and determine whether the idea has the potential to be a commercial success.

“We have done the academic side of it – and on paper it should work – but now we need funding to take our concept to reality,” he says.

“If we get the second step, then we’ve got everything down for a method that could be used out in the field and withstand extreme temperatures and humidity, and still give a really clear result.

“Being a biochemical method rather than a piece of machinery, it doesn’t cost a whole lot to run these tests, so it should ideally be less than a few dollars to run each time.”

Otago Innovation’s Commercialisation Manager Francesca Rollason says this year’s Proof of Concept Grant competition attracted 16 high quality entries covering a range of fields, including 11 groups who had not worked with them before.

“Although there was only one winner, we are hoping to work with several of the remaining applicants to help them progress their ideas commercially.”

All the applicants had to make presentations to a panel comprising internal and external judges.

“This year we also invited external investors and venture capital funders to come along and spectate. It was good because it added another dimension to some of the questions that came up.”

MARK WRIGHT

Adding value

Otago alumna Dr Anna Campbell's commitment to the importance of producing "smarter" stand-out products is taking her to far-flung corners of the world – exploring animal breeding projects in Inner Mongolia and goat milking in India.

There is no question that New Zealand produces some of the world's best agricultural products – but how will the wheat stand out from the chaff in today's competitive global markets?

The answer, says Otago Botany alumna Dr Anna Campbell, is partnerships between scientists, industry and farmers to integrate "value-adding" technologies into agricultural systems.

As managing director of Dunedin-based "agri-technology" company AbacusBio, Campbell often works with domestic and international clients on innovative projects.

"The key is looking at available products and finding ways to naturally improve key compounds.

"A recent example is an animal diet and genetics project we worked on with Alliance Group and Headwaters, a sheep breeding group, to develop high omega lamb meat."

As world fish stocks become critically depleted, this product could have obvious appeal to markets in countries with high

inland populations, such as China, she says.

Campbell recently travelled to Inner Mongolia to explore options for sheep meat and goat milking ventures with Chinese companies.

"Products that provide an alternative to traditional cow dairy products are attracting interest internationally. Goat milk farmers get several times more for milk solids than dairy farmers – about \$NZ18 per kilo – but, as I always say, today's new product is tomorrow's commodity, so science and innovation are critical; we can never rest on our laurels. It's vital we put research behind these types of products to create and maintain niche, high-value markets."

For this to happen science must show that technologies are beneficial and work with farmers to integrate them into existing production systems.

"Many great ideas and research are never really applied. Our company establishes a bridge between science and business to show how new ideas can add

to the value chain ... and how they can help businesses expand."


After 10 years in business, AbacusBio has grown to employ 30 staff, including a steady stream of Otago graduate students who have a range of mathematical, scientific and business backgrounds.

While its activities are far-reaching, the company's core capabilities are genetics and analysing animal pedigree and performance.

"About 30 per cent of our income is international and much of this is focused around quantitative genetics – understanding the mathematics of breeding livestock – but we also have farm consultants who are very applied and work with farmers every day.

"We've evaluated technologies and the consultants have said 'no, a farmer would never use that', so they keep our scientists grounded."

In addition to researching the development and implementation of new products, agri-tech research also has a "safety-catch" function in

A woman with short brown hair, wearing a dark brown double-breasted coat with a fur collar and dark boots, stands in front of a large, ornate green metal gate. The gate is partially open, revealing a street with buildings and trees in the background. The scene is set in a city environment, likely near a university as mentioned in the caption.

Dr Anna Campbell, beside the University Archway gates crafted by her great-grandfather, Thomas Hendra.
Photo: Graham Warman

“There are many opportunities out there for our producers and our products, and the companies involved in getting them to market, but there will also be challenges.”

ensuring claims made about a product's benefits are borne out by science, and to guarantee products are made in a safe and environmentally responsible way.

Campbell's recent experience as an executive member with the Agriculture at Otago research theme has further shown the potential for private-sector researchers to partner with the University of Otago.

Agriculture at Otago, which comprises 50 researchers involved in land-based research at the University, was launched alongside 12 other research themes in April 2016, to investigate areas of strategic importance to the regions, New Zealand and the world.

The theme, which is led by University of Otago Department of Microbiology and Immunology Emeritus Professor Frank Griffin, focuses on enhancing agricultural productivity, adding value in primary industries, and increasing sustainable and profitable environmental management practices for primary producers in the domestic and global agricultural sector.

The theme's website launched in June and, soon after, Campbell spoke about its goals and AbacusBio's capabilities at the Asia Pacific Food Integrity Conference in Auckland.

With momentum building, Agriculture at Otago pushes researchers and the institution into an "exciting space", in which the University's reputation for medical research could be linked with science that explores the role food plays in human health, she says.

"The University could play a big role in the future of New Zealand agriculture. [Manuka honey company] Comvita is a great example of how to build a commercial model from a strong foundation of research and development

– the research describes the basic biology of those products and what they do for human health, but also how to develop new products and innovate."

Campbell's ideas on the value of science being in its application formed while she was studying for a Bachelor of Science (with a double major in Botany and Biochemistry); but things "clicked" during her honours degree studies.

"I played a lot of sport and enjoyed my time at University, but I probably lacked a little focus until, in my fourth year, I wrote an essay on grapevine viruses that was pivotal for me. I realised that what I was learning could make a difference."

Encouragement from lecturer (and honours supervisor) Associate Professor Paul Guy and Dr David Burritt was instrumental in her decision to work in science in "an applied space".

In a recent newspaper opinion piece, Campbell described her first job – researching which parts of wheat chromosomes changed noodle colour – as leading to a feeling of disgruntlement at operating in such a narrow research space.

These experiences led to her understanding she needed to be more "big picture" in her work.

"I meet many people in sales or policy areas whose science qualification has been the basis of an exciting career. So now, if I'm talking to undergraduates I say 'don't let people put you in a box, have an interest in law, business, language. Even if it takes you a year longer, explore other things; study Māori or Mandarin'."

A broader appreciation of different cultures and different business practices will become an agri-tech essential as access to larger Asian markets – and those in the US and European Union – becomes a reality.

Campbell says while future market access will provide marketing options, there will be more competition and pressure to produce stand-out "smarter" products.

Agriculture research and technologies will also increasingly play a part in mitigating the impact of future realities like climate change, population growth and intensive land use.

"I tell students that these are really exciting places to work, but you have to have an open mind about what it is you want to do. There are many opportunities out there for our producers and our products, and the companies involved in getting them to market, but there will also be challenges.

"Having said that, I never would have believed, as an 18 year old, I'd be setting up animal breeding programmes in Inner Mongolia, or working with a goat milking company in India."

Campbell's family has a long association with Otago. Her great-grandfather, Thomas Hendra, helped make made the wrought iron gates in the University Archway; his daughter, Campbell's grandmother Elizabeth Campbell (nee Hendra), went to Otago and, while studying for her Bachelor of Arts, met her future husband (Campbell's grandfather), Archibald Campbell, in an Anthropology class; he graduated with a master's degree in History. Campbell's father, Professor John Campbell, studied medicine at Otago and was later Dean of the Otago Medical School between 1995 and 2004.

SAM STEVENS

Seismic science

Are there hidden seismic sources beneath Dunedin? This is one of the areas of investigation being undertaken by Otago's inaugural Professor of Earthquake Science, Mark Stirling, who leads a multidisciplinary collaboration examining fault structures, earthquake processes and their hazards.

The devastating earthquakes that rocked Christchurch in 2010 and 2011 held the world's attention long after the shocks abated.

Now Professor Mark Stirling is hoping that the next time New Zealand earthquakes make global headlines, it will be to focus not on disaster, but on science.

As Otago's inaugural Professor of Earthquake Science, Stirling heads a new multidisciplinary collaboration that aims to advance fundamental understanding of the relationships between fault structure, earthquake processes and consequential hazards.

The group draws on Otago's considerable research expertise from departments including Geology, Geography, Marine Science, Mathematics and Statistics, and Surveying, and will also be collaborating nationally and internationally.

Stirling, who was previously a principal scientist in seismic hazard analysis at GNS Science, is based at the University's Department of Geology,

which has undertaken decades of world-leading investigations into crustal structure and fault zone mechanics.

Funding to establish the new Chair came from organisations and individuals, including a substantial Alumni Annual Appeal. "Most of it came from generous donations from alumni," says Stirling. "And, although the Chair position is now established, more money still needs to be raised to have it fully funded."*

The group has already attracted funding from a number of organisations, including the Natural Hazards Research Platform, EQC, Southern California Earthquake Centre (SCEC) and QuakeCoRE, the latter recently set up by the government to build on existing research programmes to improve New Zealand's resilience to earthquake events.

"The fact that QuakeCoRE wants Otago as part of their team shows that we are already on the map," says Stirling.

"Otago is known as having well established aspects of earthquake science. The University has a reputation for doing

wide-ranging work in seismology and faulting. I want to build on that and build Otago's national and international reputation.

"I want to create a critical mass of students and collaborators inside and outside the University to establish a worldwide reputation in earthquake science.

"We're harnessing the resources of research from across the University and working with others in New Zealand such as Massey University, where we're applying the principles of earthquake hazards to volcanic hazards."

Stirling's connections come from a long and varied career. He did a double major in Geography and Geology at Otago, inspired by early travel around New Zealand with his parents.

"I was exposed to places like the West Coast. At school I was interested in tramping and the outdoors – more than just being in the mountains, but also how they formed. I asked questions and got interested.

“Initially I had three ideas for a career — science, art or becoming a pilot. The earth sciences idea meant that if I did science I would be able to understand the environment I was in — and I could get paid for going into the mountains.”

After his BSc, Stirling spent two years getting paid by the Department of Lands and Survey to work on geomorphology in the Central Otago mountains, which led him to return to study for an MSc (Hons) in Geology, researching the Central Otago landforms and the tectonic movements that formed them.

“After that I had a brief stint in the New Zealand Geological Survey, and then spent five years consulting, doing a lot of hazard-related work, including trenching on active faults. A lot of what I did was practical, but I kept being interested in the science of what I was doing and found myself writing up papers after work.”

The combination of work experience and academic record gained Stirling an invitation to do a PhD at the University of Nevada, Reno, looking at seismic hazard assessment.

“I wanted to broaden my knowledge and get the credentials that would allow me to move into a practical research career. I expanded my skill set to include seismology and seismic hazard, and in the process really learned how to write papers and express myself scientifically. It was great experience for me.”

The year he graduated he joined the Institute of Geological Sciences, which later became GNS Science.

“They needed someone to work on seismic hazards for New Zealand in the late 1990s because the maps we had were from the 1980s and well out of date. I worked on combining geological data and seismic data and understanding it.”

Stirling worked across the disciplines of earthquake geology, geomorphology, seismotectonics and seismic hazard

modelling and spent 15 years leading the New Zealand seismic hazard-mapping project.

Throughout his time at GNS Science he used a multidisciplinary approach that crossed boundaries of fundamental data collection, modelling and providing practical solutions for end users, and continued to publish his findings.

He strongly recommends the mix of industry and academia. “Once students have done a major block of study they should spend some time in the workplace. Have a spell and get some work experience because it gives you an appreciation of real-world interests and needs, and it can shape your future.

“Some say that if you are planning to end up in an academic career you should choose your subjects early and get in as quickly as you can because it can be hard to get into academia later in a career. But that isn’t always the case in progressive universities like Otago.”

Stirling’s appointment is evidence. “When I saw the position described in the *Otago Magazine* [issue 34, October 2012] I thought no mortal soul on this planet could satisfy all those criteria. But after I attended a symposium at Otago it was suggested that I should apply because it was important for earthquake science to be in touch with the end users.

“While it’s quite challenging to be Chair of Earthquake Science, I think the University was very progressive choosing someone with my kind of background.”

Teaching skills appeared to come naturally. “I did auditions during my three-day interview process. Fortunately I’d given a lot of talks over the years. You learn to reach out to an intelligent lay audience, which is what students are, and it went well.”

Stirling is now training top students to push the frontiers of multidisciplinary earthquake science and associated hazards.

“We’re addressing major points on the

earthquake science spectrum. I’m using a collaborative approach and reaching out to colleagues in departments like Geology, and Maths and Statistics, and pulling in bright students and postdocs to do some of the hard work in a number of areas.”

Current projects involving students include interpreting prehistoric earthquakes by doing geological studies on trenches dug across fault lines near Dunedin; seismic ground model simulations of the Dunstan Fault near the Clyde Dam; studying ancient fragile rock tors to see what they can tell us about what did not happen in earthquake prehistory; and looking at the potential for hidden seismic sources to exist under Dunedin.

“Otago is a wonderful laboratory for studying earthquake behaviour on a long time scale. We want to study the characteristics of the 13 major fault-lines that lie within 100 kilometres of Dunedin.


“Faults don’t always behave in a regular way. They can switch on and off, so we’re investigating how this behaviour works through time. The Akatore Fault is a local fault that appears to show this behaviour, based on our recent paleoseismic results.

“In the future we want to work in Southland and South Westland, and study what happens at the interaction between the Alpine Fault and the subduction zone under Fiordland.

“We’re starting small, but developing capability and building it up progressively, taking on large — but manageably large — projects.”

Stirling is still getting his own hands dirty, supervising students in the field and maintaining his international connections with earthquake hazard assessment for nuclear power plants and dams.

“Earthquake science is a very interesting field. I’d encourage any students attracted by it to look out for 200- and 300-level



classes and consider enrolling. It's very relevant to today's world and you'll certainly get a job out of it, especially if you want to travel overseas."

Stirling believes the Chair of Earthquake Science is the highlight of his career. "I enjoyed my time with GNS Science and learned a great deal from a wonderful group of scientists. However, this was an opportunity I couldn't miss. I'm here for the duration."

Thinking back to his schoolboy wish list of possible careers of science, art or becoming a pilot, science gets a big tick. Art gets one too, as Stirling founded the New Zealand arts festival Kiwiburn, based on the Burning Man in the US, and plays drums and sings backing vocals in bands.

He still goes tramping, but as for the pilot idea – so far Stirling has been too busy focusing on the ground beneath his feet.

NIGEL ZEGA

"Otago is a wonderful laboratory for studying earthquake behaviour on a long time scale."

Professor Mark Stirling

Photo: Alan Dove

On reflection

Research has been the “first love” of just-retired Dean of the University of Otago, Christchurch, Emeritus Professor Peter Joyce.

Emeritus Professor Peter Joyce has retired as Dean of the University of Otago, Christchurch after more than 40 years’ involvement with the campus, a time that began when he was a summer student in 1973 and culminating in 11 years as Dean. He retires as a respected psychiatrist, and as a Dean known for his research achievements and unwavering support for the development of research on the Christchurch campus.

Joyce entered medical school knowing he wanted to become a researcher. In his fifth year of medical school, during a consultation with a patient living with a chronic illness, he decided to specialise in psychiatry.

“I enjoyed listening to patients’ stories and came out of that chat [with the patient] and realised if I did psychiatry there would be a lot of human stories and a huge opportunity for research.”

As he reflects on his time as Dean, Joyce says his research – which he calls his “first love” – is undoubtedly his greatest achievement. This is as a researcher himself; as a supervisor of PhD students; Head of the Department of Psychological Medicine; and as Dean, where he built research capacity.

“After deciding on a career in psychiatry, I was thinking of research

opportunities. Mood disorders were common and I could research them in a number of settings. As a final year medical student I came across a number of patients with bipolar disorder who had been incorrectly diagnosed as suffering from schizophrenia, and that focused me towards studying and better understanding that condition.”

After graduating from medical school in 1978, Joyce undertook a PhD with the University of Otago, Christchurch, while working as a psychiatric registrar. He then began working as a clinician, researcher and lecturer. He was appointed to the Department of Psychological Medicine in 1984 and, two years later, became the youngest University of Otago professor when, aged 34, he became Head of the Department, a position he held for 19 years until his appointment as Dean of the Christchurch campus in 2006.

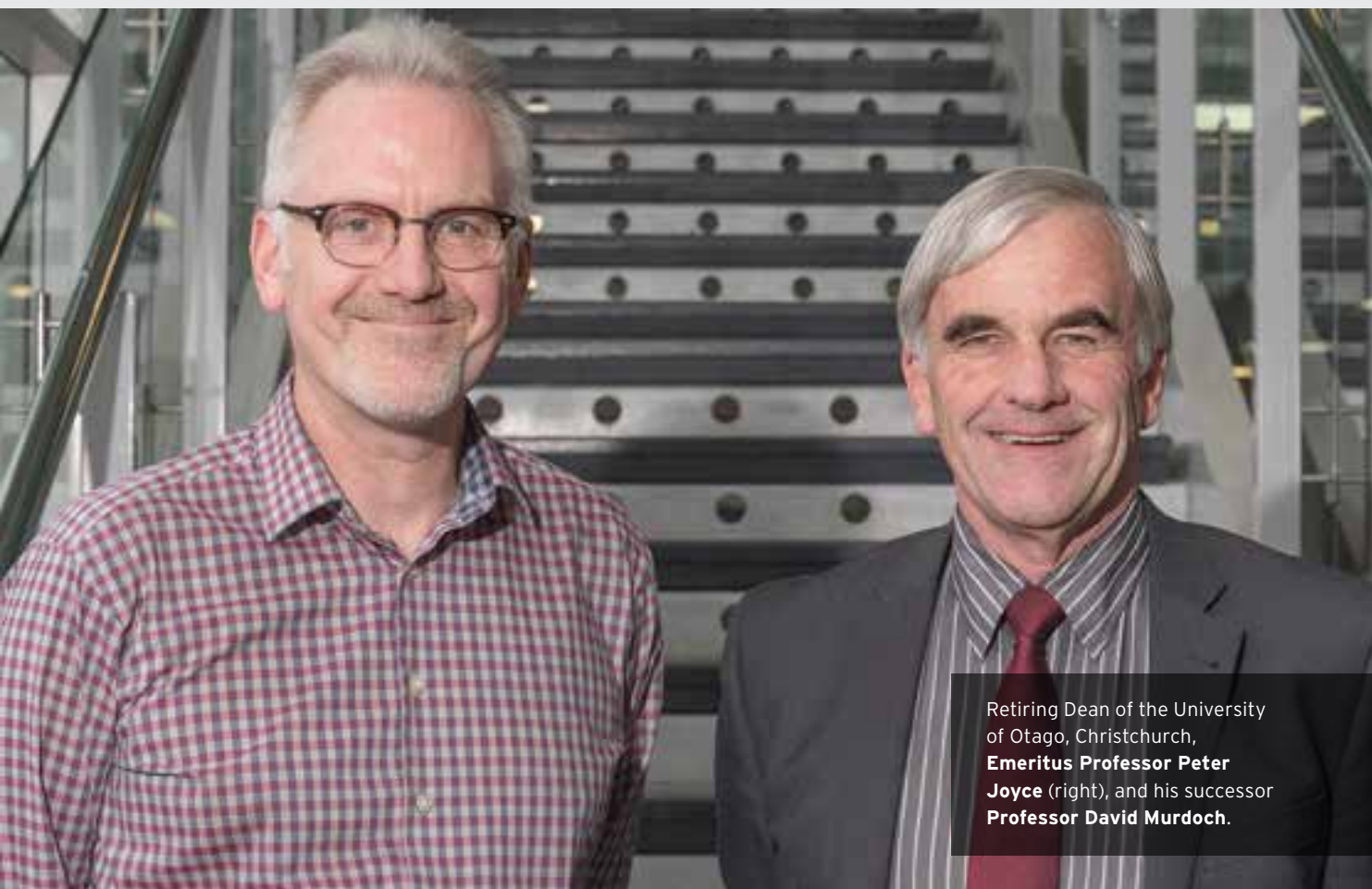
Over the years, Joyce’s research has concentrated on two major approaches: clinical trials and epidemiologic/family studies. The clinical trials involved recruiting patients with depression, bipolar disorder, anorexia nervosa, bulimia nervosa and binge eating disorder. Treatment trials have included antidepressant medications and a variety

of psychotherapies, especially cognitive behaviour therapy and interpersonal psychotherapy. For patients recruited to depression studies he had a particular interest in “personalised medicine” and trying to better understand which treatments worked for each individual patient.

The epidemiologic and family studies have included random community studies on the prevalence and risk factors for common mental disorders (The Christchurch Psychiatric Epidemiology Study), a case-controlled study of suicide attempts and suicide (Canterbury Suicide Project), family studies on alcohol dependence, personality, depression and bipolar disorder, and a longitudinal study on ageing called CHALICE.

Joyce says when he took over as Dean the campus already had a strong foundation in medical teaching and research, and four prestigious Health Research Council programmes. However, one research achievement of which he is particularly proud during his tenure as Dean was the introduction of permanent employment for top researchers.

“With no undergraduate students to teach in Christchurch, non-clinical researchers have no source of stable funding. Providing a permanent position



Retiring Dean of the University of Otago, Christchurch, **Emeritus Professor Peter Joyce** (right), and his successor **Professor David Murdoch**.

for our best researchers recognises their value in important research studies, gaining funding and supervising postgraduate students.”

Other sources of pride are the growth in bioengineering – driven by developments in radiology and orthopaedics; the development of postgraduate nursing studies; and significant changes in medical education such as the Simulation Centre and MIHI; and curriculum development focusing on professional development and health and safety.

The statistics from Joyce’s time as Dean speak volumes. In the past decade, Christchurch students were awarded 48 per cent of all Bachelor of Medicine, Bachelor of Surgery or MB ChBs with distinction.

“That’s almost half of all distinctions awarded across all of Otago’s three medical schools in Dunedin, Wellington and Christchurch,” Joyce says. This was further confirmed by the Performance-Based Research Fund assessment that ranked Christchurch highest of the three medical schools at Otago.

KIM THOMAS

Murdoch takes over as Dean

For the past 16 years Professor David Murdoch has worked at the University’s Christchurch campus and, as the newly appointed Dean, is keen to let others know what a wonderful environment it is in which to work.

“We have a real strength in producing health research. A large part of our success is due to our collaboration with the Canterbury District Health Board that allows us to do clinical studies with real-world outcomes. Our researchers and teachers also collaborate on a global scale, and I am keen to grow this international involvement during my time as Dean.”

Murdoch is a renowned infectious diseases researcher. He has played significant roles in some of the most influential infectious disease research projects, including a global childhood pneumonia study funded by the Bill & Melinda Gates Foundation, and New Zealand-wide Legionnaires’ disease surveillance programme.

Murdoch says by working together, researchers and organisations can achieve greater and mutually-beneficial outcomes for funders and patients. He is one of the leaders of One Health Aotearoa, which is an alliance between researchers working at the interface between human, animal and environmental health.

Murdoch has appointed Professor Vicky Cameron as his Deputy Dean. Her role will be to engage and build partnerships with organisations locally, nationally and internationally, and find new ways to attract postgraduate students.



The Chemistry Outreach team, from left: **Marina Roxburgh, Sage Robinson, Sean MacKay, Dr Dave Warren, Geoffrey Weal** and **Sam Sutherland**.

Photo: Graham Warman

Science to Sarawak

The University of Otago's Chemistry Outreach has reached out to an unlikely location.

If you were an intrepid explorer travelling up the Balleh River in Borneo in July, you might have come across a team from the Department of Chemistry delighting schoolchildren with a magical chemistry tour.

The team comprised professional practice fellow Dr Dave Warren, assistant research fellow Marina Roxburgh, and PhD students Sean MacKay, Sage Robinson, Sam Sutherland and Geoffrey Weal.

Warren explains that the trip to the Malaysian State of Sarawak on the island of Borneo arose from a casual chat. "A group of teachers from Sarawak, who were visiting the College of Education here, saw what we were doing at a school

in Waikouaiti and one of them said, 'This is fantastic. It's how we should be teaching in Sarawak.' And I said, 'Well, we could work with your students. Do you want us to come to Malaysia?'"

Warren and Roxburgh took a reconnaissance trip to Sarawak last year and Warren put together the most experienced outreach students for this year's adventure.

The group spent a week in Taiwan, attending a Marie Curie Science Camp, and then two weeks in Sarawak: one week working with teachers' college staff and students, and a second engaging with pupils at a school only accessible via a five-hour boat journey up river.

The Sarawak trip was the first offshore adventure for the Chemistry Outreach group, which has been operating for eight years. It comprises mostly postgraduate students who each year volunteer thousands of hours working with thousands of primary, intermediate and secondary school pupils in South Island schools.

The students devise and run weekly or fortnightly classes, preceded by chemistry magic shows. "The magic shows are like the hook," Roxburgh concedes. "We use them to engage the pupils and then they pay attention." The department covers all of the costs of the school visits.

“The target group originally was 10 to 12 year olds, because it has been identified across the OECD as the age when most kids get turned off by science,” Warren says. “That’s the group we really want to excite about science, but we are prepared to work with any age groups. It means that our students have to be very flexible to target the lessons to different age groups.

“We started going to local schools to help the teachers with resources and help the kids learn some chemistry,” Warren reflects. “Over the eight years, the programme has developed so that we do a lot of week-long camps and are also involved with Hands-On at Otago, the Otago University Advanced Schools Sciences Academy, the University’s Science Wānanga programme for secondary school students, and the New Zealand International Science Festival in Dunedin.”

The chemistry students have a universal desire to share their passion for science. “I love working with kids, teaching them what I do, it’s really cool,” enthuses Robinson.

Warren observes that the benefits of Chemistry Outreach flow both ways. “We have realised the value it gives is not just to the community, but also to our students who gain new skills in understanding and communicating scientific ideas effectively.”

“Scientists are not necessarily good at talking to people, such as politicians, who can make a difference,” Robinson asserts. “So developing scientists’ communications skills is vital.”

“We are used to teaching here, but you learn a lot by teaching in places such as Sarawak where there are very few resources and you have to rely on translators,” adds Weal, who also runs local “science for supper” drop-in sessions for kids and their families.

Sutherland notes that one of the bonuses for volunteers is that they can turn their time, effort and commitment into a Division of Sciences Outreach Certificate, which he has been awarded.

Chemistry Outreach at Otago is unique in having a dedicated staff member – Warren – working for it full-time. The New Zealand Council for Educational Research has highlighted Chemistry Outreach – along with Marine Sciences and Science Wānanga – as models for successful outreach within New Zealand. Warren hopes that the Sarawak trip will be a model for further overseas outreach experiences.

IAN DOUGHERTY



Thriving in a new world

Associate Professor James Maclaurin extols the benefits of the humanities, particularly in times of change and uncertainty.

What should young people study in times of rapid and unpredictable change? For most people, breadth is crucial and some humanities study is essential.

We live in interesting times – bombarded with news stories about global warming, about seismic technology-driven shifts in the way we live and work, about terrorism, and about the seemingly inexorable rise in inequality. Look out the window and not much seems to have changed, but the rising tide of uncertainty is certainly having effects. The economies of wealthy countries are persistently sluggish. Politics in normally stable countries wobble unpredictably left and right.

In schools and universities around the world, students are increasingly focused on the world of work. Institutions once driven by love of ideas and passion for knowledge are having to make room for a new vocabulary of employability and

return on investment. The response to all this uncertainty from governments in many countries, including our own, has been to encourage more young people to study science. In *Falling Behind? Boom, Bust & the Global Race for Scientific Talent*, Michael Teitelbaum argues that, since World War II, fear about not producing enough science graduates has run in cycles; in the 1950s and the 1970s and 1990s.

Unfortunately, the collateral damage of the current “new-found” enthusiasm for science has been a decrease in the number of young people studying in the humanities. In New Zealand change has been rapid and pervasive. Student numbers in humanities programmes that seemed both stable and sustainable just five years ago have dropped markedly nationwide. Government roles, policies and funding mechanisms have changed from championing “research” to an almost ubiquitous focus on “science”. We

have a Chief **Science** Advisor, a National Statement of **Science** Investment, a New Zealand **e-Science** Infrastructure, National **Science** Challenges etc. None of these is mirrored by roles, policies and funding mechanisms targeted at humanities scholarship.

For a humanities scholar, these are testing times. Humanity certainly does face scientific challenges and I am delighted by the opportunities available to my scientist friends and colleagues. But what does all this mean for my own discipline, Philosophy, and for the other disciplines in the Division of Humanities at the University of Otago? I wish I could announce a brilliant and immediate solution to the problem, but I can at least point to some light at the end of the tunnel...

First, and somewhat ironically, the evidence supporting the current swing away from the humanities fails scientific scrutiny. While science graduates often

“So how can young people thrive in uncertain times? Hedge your bets, be broad, nurture all the skills and virtues and knowledge you can. If you want to know what that looks like, check out Otago’s new Bachelor of Arts and Science (BASc).”

Associate Professor James Maclaurin

Photo: Alan Dove



appear to be marginally higher in rates of employment directly after leaving university, recent data from the Ministry of Education showed that nine years after university, BA graduates had pulled ahead of those with science degrees.

Countering the myth of unemployment is a constant task on my side of the University, nowhere more difficult than in my own discipline. Philosophy students love their subject, but respond sceptically when told that their employment prospects are bright. Indeed, I occasionally stoop to actually reading aloud to students from the careers page and, particularly, the placements page on my own department’s website to convince them that I’m not just making these rosy predictions up!

As Iain Hay argues in *Defending Letters*, despite many governments’ laser-like focus on return on investment, there is no good international evidence that countries increasing their proportions

of science graduates actually increase in their incomes. Moreover, widespread political instability, mass migrations of refugees, and the rise of intolerance and terrorism are reminding us daily that universities are not just machines for fuelling economies.

Humanities education promotes empathy, ethics and a better understanding of human reasoning and civil society. It teaches the essential skill of critically and logically interpreting subjective, complex, and imperfect social information. Perhaps most important, it helps us delight in the company and culture of those unlike ourselves.

Second, having almost all government research funding going to science projects has emboldened humanities scholars to get out and talk to scientists. In a recent visit to Otago, New Zealand’s Chief Science Advisor, Sir Peter Gluckman, argued that the greatest problems we face are also

the most complex. Global warming, conflicts leading to mass migrations, automation and the world of work have both technical and social/personal dimensions. In my own department, Philosophy, this new-found focus on interdisciplinary research has blossomed. We currently work with scientists and scholars in Public Health, Primary Health Care and General Practice, Tourism, Computer Science, Information Science, Law, Marketing, Zoology and Ecology.

So how can young people thrive in uncertain times? Hedge your bets, be broad, nurture all the skills and virtues and knowledge you can. If you want to know what that looks like, check out Otago’s new Bachelor of Arts and Science (BASc).

Associate Professor James Maclaurin
Associate Dean for Research in Humanities

Augmenting reality

Augmented reality (AR) has the potential to revolutionise the way we receive and interact with digital information, but is it ready for continuous use?

AR enhances a person's existing environment by overlaying digital information in real time. The user sees overlaid digital graphics that could provide information about their surroundings or about virtual game objects, such in the current game hit Pokémon Go. Dr Tobias Langlotz, from Otago's Information Science Human-Computer Interaction group, is now researching dedicated AR devices such as head-mounted displays, including Microsoft HoloLens or Google Glass, and is currently investigating technologies required for their daily and continuous use.

"Most augmented reality applications were written for short spontaneous usage of typically less than 10 minutes. Long-term usage therefore presents completely new challenges."

In particular, he is asking:

- How do we ensure we don't miss important things in our environment, for example passing cars, because they are obscured with overlaid information?
- How do we interact with the displayed information, given there are no keyboards, generally no touchscreen, and future head-mounted displays will be as large as normal glasses?
- What applications benefit the most from this kind of technology? Perhaps surgeons viewing medical-related information, or building developers planning their building

in situ. Or it could be everyone accessing the information currently displayed on mobile phones or smartwatches.

"There's huge potential for augmented reality, but it will only have an impact on the future of personal computing if such questions are answered," Langlotz says.



Dr Tobias Langlotz: "Most augmented reality applications were written for short spontaneous usage... Long-term usage therefore presents completely new challenges."

Gut reaction

Research at the University of Otago on immunisation in the gut promises more effective treatment for cancer patients.

Microbiology and Immunology senior lecturer, Dr Ros Kemp explains that the immune system in the gut is more tolerant than in other parts of the body, because it needs to protect bacteria that are necessary for food digestion, but this may compromise the immune system when dealing with cancer.

The research being undertaken by Kemp and her team* focuses on the complex differences between the immune system in healthy cells and tumour cells in the gut to predict the most effective treatment for individual patients.

As well as improving the prognosis for colorectal cancer patients, Kemp says she and her team are also investigating new immune cells, which should be useful for other researchers.

She acknowledges that the research would not be possible without the collaboration of surgeon Professor John McCall (Department of Surgical Sciences) and his many patients who agree to the use of their tumour and healthy bowel tissue samples.

Kemp notes that the research has a particular resonance for the Otago-Southland region, which has the highest per capital rate of colorectal cancer in the world. Although the gut is a unique

immune environment, she says that the research may well have applications for cancer treatment elsewhere in the body.

* Kemp's research team also comprises postgraduate students Dr Ed Taylor, Sam Norton, Kirsten Ward-Hartstonge, Shirley Shen, Ginny Niemi and Hamish Angus.



Dr Ros Kemp: Her research focuses on the differences between the immune system in healthy cells and tumour cells in the gut to predict the most effective treatment for individual patients.

Corpus conversations

A recently launched University of Otago blog is providing what its co-editors describe as a forum for conversations about medicine and life.

The *Corpus* blog is co-edited by Professor Barbara Brookes (Department of History and Art History) and PhD student Sue Wootton (Department of English and Linguistics).

Brookes has an extensive background in medical history research and co-founded the Medical Humanities Selective Programme for third-year medical students 20 years ago.

Wootton, an award-winning poet and former Burns Fellow at Otago, has a background in physiotherapy and has embarked on a doctorate on the affinity between creative writing and medicine.

"We are both interested in taking people out of their professional silos and bridging the distance between the humanities and medicine," Wootton says.

"The aim is to create more conversation around these issues," Brookes adds. "We want to highlight again the art of medicine: the skill in understanding people that is so important in diagnosis, for example."

The "digital salon", as they describe the blog, has so far featured an eclectic mix of contributions: from book reviews and original poems and anecdotes; to opinion pieces on the benefits to doctors of studying literature; and a light-hearted "essay" on Kiwi idioms in medicine.

Brookes and Wootton say that they are very pleased with the response from contributors, subscribers and casual readers of the blog, which they are updating weekly.

The *corpus.nz* website is the first medical humanities blog in New Zealand and one of the few such international forums.



Professor Barbara Brookes and Sue Wootton: their "digital salon" has featured an eclectic mix of contributions.

Prenatal protection

University of Otago, Christchurch researcher Dr Tony Walls and colleagues are enabling the vaccination of pregnant women to prevent infectious diseases in their infants.

A paediatrician and infectious diseases expert, Walls and his fellow researchers have conducted the first New Zealand trial of a vaccine for pregnant women, aimed at protecting their infants against whooping cough – or pertussis.

Small international trials had found no apparent safety concerns for vaccinated mothers, but the data available on their infants was very limited.

Canterbury infants who had been prenatally exposed to a tetanus, diphtheria and pertussis vaccine were closely monitored by Walls and his team for between six and 12 months after birth. None of the infants developed pertussis despite high rates in their community at the time and no adverse effects were found.

Walls says the "new thinking" internationally is that immunising pregnant women is a safe and effective way to give children immunity against some highly contagious and dangerous infections.

"We now recognise that this vaccine [protecting against pertussis in pregnant women] is the best way to prevent infants too young to be vaccinated themselves from getting whooping cough. This is very important because rates of whooping cough are rising in the community presently and unvaccinated children are at the highest risk of getting severe disease."

The Christchurch researchers are now trialling the effectiveness of a vaccine for pregnant women that protects against a virus that causes bronchiolitis, pneumonia and other serious respiratory illness in children.



Dr Tony Walls: "We now recognise that this vaccine is the best way to prevent infants too young to be vaccinated themselves from getting whooping cough."

Sound research

Dr Jen Cattermole (Department of Music) is passionate about taonga pūoro – or traditional Māori musical instruments – and those of Moriori, and is keen to increase our knowledge of their origins and development.

Cattermole explains that she had an early interest in music, carving and indigenous culture, but was first exposed to taonga pūoro while studying music at the University of Otago.

“Seeing and hearing these instruments, I was absolutely swept away by the beauty of the sounds and caught up in some of the stories around how they relate to the land and the flora and fauna. I was hooked from that moment on.”

Cattermole is collaborating with Maui Solomon, from the Hokotehi Moriori Trust, and independent researchers Alistair Fraser and James Webster.

“We are interested in the musical knowledge and practices the direct ancestors of Māori brought with them to Aotearoa New Zealand from Polynesia,” Cattermole says, “and how they adapted to cultural changes and to new materials available in different locations.”

She says that the planned research includes taking CT scans of taonga pūoro held in the Otago Museum, to create digital 3D models and 3D prints of the instruments.

“We want to learn more about the natural materials used – wood, bone, stone, shell, gourd – how the instruments were made

and what they sound like, because we are not allowed to play the ones in the museum.”

Cattermole has more than a theoretical interest in the subject: she is a competent player of various traditional Māori and Moriori wind, percussion and whirling instruments.



Dr Jen Cattermole: “We are interested in the musical knowledge and practices the direct ancestors of Māori brought with them to Aotearoa New Zealand from Polynesia...”

Staple measures

A University of Otago, Wellington (UOW) team has developed a bread recipe that could reduce the risk of heart disease, while keeping ingredient costs down.

Dietary risk factors are significant for non-communicable diseases such as cardiovascular disease, diabetes and cancer. “New Zealand could do more to prevent these diseases by improving food options,” says research team leader Professor Nick Wilson.

“It makes sense to research our diet staples such as bread, when thinking of how to reduce diet-related disease risks.

“Bread is a good way of increasing dietary intake of fibre, by including healthy seeds such as flaxseed/linseed. We’ve addressed the high salt levels found in most breads, by reducing the sodium and increasing potassium, which is particularly good for heart health,” says Wilson, from the UOW Department of Public Health.

The researchers used linear programming to find the best mix of healthy ingredients. Their \$1.50 loaf was superior to the commercial white loaves in various nutritional categories and this was especially so for their more expensive bread, which cost \$3 in ingredients.

The bread recipe has already been put to its first real test by a group of 11- to 12-year-old children who baked and tested it for Project Activate, a health and science pilot project, in July’s International Science Festival in Dunedin.

Wilson suggests it could be promoted by health agencies and provided in workplace cafeterias and public hospitals. An article about the bread is published in the journal *BMC Nutrition*.



Professor Nick Wilson: “Bread’s a good way of increasing dietary intake of fibre, by including healthy seeds such as flaxseed/linseed.”

Mind control

A drone rises from the ground, hovers then sinks slowly to the ground controlled only by the brain waves of a person sitting on a nearby bench.

The stuff of science fiction? Not any more, as a result of Brain Computer Interface technology being developed by Associate Professor Zhiyi Huang and a team of fellow Computer Science and Psychology researchers. The researchers have a number of outcomes “in mind”.

“We have external funding from a few Chinese companies who initially wanted video game controllers using EEG [electroencephalographic] technology, reading brainwaves and translating those into commands then sent to the game via Bluetooth,” Huang explains. “But this work has a number of medical applications also – for people who have limited mobility or those suffering from mood disorders.”

While standard diagnostic EEG readers extend over the whole head and read 32 channels, the Otago researchers (together with the Chinese companies) have developed a narrow band that fits around the forehead and reads only one channel. The headband records the EEG readings with a built-in amplifier that sends the signals to a small computer via Bluetooth technology, which then processes the brainwave patterns and translates them into instructions sent via WiFi to the drone or video game.

Huang says the Brain Computer Interface can also be used to control a mouse, allowing people with limited hand or arm movement to use their computers more easily. “In the near future we will also be looking at the technology’s potential to identify mounting levels of anxiety or depression in people with mood disorders and to activate remedial outputs.”



Associate Professor Zhiyi Huang: “This work has a number of medical applications also ...”

Sobering cancer findings

Otago researchers hope that a better understanding of the relationship of alcohol with cancer will help drinkers accept that current patterns of drinking need to change.

A new study has estimated that alcohol consumption was responsible for 236 cancer deaths among New Zealanders under 80 in 2012. It draws on work from previous studies conducted in New Zealand and internationally, showing that alcohol is causally related to breast and bowel cancer, as well as cancer of the mouth, pharynx, oesophagus, larynx and liver. It estimated mortality for 2007 and 2012.

Lead author, Professor Jennie Connor (Preventive and Social Medicine) says findings about breast cancer are particularly sobering.

“About 60 per cent of all alcohol-attributable cancer deaths in New Zealand women are from breast cancer. We estimated 71 breast cancer deaths in 2007 and 65 in 2012 were due to drinking, and about a third of these were associated with drinking less than two drinks a day on average.”

She says these deaths from cancer resulted in an average 10.4 years of life lost per person affected, with more loss of life among Māori than non-Māori, and for breast cancer compared with other cancers.

“While these alcohol-attributable cancer deaths are only 4.2 per cent of all cancer deaths under 80, what makes them so significant is that we know how to avoid them.

“Our findings strongly support the use of population-level strategies to reduce consumption because there is no level of drinking under which an increased risk of cancer can be completely avoided.”



Professor Jennie Connor: “While these alcohol-attributable cancer deaths are only 4.2 per cent of all cancer deaths under 80, what makes them so significant is that we know how to avoid them.”

Place benefits

Place branding has a positive effect on economic growth as University of Otago marketing researcher Dr Andrea Insch has found with her hometown Brisbane.

Place branding, often seen as synonymous with destination marketing, is the effort to capture the essence of a place – be it a region, town or city, or a nation.

Brisbane, Australia's third largest city, identified that it wanted to grow from being a “big country town” attracting tourists, and develop its branding around its potential importance to the Asia Pacific region.

Its repositioning sought to offset declining employment in agriculture and mining, and encourage tertiary education and professional, scientific and technical services clusters.

Insch's analysis of place branding and the repositioning of Brisbane from 1979 to 2013 shows the city has enjoyed strong population growth and diversification of the local economy.

Insch found the repositioning was associated with substantive urban change in the city's demographic and industrial structure. In particular, growth of tertiary education and professional, scientific and technical services sectors reinforced Brisbane's repositioning as a global city.

She says Brisbane provides a good example of how targeted rebranding campaigns promoting specialised competitive advantage can be highly effective for economic development.

“It can be difficult to quantify how much success is due to place branding or economic growth resulting from other factors, but there is no doubt place branding enhanced Brisbane's status and reputation, directed government policy and produced strong, positive economic outcomes for the city.”



Dr Andrea Insch: “... there is no doubt place branding enhanced Brisbane's status and reputation, directed government policy and produced strong, positive economic outcomes for the city.”

Peaceful settlement

To describe postgraduate student, resettlement caseworker and mother of four, Rula Y. Talahma, as busy would be an understatement.

Talahma is a Palestinian who grew up in the United States and Gaza. She completed degrees in civil engineering and in business administration at Birzeit University in the West Bank, and then worked as a research assistant and as a programme development specialist in the occupied territory.

She came to New Zealand four years ago to study at the University of Otago, accompanied by her husband and their three oldest children; their fourth child was born in Dunedin. Her husband, Tareq, is a senior officer working with the United Nations.

Talahma is completing a doctorate at the National Centre for Peace and Conflict Studies, on the evolution of planning under conflict, using the West Bank as a case study.

Since March, she has also been a full-time resettlement caseworker with New Zealand Red Cross in Dunedin, helping newly arrived Syrian families.

“I felt that the former refugees would need someone who understands their culture and speaks their language,” Talahma explains, “and someone who has been living in New Zealand for a while and understands the Kiwi culture.”

“My experience working with humanitarian organisations in

the West Bank, and my background in peace and conflict studies, are also helpful in settling former refugees from conflict areas.”

Talahma says that she hopes to continue resettlement work in the city on completion of her studies. “Dunedin is an amazing place,” she enthuses. “It is very family friendly.”



Rula Y. Talahma: “My experience working with humanitarian organisations in the West Bank, and my background in peace and conflict studies, are also helpful in settling former refugees from conflict areas.”

Future power

The future of energy and how new technologies might change domestic power usage are being examined in a MBIE-funded project, being undertaken by Dr Michael Jack (Energy Studies, Physics) together with researchers from Otago's Centre for Sustainability and Canterbury University.

"We anticipate there will be more renewable power generation, such as wind and solar, and also changes in domestic energy demand with new domestic appliances," Jack says. "This will result in more variable supply and sharper demand peaks. These changes will have a major impact on the electricity grid and how electricity is priced and distributed."

One of the possibilities for dealing with this is greater domestic demand-side management - being able to control electrical appliances in response to electricity price signals, or by exploiting distributed generation and energy storage options.

Jack likens this to "ripple control on steroids" - more control and subtlety in managing power usage at peak times and making smart use of periods with lower demand.

To plan for the future we need to understand domestic demand and how it might change, he says. So, as part of the study, researchers have placed specialised monitoring devices in more than 50 homes across the country, checking on power usage across different circuits at one-minute intervals.

Two years of detailed data will allow the researchers to develop simulations to explore different possible future scenarios - including the impact of new technologies such as more efficient appliances, solar photovoltaics, electric vehicles and battery storage, and the impact of different consumer behaviours as well.



Dr Michael Jack: "These changes will have a major impact on the electricity grid and how electricity is priced and distributed."

Early detection breakthrough

The early detection of cancer is critical for the survival of this disease that accounts for almost one third of deaths in New Zealand.

Professor Parry Guilford, director of Otago's Centre for Translational Cancer Research, has found a way to identify traces of cancer in the body that could allow doctors to find tumours while still barely detectable.

"If you can detect very small cancers and treat them at this early stage, the cure rates can be higher than 95 per cent," Guilford says. By comparison, the five-year survival rates for advanced cancers can be as low as 10 per cent.

So, targeting these small tumours, Guilford has used an HRC grant to identify cancer cells in body fluid samples, specifically looking at bladder cancer.

"A lot of cells fall off the wall of the normal bladder and cells also fall off the tumour, and you get both of these cell types in a urine sample.

"We divide the cells into very small groups of up to 10 cells each and then analyse hundreds to thousands of these groups using known cancer biomarkers. A single cancer cell can easily be detected with a background of 10 normal cells, but would never be seen in a background of thousands of cells."

Guilford says this study could be applicable to many cancers, including prostate, endometrial, lung and colon cancers. The test

could be performed using standard biological samples, including urine and stool samples, or vaginal swabs.

The next step is to refine how the approach could be easily used in clinical settings.



Professor Parry Guilford: "If you can detect very small cancers and treat them at this early stage the cure rates can be higher than 95 per cent."

Distance connections

Ingenious homegrown technology introduced 30 years ago gave rise to what has now become a thriving distance learning programme at Otago, linking students, teachers and professional organisations.

There is a distinct sense of irony, sitting in the office of Dr Sarah Stein, Director of Distance Learning, with the busy sound of students drifting up from the floor of the Commerce Building atrium below.

It is a reminder of Otago's commitment to being a campus-based university, but one which recognises the need to provide the opportunity, through distance learning, for people who want to tap into the University's areas of specialisation.

2016 marks 30 years since the beginning of distance learning at Otago – a few students, hooked up by University of Otago-developed telephone-conferencing technology to a sophisticated programme which has now provided teaching to 17,000 students.

Heading into the second semester this year Otago had close to 1,900 individual distance learning students, which equates to about 350 equivalent full-time students or EFTS. Of the University's 4,000 postgraduate students about 25 per cent are enrolled in distance programmes, offering around 120 undergraduate and postgraduate papers.

"Most of them are part time, and most of the programmes are postgraduate and closely connected to professional work," Stein explains.

"The majority of the programmes are at the postgraduate diploma and postgraduate certificate level. There is a range of masters' – both course-work masters' and masters' by thesis," she says.

"The University is very clear that it's an on-campus, face-to-face University. Having said that, under the Teaching Excellence imperative [of the *Strategic Direction to 2020*] there is a bold statement that the University has a commitment to distance learning – particularly in the postgraduate area and areas of particular Otago expertise. Many of these things can't be studied anywhere else."

Stein says postgraduate study is a better fit with distance learning because of the focus on particular professions and workplaces.

"These are people who are interested in upskilling and learning more about their job, and some of the distance programmes have become an essential qualification to be registered with particular professional organisations."

This has created close connections with both workplaces and professional organisations, which sits well with the strategic aims of the University, says Stein.

Many of the programmes reflect Otago's strengths in Health Sciences, providing ongoing education and

professional development for doctors, nurses, physiotherapists and occupational therapists. Subject areas such as Aviation Medicine, Emergency Medicine and Travel Medicine are all seeing growth.

Meanwhile, postgraduate study in Clothing and Textile Sciences has been around for some time now, resulting in a close relationship with industry.

There is limited undergraduate distance teaching – for example, the Bachelor of Theology, which runs alongside postgraduate programmes in areas such as ministry, chaplaincy and theology. Undergraduate distance learning is also offered in years three and four of the Bachelor of Social Work.

Looking ahead, Stein says Commerce looks set to be a key area of growth with a range of masters' programmes, while the Division of Sciences is also moving more strongly into the distance learning space – for example the Science Communication programme.

Stein believes one of Otago's ongoing strengths is the way the distance staff look after students.

"Our attrition rate is really low. I'm sure it's the quality of the support they get from the people involved in teaching and administering the programmes."

The College of Education also offers a busy distance learning programme.

“Some people learn better online, because you learn at your own pace and you personalise your learning.”

Professor Kwok-Wing Lai, Director of the Centre for Distance Education and Learning Technologies and who is chairing the working party organising the 30th anniversary celebrations, introduced distance learning at the college in 1997.

He had become increasingly intrigued by the possibilities of using ICT in education to support teaching and learning.

“In 1996 we didn’t have a lot of postgraduate students in Education. The

main reason was that they couldn’t come here to study, so I started looking at technologies to support them,” he says.

“There was little available so I actually had to design the whole course. I had to write my HTML page – I had to do everything. The server was in my office. It was fun, it was new.”

Lai says some of the most advanced pedagogy comes from people working in distance education because they have to be so learner centred. He also talks about

distance teaching as a way of providing equity for students who can’t be on the campus.

“It is not necessarily that on-campus learning is better than online learning. Distance learning is not for everyone, but some people learn better online, because you learn at your own pace and you personalise your learning,” he says.



Director of Distance Learning **Dr Sarah Stein** and Director of the Centre for Distance Education and Learning Technologies **Professor Kwok-Wing Lai**: “Most of the programmes are postgraduate and closely connected to professional work.”

Photo: Graham Warman

Distance history

Former distance services librarian Judy Fisher is tackling the task of bringing together information, pictures and anecdotes for a display on the history of distance learning.

As she has discovered, there is not a lot of archived material and, while she has been able to get information through the Hocken, when it comes to individual departments, some are more able to help than others.

The story of the sort of modern distance learning practised by Otago goes back to the 1970s and '80s when Peter McMechan was the director of the Otago University Extension which used to take public lectures and seminars around the southern South Island.

In a previous position, McMechan had already recognised the possibilities of using NASA PEACESAT satellite telecommunications technology for distance learning. Otago staff member Jack Salmon developed what was known as the Unitel teleconferencing system – a simple box with an in-built speaker and plug-in microphones that could be plugged into a phone line at a remote location and then connected back to a network base at the University.

Those first distance-taught University Extension courses offered non-credit programmes, ranging from a discussion of Benjamin Britten's music to a symposium on paediatrics.

A Certificate in Humanities became the first University credit distance course in 1986, offering a range of topics such as Studies on the Renaissance, Concepts of Tragedy, and Harmony and History. Fisher says 45 students graduated from this course in 1988.

"By 1991 there were established programmes in Dentistry, Theology, Pharmacy, Social Work and Sport Studies to name a few, and new programmes being set up in General Practice, and Dietetics. International offerings had been approved, including an Australasian Aviation Medicine programme and a master's degree in Pharmacy in conjunction with Hong Kong University."

Fisher says distance teaching using the homegrown Unitel technology was ground-breaking in its day.

MARK WRIGHT

Celebration events

Those organising the programme to mark the 30th anniversary of Distance Learning at Otago are keen to make it an academic event as well as a celebration.

Working party chair Professor Kwok-Wing Lai says this will not be just a party.

"I want to make this an academic activity with an academic programme with a public component. We will have presentations, we will have workshops, we will have posters and it will be open to the public."

There will be four key components – a symposium, an exhibition, a publication and a dinner.

Although it will be based out of the Hutton Theatre from 3-4 November in the Otago Museum, it will also be made available online – in good distance learning fashion. Many of the presentations will be given at Otago's other campuses in Christchurch (7 November), Wellington (9 November) and Auckland (11 November).

An exhibition on the evolution and development of distance programmes and technologies at Otago will be held concurrently with each symposium, and there will also be an extended period of exhibition in Dunedin from mid November to early December. A parallel web exhibition will also be held.

Electronic and print versions of a commemorative book will be published to mark the occasion. It will contain papers presented from the symposium along with commissioned chapters from key people involved in distance teaching over the years.

The celebrations will also include a dinner in Dunedin on 4 November to honour academic and general staff who have contributed to the success of distance learning at Otago.

Doctor at large

Alumnus Dr Xaviour Walker is looking at the big picture, taking a “macro” view of public health and policy.

Since graduating from the Otago Medical School in 2006, Dr Xaviour Walker has spent much of his career gaining broad medical and public health training to understand more about how he can “contribute to improving health care and reducing health disparities”.

He gives a “real-world” example from Baltimore – gained while he studied for his Master of Public Health at the Johns Hopkins Bloomberg School of Public Health last year – to show the role knowledge plays in reducing these disparities.

“In that city there’s a real issue with structural inequalities. From suburb to suburb the life expectancy varies greatly due to social deprivation. I was able to work in the needle exchange services and provide training on overdose prevention using intranasal naloxone, which is part of the Baltimore Health Commissioner’s work on reducing drug overdose deaths. Going out with a needle exchange van in the city to see the challenges some people face on a daily basis was a humbling experience.”

His time in the city yielded a “brief” that has been adopted by the Mayor’s office, and which informs funding for community health-workers and case managers to improve the continuity of care for women leaving prison.

He is now doing a fellowship at the University of California (Irvine)

in geriatrics and says this latest appointment fits with his medical career’s trajectory.

After graduating from Otago he worked at Dunedin Public Hospital, before practising rural emergency medicine in Australia. In 2009, he moved to Boston for an internal medicine residency and served as chief resident and a medical education fellow at Mount Auburn Hospital, Harvard Medical School. He then stayed on as an attending internal medicine physician and a clinical instructor at Harvard Medical School. During this time he also gained a Diploma in Tropical Medicine and Hygiene – a Gorgas course – in Peru.

This led to Baltimore and the Johns Hopkins Bloomberg School of Public Health. A bonus of his career has been working at local, state and federal levels – including the Baltimore City Health Department, Maryland Department of Health and Mental Hygiene, and National Institutes of Health (NIH) – and with private sector health-care providers, and occupational and travel medicine at GlaxoSmithKline global headquarters in Philadelphia.

His medical career has featured service on numerous medical advisory bodies and contributions to various international health publications. Earlier this year he was pleased to present a

white paper to the Office of Global Research at the National Institutes of Allergy and Infectious Diseases (NIAID), National Institutes of Health (NIH), on infectious diseases’ research opportunities in the Pacific Islands, which included looking at the work New Zealand, Australian and United States researchers have done in the Pacific region.

He was also involved in testifying to the Maryland State Senate on public health issues such as carbon monoxide poisoning and on having paid sick days for workers.

But compiling a list of impressive credentials has been incidental; inspiration for his career in internal medicine and studies first came at Otago through his mentor Brigadier Dr Brian McMahon, a retired army surgeon, and (later) Dr Leo Celi, a US-trained infectious diseases and ICU specialist who encouraged Walker to look at further postgraduate training in Boston.

Reading about pioneering Otago medical graduates such as plastic surgeon Dr Archibald McIndoe, who trained at the Mayo Clinic in Minnesota, and Sir Thomas Davis – the first Cook Islands doctor to graduate from Otago, and a recipient of a fellowship to the Harvard School of Public Health – provided inspiration.

“In the Islands I realised the importance of being a good doctor, but I also wanted to understand other dimensions of public health – such as preventative measures, systems improvement and infrastructure.”

Even before graduating from Otago, Walker found clinical work personally rewarding, but his experiences – especially Otago Medical School electives in Fiji, Samoa and Tonga – led to a belief in the need to also understand the “macro” of public health systems.

“In the Islands I realised the importance of being a good doctor, but I also wanted to understand other dimensions of public health – such as preventative measures, systems improvement and infrastructure. There are, for example, some very good clinicians in the Pacific, but in many places they do not have the labs and support resources. It really drove home the need to look at grassroots clinical work and the bigger picture of public health.”

Working in the region, and subsequently attending conferences on health in the Pacific, has added to his appreciation of its cultures and communities, and his own Tongan heritage.

“I was initially able to be involved with Pacific Islands medical students during my time at Otago, but I found my calling was going back to the Islands to practise medicine. This really helped me connect in lots of ways, and working in the hospitals and communities there is something I could do long term.”

Earlier this year, whilst in Dunedin attending the Division of Health Sciences Pacific Welcome, Walker described the University of Otago’s moves to capitalise

on historically strong links in the Pacific as “more than symbolic”.

“People’s health will improve in the region if there’s an integrated approach and universities build relationships with governments and medical bodies. Through various MOUs, the leadership at Otago is doing some great work in building these long-term relationships.”

Such initiatives might reconcile the Pacific’s “two worlds”; one is inhabited by tourists at five-star resorts while many local people live on under \$US1.25 per day.

In many low-income villages the impact of skin disease, pneumonia, infectious diseases and illness caused by fresh water shortages and rising diabetes rates is all too apparent.

“There’s a lot of work that needs to be done but, in a way, because of the fall-out from natural disasters and poor infrastructure, there is much that’s accepted by Pacific communities who have different materialistic values.

“I think formal relationships show a respect for [the community’s] ideas and mean the initiatives are collaborative and empower people, rather than make aid or assistance seem like a hand-out. It’s great the University is becoming more active in this role. Along with that, we need laboratory and other clinical infrastructure that will help local clinicians do excellent clinical work, which is a win-win.”

Walker is encouraged by the increased number of Pacific Islands student

enrolments in health-care programmes.

“It is a full credit to those involved, especially under the leadership of Faumuina Associate Professor Faafetai (Tai) Sopoaga, who has been a role model to myself and many young Pacific Islands health professionals.”

During his time at Otago, Walker enjoyed presidency of the Otago University Medical Students’ Association and, later, the New Zealand Medical Students’ Association.

These “unique opportunities” helped form his belief in contributing to medicine at various levels, and he links them with recent involvement with the World Medical Association (WMA), where he helped found the Junior Doctors Network and was the inaugural chair in 2011. He was recognised for his contribution with the International Resident Leadership award from the Royal College of Physicians and Surgeons of Canada in 2014. He is still working with the WMA as a policy adviser and encouraging the involvement of junior physicians worldwide.

“My Otago medical training was first class. I am extremely grateful for all the clinicians and lecturers who taught us over the years. During medical school I was also able to work rurally on rotations in Invercargill, on the West Coast and also in the Pacific Islands. One of the main reasons I looked to the US to add to my New Zealand training was to offer a set of skills that could be of use in New Zealand and the Pacific region.

Dr Xaviour Walker: “One of the main reasons I looked to the US to add to my New Zealand training was to offer a set of skills that could be of use in New Zealand and the Pacific region.”

Photo: Sharron Bennett

“Long term, I would like to come back to New Zealand to work clinically and in the medical school while continuing my interests in public health and policy. I have family in Dunedin and love working with students.”

His future work may be among a growing group of doctors and researchers who are working to connect links between the US, Australia and the Pacific area.

“I’ve been working with many of the New Zealanders who are based in the United States and there is a strong desire to leverage existing resources and efforts, and link US-based medical alumni back to New Zealand.

“I’ve benefitted from so many opportunities during my career, so a lot of what I do now is about opening the door for others coming through.”

Away from medicine, Walker enjoys spending time with his wife and two young children, and competing in long-distance running events, including the New York City Marathon, which he has completed five times (with a best placing of 89th overall), and the Boston Marathon, which he has run six times.

SAM STEVENS



University's significant economic impact

The University of Otago continues to make a major contribution to Dunedin and the national economy.

The Economic Impact Report for 2015 shows that the University is one of the 50 largest employers in the country and one of the largest in the South Island. The Dunedin campus, which has around 93 per cent of students and 88 per cent of all staff, injected an estimated \$881.1 million directly into the city's economy through spending by the University, its staff and students.

The University's campuses in Christchurch and Wellington contributed \$51.9 million and \$50.5 million to their respective economies. Invercargill contributed \$2.4 million, while the Auckland Centre and Wellington City Office combined injected \$800,000 into their respective economies.

Taking into account the estimated trickle-down effects of this, the total impact of hosting a campus in Dunedin added \$1.55 billion to the city's economy (supporting directly and indirectly 13,902

jobs), \$109.7 million to Christchurch (supporting 779 jobs), and \$96.4 million to Wellington (supporting 765 jobs).

Health research supported

University of Otago researchers have been awarded around \$43.8 million in new health research funding to support their world-class studies aimed at improving New Zealanders' health and well-being.

In the latest Health Research Council annual funding round, Otago researchers gained 22 contracts, including five major multi-million-dollar five-year programmes and 17 projects, each of which attracts more than one million dollars in funding. Otago's recipients are from across the University's campuses in Dunedin, Christchurch and Wellington with each campus hosting at least one of the major new programmes to receive funding.

China-New Zealand health research centre funded

The health-related National Science Challenges (NSCs) will collaborate in a new centre to enhance links between New Zealand and China relating to

research into non-communicable diseases.

Three NSCs will participate - Healthier Lives, Ageing Well and A Better Start. This collaboration currently encompasses 219 researchers in 26 institutions. Healthier Lives Director Professor Jim Mann (University of Otago) will head the new centre, which is named the New Zealand-China Non-Communicable Diseases Collaboration Centre. It is expected that as the centre is established it will be joined by other New Zealand groups who are working in this area to enhance collaborations with colleagues in China.

Otago joins life science venture fund

The University has become a member of the Medical Research Commercialisation Fund (MRCF), Australia's largest life science venture fund.

The fund provides dedicated investment funding and expertise to support the development of very early stage research innovations. Early-stage opportunities can receive up to \$AU3 million to support preclinical



Professor Jacinta Ruru with New Zealand Prime Minister the Rt Hon. John Key.

Teaching excellence

Faculty of Law's Professor Jacinta Ruru has received New Zealand's highest accolade for tertiary teaching, the Prime Minister's Supreme Award for Teaching Excellence. This is the fifth consecutive year that this award has been won by a University of Otago staff member.

The national Tertiary Teaching Excellence Awards are held annually at Parliament to celebrate New Zealand's finest tertiary teachers as recognised by their organisations, colleagues, learners and broader communities.

As the first Professor of Law of Māori descent in New Zealand and the only Māori Law Faculty staff member at the University of Otago since 1999, Professor Ruru is designing a new experience for students learning law. Her strategy is to give greater focus to Māori experiences of the law, Māori relationships with land and Māori challenges for change in the classroom.

Other Otago staff recognised in the awards were: Dr Judith Bateup (Microbiology and Immunology); Professor Darryl Tong (Oral Diagnostics and Surgical Sciences); and Dr Rachel Zajac (Psychology).

development. Ideas that successfully make it through that stage can receive a further \$AU17 million in investment support.

Dr Gavin Clark, Director of the University's Research and Enterprise Office, says joining the MRCF opens exciting opportunities to develop important biomedical discoveries at the University into technologies that can improve people's health and well-being.

Lab-in-a-Box visit

Trying on 3D goggles to see the solar system close-up, viewing a projected image of bee wings, and speaking with local high school pupils about their research pursuits were all part of Governor-General Sir Jerry Mateparae's May visit to the Lab-in-a-Box: a science laboratory which folds away into a standard shipping container, so it can be transported around the country.

Otago's Professor Peter Dearden was Sir Jerry's guide during his tour of the lab, which takes science to the country to encourage and inspire rural schools and communities to engage with science and technology. It is a partnership between the University, Otago Polytechnic, the Otago Museum, and Orokonui Ecosanctuary, and is also supported by a large range of local institutions.



Professor Peter Dearden and Governor-General, His Excellency, Lt Gen. the Rt Hon. Sir Jerry Mateparae outside the Lab-in-a-Box.

Photo: Sharron Bennett

Awards/Achievements



Professors **Steve Dawson** (Marine Science) and **Liz Slooten** (Zoology) above, have been jointly awarded the New Zealand Marine Science Society's inaugural John Morton Medal in recognition of their outstanding contributions to the advancement of marine conservation and sustainability in New Zealand.

Professor **Lisa Matisoo-Smith** (Anatomy), an internationally renowned



biological anthropologist who pioneered the use of evolutionary genetics to trace Pacific migrations, is the latest recipient of the Distinguished

Research Medal, the University of Otago's highest distinction.

Established health researchers Professors **Richie Poulton** (Psychology) and **Warren Tate** (Biochemistry), and emerging researchers Associate Professor **Suetonia Palmer** (Medicine, Christchurch) and Dr **Emma Wyeth** (Preventive and Social Medicine) have received Health Research Council awards for an outstanding contribution to health research excellence, leadership and impact.

Professor **Tim Wilkinson** (Medicine, Christchurch) is the latest recipient of the Australian and New Zealand Association for Health Professional Educators award. Based in Christchurch, Professor Wilkinson is programme director for medical student training in the Bachelor of Medicine and Bachelor of Surgery across the University's three schools - in Dunedin, Christchurch and Wellington.

Christchurch gastroenterologist Professor **Richard Gearry** is this year's winner of the Carl Smith Medal and

Rowheath Trust Award, which recognises outstanding research performance from University of Otago staff early in their research career. In less than a decade as an independent researcher, Professor Gearry has become one of the world's foremost experts on gastroenterological research and clinical management.

Professor **Elizabeth Rose** (Management) has become a Fellow



of the Academy of International Business in recognition of her contributions to scholarly development in the field of international business.

Professor **Hamish Spencer** (Zoology), has been appointed by the Ministry of Business, Innovation and Employment as one of two Departmental Science Advisors.

Associate Professor **Nicola Taylor** (Children's Issues Centre) has been named joint winner of the 2016 Tim Salus President's Award by the Association of Family and Conciliation Courts in recognition of her international work in promoting an empirically-based approach in the field of child abduction and relocation.

Associate Professor **Donna Buckingham** (Law) has been named as a New Zealand Law Commissioner.

Health Research Council Emerging Researcher First Grants have been won by two up-and-coming University of Otago, Christchurch researchers. Dr **Claire Heppenstall** (Medicine) receives \$145,459 for a project focused on taking rest-home residents off unnecessary medicines, while Dr **Pippa Scott** (Pathology) gains \$149,982 to investigate transmission of infectious bacteria between cattle and people in rural communities. The HRC also announced seven Feasibility Study recipients, four of whom are Otago researchers: Associate Professor **Bob Hancox** (Preventive and Social Medicine), Professor **Janet Hoek** (Marketing), Professor **Pauline Norris** (Pharmacy) and Dr **Lisa Te Morenga** (Human Nutrition).

Six up-and-coming University of

Otago staff have been announced as this year's recipients of Early Career Awards for Distinction in Research. Dr **Louise Bicknell** (Pathology, Dunedin School of Medicine), Dr **Peter Mace** (Biochemistry), Dr **Rob Middag** (Chemistry), Dr **Giles Newton-Howes** (Psychological Medicine, Wellington), Dr **Damian Scarf** (Psychology) and Dr **Benjamin Schonthal** (Theology and Religion) have been selected for the award on the basis of their outstanding research achievements.

University of Otago and the MacDiarmid Institute's Dr **Carla**



Meledandri (Chemistry) has been named a joint winner of the annual Emerging Innovator Award at the KiwiNet Research Commercialisation

Awards, for her work harnessing silver nanoparticles to treat and prevent dental disease.

The College of Education's Dr **David Berg** has received the 2016 national Emerging Teacher Educator Award, from the Teacher Education Forum of Aotearoa New Zealand.

A number of current and former Otago students have received 2016 Fulbright awards. **Maia Wikaira** received a Fulbright-Ngā Pae o te Māramatanga Graduate Award. **Henry Lane** and **Chantal Juntao Chen** received Fulbright Science and Innovation Graduate Awards. **Clara Pau** and **Emily Draper** received Fulbright New Zealand General Graduate Awards. Also, **Daniel Coppersmith** and **David Grainger** received a Fulbright US Graduate and Fulbright US Scholar Awards respectively to study at Otago.

The four-part series *Predict my Future - The Science of Us*, a television documentary on the University of Otago's internationally lauded Dunedin Study, has won a silver world medal in the prestigious 2016 New York Festivals International Television and Film Awards.

Appointments

Professor **Robin Gauld** as the next Dean of the University's Otago Business

School. Professor Gauld is a social scientist whose degrees are in public policy, administration and management.



He is currently head of the Department of Preventive and Social Medicine. He is also founding director of the University's Centre for Health Systems, which spans the

Business School and the Dunedin School of Medicine.

Professor **David Murdoch** as the next Dean of the University of Otago's Christchurch campus. The infectious diseases expert is currently head of the campus' Department of Pathology and has been involved in significant infectious disease research projects including a global childhood pneumonia study funded by the Bill & Melinda Gates Foundation, and a New Zealand-wide Legionnaires' disease surveillance programme.

Dr **Carlo Marra** as the latest Dean of the School of Pharmacy. Dr Marra was previously Dean and Professor at the School of Pharmacy at Memorial University of Newfoundland. His research has mainly focused on health economics, quality-of-life research and pharmacoepidemiology, including evaluations in musculoskeletal and respiratory diseases.

Mr **Dave Scott** as Proctor. He was previously the Dunedin Area Response Manager with Dunedin Police, and Southern Police District Centre Co-ordinator. He took up his role in May.

Emeritus Professors

The University Council has recently awarded the following academics the status of Emeritus Professor: Professor **John J. Evans** (Obstetrics and Gynaecology), Professor **David F. Gerrard** (Dunedin School of Medicine), Professor **Brendan J. Gray** (Marketing), Professor **J. Frank T. Griffin** (Microbiology and Immunology), Professor **Robert W. Lawson** (Marketing), Professor **Peter R. Joyce** (Psychological Medicine, Christchurch) and Professor **David Wharton** (Zoology).

Queen's Birthday Honours

Alumni and academic staff recognised in the Queen's Birthday Honours include:

Companion of the New Zealand Order of Merit (CNZM): Professor **John Broughton**, for services to Māori health, theatre and the community.

Member of the Order of Merit (MNZM): Professor **Elisabeth (Judy) Bellingham**, for services to classical singing; Mr **Michael David Ferrari**, for services to business and the community; Dr **Garry Harold Nixon**, for services to rural health.

Queen's Service Medal (QSM): Mrs **Lynley Barbara Dear**, for services as an author and to historical research.

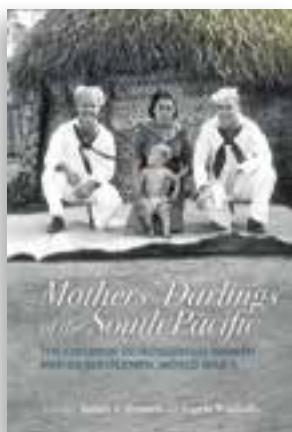
Obituaries

Emeritus Professor of Education and Childhood Studies, and Fellow of the Royal Society of New Zealand, **Anne B. Smith**, CNZM. In 1995, she became the founding Director of the Children's Issues Centre. She was a driving force behind early childhood education in New Zealand and beyond, and a passionate advocate for children's rights.

Emeritus Professor **Richard J. Norris**. Emeritus Professor Norris joined Otago in 1970, becoming a professor in 1999. His research interests included structural geology and tectonics; neotectonics, paleoseismology, and Alpine Fault structure; New Zealand Cenozoic tectonics and basin evolution; as well as deformation in the Haast schists.

Emeritus Professor **A. John Campbell**. A Fellow of the Royal Australasian College of Physicians, Emeritus Professor Campbell joined Otago in 1980. He was a former chairman of the Medical Council of New Zealand and was Dean of the University of Otago's Faculty of Medicine 1995-2004.

Emeritus Professor **Brian Robinson**. A former head of the Department of Chemistry, Professor Robinson was a significant figure in New Zealand science over many decades. He was a wide-ranging and prolific researcher whose interests included organometallic and medical inorganic materials.



Mothers' Darlings of the South Pacific

The children of indigenous women and US servicemen, World War II

Edited by Judith A. Bennett and Angela Wanhalla

Like a human tsunami, World War II brought two million American servicemen to the South Pacific where they left a human legacy of some thousands of children.

Mothers' Darlings of the South Pacific traces the intimate relationships that existed in the wartime Pacific between US servicemen and indigenous women, and considers the fate of the resulting children.

The writers interviewed many of the children of the Americans and some of the few surviving mothers, as well as others who recalled the wartime presence in their islands. Oral histories reveal what the records of colonial governments and the military largely have ignored, providing a perspective on the effects of the US occupation that until now has been disregarded by historians of the Pacific war.



Artefacts of Encounter

Cook's voyages, colonial collecting and museum histories

Edited by Nicholas Thomas, Julie Adams, Billie Lythberg, Maia Nuku, Amiria Salmond
Photographs by Gwil Owen

The Pacific artefacts and works of art collected during the three voyages of Captain James Cook and the navigators, traders and missionaries who followed him are of foundational importance for the study of art and culture in Oceania.

Recently, scholars from the Pacific and further afield, working with Pacific artefacts at the Museum of Archaeology and Anthropology in Cambridge (MAA), have set out to challenge and rethink some longstanding assumptions on their significance.

The Cook voyage collection at the MAA is among the four or five most important in the world, containing over 200 of the 2,000-odd objects with Cook-voyage provenance that are dispersed throughout the world. The collection includes some 100 artefacts dating from Cook's first voyage.

This book catalogues this collection and its scholarship sheds new light on the significance of many artefacts of encounter.

For further information: Otago University Press | otago.ac.nz/press | university.press@otago.ac.nz

Books by Otago alumni

A Dame We Knew: A Tribute to Dame Cecily Pickerill, edited by Beryl Harris, December 2014.

Governor William Hobson: His Health Problems and Final Illness, Ronald V. Trubuhovich, foreword by Paul Moon, self published, December 2015.

Extractions to Reconstruction: The Development of Oral and Maxillofacial Surgery in Australia and New Zealand, by Alastair Goss and Rob Linn, Historical Consultants Pty, Adelaide, 2015.

12 Netball Poems, by Mark Pirie, addenda by Bill Sutton, The Night Press, October 2015.

Women of the Catlins: Life in the Deep South, Diana Noonan (editor) and Cris Antona (photographer), University of Otago Press, April 2016.

Misi Utu: Dr D. W. Hoodless: An Educator's Vision and the Central Medical School, Fiji, by Margaret Guthrie, Mary Egan Publishing, Auckland.

Main Trunk Lines: Collected Railway Poems, by Michael O'Leary, HeadworX, Wellington, October 2015.

Ketamine for Depression, by Stephen J. Hyde, Xlibris, September 2015.

Worldly Goods, by Alice Petersen, Biblioasis, May 2016.

My Beloved Man: The Letters of Benjamin Britten and Peter Pears, edited by Nicholas Clark, Vicki P. Stroeher, Jude Brimmer, Boydell and Brewer (UK), June 2016.

Skippers: Triumph and Tragedy, by Danny Knudson, Lakes District Museum and the Queenstown and District Historical Society, April 2016.

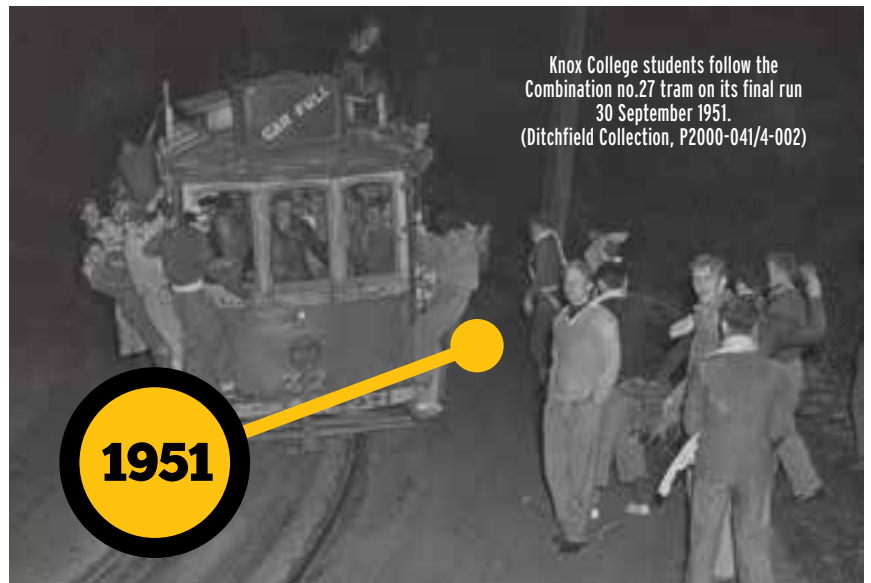
Alumni:

If you have recently published a book email mag.editor@otago.ac.nz

150 forward

On 3 June 1869 the University of Otago Ordinance became law. The determination of this province's early settlers to establish a university in Dunedin was becoming a reality. Their aim was to provide an education "of a thoroughly practical character, suited to the circumstances of the colony and calculated to meet the requirements of the youths who will, in future years, take a more or less prominent part in its affairs".

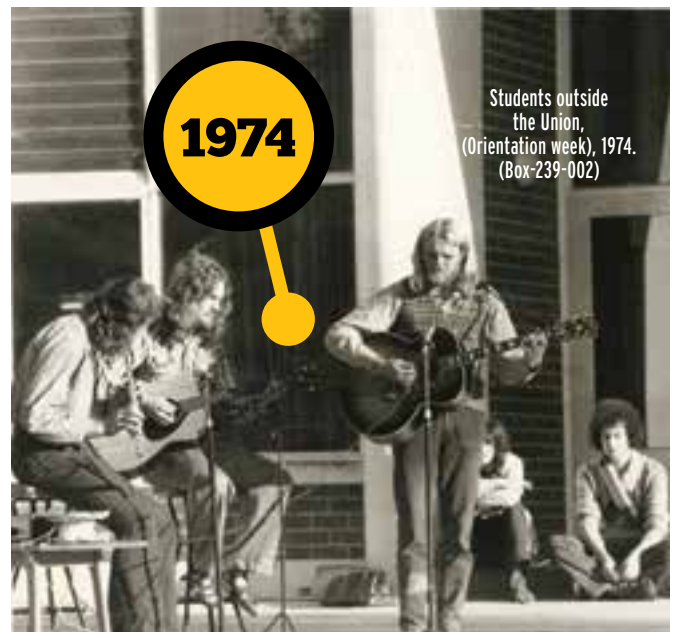
As the University approaches the 150th anniversary of its foundation, in this and forthcoming issues of the *Otago Magazine* we will be highlighting aspects of life at Otago over the past decades, drawing on photographs from the Hocken Collections.





Entry courtyard,
Central Library, 1965.
(ODT Collection,
P1998-028/04-003)

1965



Students outside
the Union,
(Orientation week), 1974.
(Box-239-002)

1974



1980

The cast of the Blob Lowe Metaphysical Video
Show, Capping Concert 1980 (from left): Gerald
Fitzgerald, Michael Gilchrist, Barbara Gilmour,
John Dawson, John Gibson.
(S13-224f)



Otago student protest against
rising fees, 28 September 1993.
(OUSA archives, AG-540/011)

1993

Reunions + Events

2016

Home Sciences Class of 1966 reunion
28 October, New Plymouth

Distance Learning 30th anniversary celebrations
3-4 November, Dunedin, Christchurch and Wellington

Chicago alumni event
5 November, Chicago, USA

Cumberland College Class of 1989 reunion
18-20 November, Dunedin

Dental Class of 1976 reunion
25-27 November, Dunedin

Graduation brunches
10, 14, 17 December, University of Otago, Dunedin

2017

Phys Ed Class of 1977 reunion
27-29 January, Dunedin

Dental Class of 1966 reunion
16-19 March, Queenstown

Medical Class of 1977 reunion
21-24 October, Wellington

Medical Class of 1967 reunion
4-8 December, Dunedin

Dental Class of 1967 reunion
Date tbc, Dunedin

2018

Medical Class of 1964 reunion
22-25 March, Tongariro National Park

Dental Class of 1968 reunion
22-25 March, Dunedin

Medical Class of 1968 reunion
27-29 November, Dunedin

Selwyn College 125th anniversary reunion
Date tbc, Dunedin

2019

Unicol 50th anniversary reunion
November, Dunedin

For more information

Visit: otago.ac.nz/alumni/events

For reunions, email:
reunions.alumni@otago.ac.nz

For events, email:
functions.alumni@otago.ac.nz
Phone: +64 3 479 4516

The Fred Hollows Foundation reception, University of Otago, 7 September



From left: Dr John Adams, Associate Dean (Student Affairs) Dunedin School of Medicine, and President, Otago Medical Alumni Association; Andrew Bell, Executive Director Fred Hollows Foundation; Vice-Chancellor Professor Harlene Hayne; Sir Maarten Wevers, Fred Hollows Foundation board member; Tanya Woolcott (Fred Hollows' daughter); His Excellency Peter Woolcott, Australian High Commissioner to New Zealand; Dr Dot Page; Louise Lawrence; Samy Karki; Connor Fitzgerald.

Colin Geary Professorial Lecture Series, Dunedin, 11 August



Professor Ian Morison and Paul Kennett.



Greer Harper and Anna Crawford.

Science of Sports Lunch with Sir Graham Henry, Dunedin, 24 June



Medical Class of 1996, 20th reunion, Dunedin, April 2016



Brunei alumni reception, 21 July



Events matter

There are more than 147,000 Otago alumni living in New Zealand and around the world, and we can reach about 100,000 of them electronically or by post. Each year a further 5,000 graduates are added to our ever-growing alumni community.

Maintaining contact with such a large group of people can be difficult as they move on with their lives – move cities, get a job, then another, move locations – it is easy to lose touch.

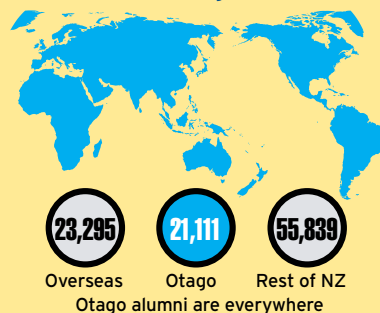
However, Otago alumni events and reunions are great ways for people to reconnect, especially alumni living in other

parts of New Zealand or overseas. About 80 per cent of our alumni live outside the Dunedin area.

When our alumni gather at these events, it is wonderful to see people sharing memories of Otago – from the friends they made, social activities they enjoyed and the residential college they lived in, to the lecturers who taught them and the knowledge they gained during their studies.

We hold between 15 and 20 alumni events each year. We want to build on this by offering a greater variety of activities to cater for a wide range of interests.

If you are interested in the events we're holding in your area, please contact us functions.alumni@otago.ac.nz



WHAT IN THE WORLD?

Backing innovation

Otago physiotherapy alumnus turned inventor Steve August has used his skills to create the Backpod, a device to treat the back and neck problems increasingly prevalent among young people.

Not everyone would consider failing to get into medical school to be their lucky break, but that is how Steve August views the turn of events in 1977 that led to his successful 30-plus-year career as a physiotherapist and, now, entrepreneur.

"I didn't have the chemistry prerequisites needed for medical school, which proved to be my lucky break. Physiotherapy seemed to be the next best bet and I entered into it with no real idea of what was involved," he recalls.

"But I lucked into something I was good at, found fascinating and let me talk to lots of different people. I've had a great time."

Now retired from his home-based private practice in Dunedin, August's energy and creative flair are fuelling his new career as an inventor and entrepreneur.

Not that he had to look very far for inspiration for his latest venture, the Backpod. It was, in fact, the increasing prevalence of poor posture among young

people that he saw on the streets and in the coffee shops every day that inspired his simply-designed device – a half-ellipse, made from silicon and plastic, to be used at home for the treatment of upper back and neck problems.

August has dubbed the increasingly common condition he sees as "the iHunch": young people with hunched shoulders and curved upper backs, heads hung forward, which, he says, is the result of hours spent every day peering



Steve August: "I lucked into something I was good at, found fascinating and let me talk to lots of different people. I've had a great time."

at smartphones, tablets and laptops. (August's observations about the "iHunch" and its health implications for a generation has garnered much international media attention, including a mention in a New York Times opinion piece* and an interview on the US morning television programme *Good Morning, America*.)

"During my 30 years as a physiotherapist, upper back and neck pain was, by far, the most common problem that walked through my door," he says. "But those were adults, in their 40s and beyond. Now the problem is more widespread and occurring at a much younger age."

August developed the Backpod with the help of industrial design expert Andrew Wallace and Nick Laird, former head of the University's Department of Design Studies, launching the product in 2012. It has since sold more than 20,000 units worldwide and garnered a number of design and innovation awards, including the German Red Dot design award.

The Backpod is not August's first invention to go to market. Thirteen years ago he created and launched the Kiwitub, a chemical-free spa pool that operates without electricity and which is still manufactured and sold today – largely through word-of-mouth referrals.

He credits his training at the University of Otago with helping to encourage his innovation.

"My experience has always been that there is no tall-poppy chopping at the University of Otago, that there is a culture of support and that everything I've done built on what I did before. There is a natural sequence and, certainly, my physio diploma was the start of that sequence of success," he says.

"I think the awards the Backpod has won indicate that we can definitely meet and lead world standards in practical health science innovations from here."

* www.nytimes.com/2015/12/13/opinion/sunday/your-iphone-is-ruining-your-posture-and-your-mood.html?_r=1

Alumni benefits

eNewsletters for Otago alumni

There is a range of eNewsletters available for Otago alumni. If you have an interest in the following subjects and want to stay informed, you are welcome to subscribe to these departmental newsletters:

- Classics
- History and Art History
- Law
- Physical Education, Sport and Exercise Sciences.
- Economics
- Music
- Otago Business School

Email database.alumni@otago.ac.nz and tell us the eNewsletters you wish to receive.

GoinGlobal: career development for alumni

The University of Otago brings its GoinGlobal subscription to Otago alumni, students and staff. GoinGlobal offers alumni access to 80,000 pages of career and employment information. Both the GoinGlobal Country Career Guides and the USA and Canadian City Career Guides provide professional advice on such topics as:

- current employment outlook and hiring trends
- job search resources
- executive recruiters and staffing agencies
- work permit regulations
- salary ranges
- resume/CV writing guidelines
- professional and social networking groups
- trade associations
- interview and cultural advice.

You can join GoinGlobal by visiting otago.ac.nz/alumni/benefits

Connect with Otago Alumni and Friends on social media

facebook.com/otagoalumni
linkedin.com/groups/79350
instagram.com/otagoalumni

eConnect newsletter

Stay up to date with the latest alumni news, events, profiles and competitions delivered to your email inbox. Sign up for eConnect by emailing database.alumni@otago.ac.nz or phone 0800 80 80 98 and ask to update your details.



WHERE IN THE WORLD ARE YOU?

We want to stay in contact with you wherever you are.

Email alumni@otago.ac.nz

Visit uolumni.otago.ac.nz/where-in-the-world-are-you to find out where other Otago alumni are living.

Supporting Otago



The Charles Farthing Memorial Fund, established in memory of alumnus Charles Farthing's pioneering work in the fight against AIDS, aims to continue the battle against infectious disease by supporting the work of the Christchurch Infection Group.

In the early 1980s Otago alumnus Dr Charles Farthing saw his first case of HIV (human immunodeficiency virus) infection. He was studying dermatology at St Stephens Hospital, in London, and soon realised that the rare skin infections in his patients were being caused by a condition that was to become known as AIDS.

From that time, he devoted his life to researching, treating and raising the profile of this disease. As the HIV epidemic spread – accompanied by mounting public anxiety – he established Britain's first purpose-built AIDS clinic and convinced the British government of the need for a public education programme. Among his allies in this were Elton John and the late Diana, Princess of Wales.

His many achievements included the founding of the UK Aids Foundation and HARPA (Helping AIDS in Resource

Poor Areas). He helped set up education programmes and AIDS clinics in countries such as Ukraine, Uganda and South Africa, and was one of the first Western specialists to teach and advise Chinese medical professionals on HIV.

At the time of his premature death of a heart attack in 2014, at the age of 60, Dr Farthing was working for Merck, Sharp and Dohme in Hong Kong as the Asia Pacific director of medical affairs for infectious diseases.

In his memory, his University of Otago classmates of 1976 have established the Charles Farthing Memorial Fund, to help support scholarships and research being undertaken by the University of Otago, Christchurch's Infection Group.

Like Dr Farthing, this team of biomedical scientists, infectious disease specialists, microbiologists,

epidemiologists and pharmacologists is committed to finding practical solutions to diagnosing, treating and preventing serious and life-threatening infections.

Their work is wide-ranging and significant, with collaborators from Oxford, Cambridge, Johns Hopkins, Western Australia and Massey Universities. It includes:

- a new tool for the prediction of death rates from community-acquired pneumonia
- innovative breath tests to diagnose bacterial causes of pneumonia and lung infections
- radical changes in the global treatment of hepatitis C
- new ways to identify patients with septicemia
- finding ways to repair gut immune function damaged by HIV

I would like to support the Charles Farthing Memorial Fund

Name

Address

Email Tel

I would like to contribute by way of a recurring donation:

\$ Gift duration years

I would like to make a single donation: \$

Please debit my credit card: ☐ Visa ☐ Mastercard

Card number

Expiry date / CVC#

Cardholder's name

Signature

“The fund will help us attract bright young medical researchers here through scholarships and fellowships, and build further capacity in this important work.”

- testing new approaches to prescribing antibiotics to help reduce resistance.

Professor Steve Chambers – a classmate of Farthing’s – is a key member of this group and has helped drive the establishment of the memorial fund. He believes one of the best ways to honour Dr Farthing’s memory and achievements is to attract and support bright young scientists and physicians to take up the challenge of research into infection.

“People often think infection has been conquered, but over 25 per cent of admissions to hospital today are still for infection,” he says. “We are constantly challenged and moved by the consequences of infection and sepsis – whether it is acquired in the community, such as HIV or meningitis, is a major complication of cancer chemotherapy, or a result of multiresistant organisms spreading worldwide.

“The fund will help us attract bright young medical researchers here through scholarships and fellowships, and build further capacity in this important work.”

The Charles Farthing Memorial Fund has met with a positive response from donors so far, but Chambers says there is still a lot more to be achieved.

“We are encouraging people to support this work in any way that they are able, either through one-off or recurring donations to the fund. Even the most modest gifts can make a real difference when made collectively and over time.”

Donations can be made online at secure-www.otago.ac.nz/alumni/donations or by completing the form on the facing page.

For further information, please email development@otago.ac.nz



Janina Zimmermann (left) and Diana Dobbison.

New faces in alumni relations

The Development and Alumni Relations Office has undergone a few changes over the last months.

New Alumni Engagement Manager, Diana Dobbison, is a proud member of Otago’s alumni community along with many of her family and friends. She completed her degree in commerce during the 1980s and has spent most of her working life moving between government and the not-for-profit sectors, mainly in Wellington.

Over this time Diana has gained a wealth of experience in senior management roles involving fundraising, communications and marketing across a range of industry sectors including tourism, health, international aid, community and local government, environment and business information.

Diana strongly believes in building lifelong relationships between the University and alumni where everyone benefits.

“These relationships are invaluable – helping alumni build their networks and career opportunities, while enhancing the University’s efforts in student recruitment, reputation building, development and advocacy.”

Most recent arrival Janina Zimmermann, who hails from north Germany, is our Alumni Relations Officer – Events, covering for a staff member on parental leave.

Janina is responsible for organising alumni-related events in Dunedin, as well as other centres throughout New Zealand and around the world. In addition, Janina supports the development of existing and new alumni network groups.

Diana and Janina are committed to the ongoing development of a highly professional and engaged network of alumni and friends for the University of Otago, across a range of activities, working closely with the University’s divisions and departments to provide advice and support for engaging more effectively with their alumni.

Diana and Janina can be contacted through the Alumni and Friends website otago.ac.nz/alumni

... the architect's

Perched high above the Archway – once the formal entrance to the University of Otago – is a series of grotesque carvings that has fascinated generations of students as they have passed through these gates.

Prominent early 20th century architect Edmund Anscombe – the University's architect from around 1909 to 1929 – designed the Archway to link the School of Mines (now home to the University's International office) and the Students' Union (incorporating Allen Hall and now occupied by Theatre Studies). During these years he made a substantial impact on the University's environment, with other buildings including the Oliver Wing of the Clocktower Building and Marama Hall, as well as the Home Science, Lindo Ferguson and Zoology Buildings.

Designing the Archway and surrounding buildings, Anscombe remained faithful to the Gothic revival style of Maxwell Bury's original Clocktower. He was also reputed to demonstrate a playful streak in his work.

Whether it was a manifestation of this playful streak or the Gothic pre-occupation with gargoyles and grotesques, the architect's plans, signed-off on 1 October 1912 by Anscombe's then-partner Leslie Coombs, clearly show a series of eight small and two larger carvings above the south side of the arch.

These are grotesques, not gargoyles. Gargoyles function as waterspouts to divert rainwater away from buildings. Grotesques – although similar in appearance – perform a more decorative function, fanciful animal and human forms often distorted into the ugly and absurd.

Representing the various branches of learning, these grotesques include a geologist or miner with a pick, a chemist with a retort, a lawyer with judicial wig and scales of justice, and another with a Caduceus (a winged staff entwined with snakes – a symbol of commerce, but commonly confused with the rod of Asclepius, a symbol of medicine). Others bear more generic representations of learning – a book, a scroll, a cogwheel – and yet another (presumably a dentist) appears to be extracting his own tooth with a pair of pliers.

The two larger caricatures of scholars sit immediately above the arch. One, holding a globe and pointing to New Zealand, is accompanied by an owl sitting on a lamp (symbols of wisdom); and the other, holding a slate showing a mathematical sum, is accompanied by a skull atop a pile of books (symbols of mortality and learning).*

It has been suggested (but not confirmed) that these were modelled on academic staff of the time ...

While Fletcher Brothers won the tender to construct the Archway with a price of £10,292, the stonemason who carved the grotesques is unknown.

KAREN HOGG

*Thanks to Gregor Macaulay.



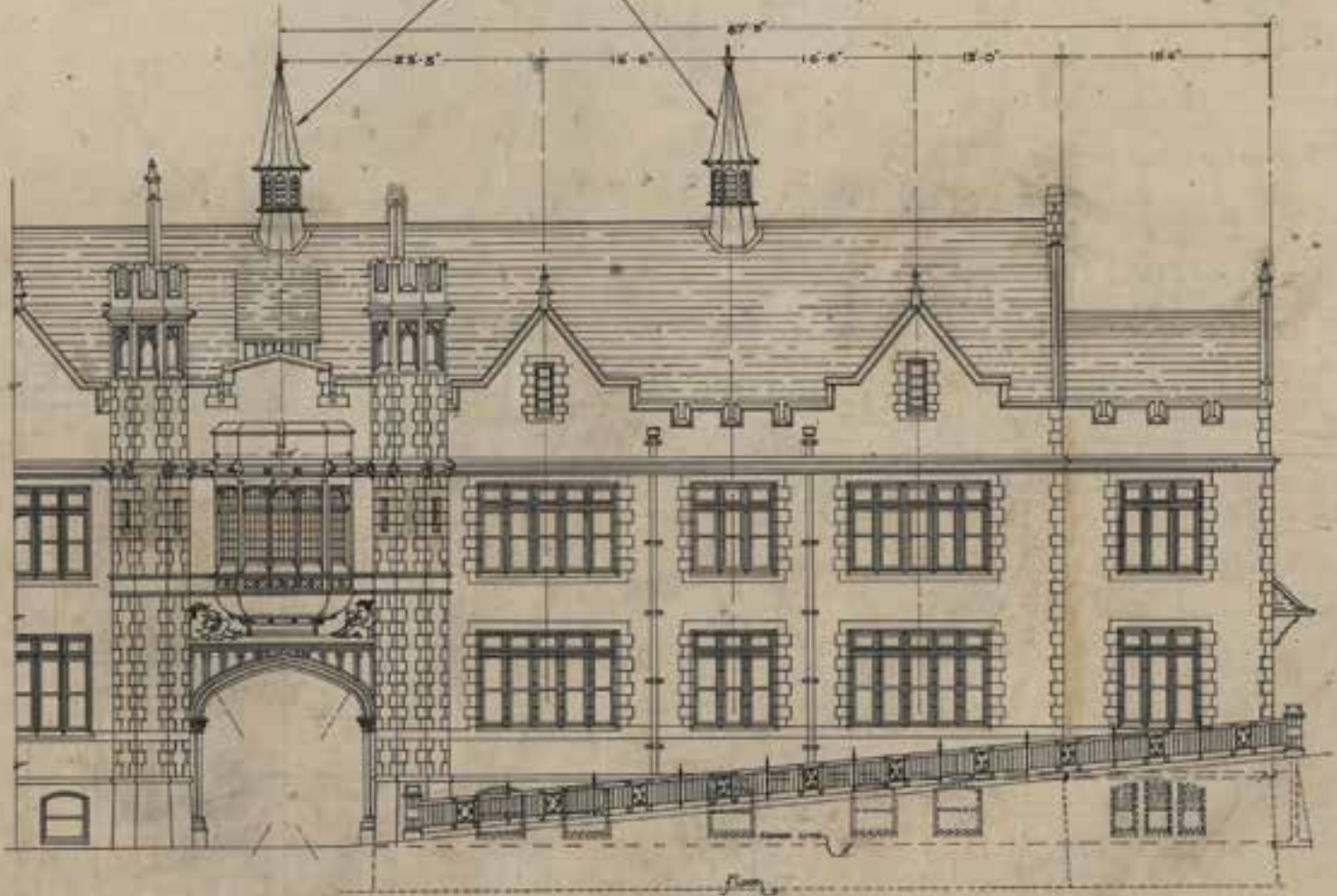
folly?

STUDENTS' BUILDING · ADDITION ·
UNIVERSITY ·

Scale to 1 inch.



Students' Building Addition, Otago University,
Dunedin, Sheet no. 7, Dalziel Architects records,
Hocken Collections Uare Taoka o Hākena
MS-2758/1071



· UNION · ST · ELEVATION ·

I'mpossible

ONLY
OTAGO

POSTGRADUATE

