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YEARS

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UNIVERSITY
of
OTAGO

Te Whare Wānanga o Ōtāgo
NEW ZEALAND

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I am a firm believer that travel broadens the mind. In the course of my adult life, I have been privileged to visit many countries around the world. I have also had the pleasure of hosting a large number of international visitors to New Zealand.

IN MY EXPERIENCE, when people from different parts of the globe spend time together, they quickly understand that their similarities far outweigh their differences; this new understanding increases tolerance and acceptance and decreases prejudice, bigotry and hatred.

Here at the University of Otago, we are lucky to have a remarkably international community. We have staff and students from more than 100 different countries who work and study in Dunedin, Christchurch, Wellington, Auckland and Invercargill.

The number and mix of international students in New Zealand and Australia is a hot topic at the moment. Many of the top-ranked Australian universities have set a target of 40 per cent international students; some have already reached this target and are continuing to recruit. In New Zealand, many of our universities

currently enrol large numbers of international students and at least one New Zealand university has reached a figure comparable to the target set in Australia. In most cases, where universities in this part of the world have attracted large numbers of international students, there is a heavy reliance on one country, usually China.

There are a number of important reasons why universities want to attract more international students. First and foremost, leading universities are committed to recruiting the best and the brightest students (and staff) no matter where they were born. Second, universities value the diversity that international communities foster; they celebrate not only the cultural richness that internationalisation achieves, but also the breadth of ideas that come from bringing people with different perspectives together. Finally, international students are part of the financial life-blood of New Zealand and Australian universities. Given the current funding environment in both countries, we would not survive without them.

Against this backdrop, Otago has a long-standing policy regarding international student recruitment. Rather than a target, we have a cap. At present, our Council-approved cap is 15 per cent. In other words, international students cannot make up more than 15 per cent of our total student enrolment. Within that 15 per cent cap, no more than 25 per cent of the international students can be drawn from any one country.

At present, American students make up the largest proportion of international students at Otago, followed by students from China, Malaysia, India and the UK. Within this mix there are students from every continent except Antarctica currently studying at Otago.

So why does our approach differ from the others and why is this an approach that other universities are now considering worth emulating?

Recently, a number of questions have been asked about the high proportions of international students at many Australasian universities, both by the media and by the universities themselves. The questions typically focus on the quality of student experience (both educational and more broadly) and the institutional risk of being so financially reliant on international students, especially when that reliance is concentrated on students from just one or two countries.

The rationale for our approach is clear. One of the most important aspects of our special character at Otago is our residential nature. Each year, over 20,000 students come here not only to learn, but also to live. In our view, every student who attends Otago, whether they are from South Auckland or South-East Asia, should have the same opportunities for success while they are here. We know that in order to succeed many international students will quite rightly require different or additional educational and pastoral support. By capping our overall numbers, we know that we can provide the support required for each international student to reach his or her highest potential.

In addition to what is best for our international students, our cap also reflects what we know is best for our domestic students. It is important to us that our domestic students' experiences are enriched by the international students in our community and that the domestic students have the opportunity to demonstrate the kind of manaakitanga that New Zealand is so famous for. We think we have the proportions about right – rather than creating ethnically- or culturally-segregated student communities, all of our students become part of the same vibrant fabric of life at Otago.



I know that Otago's commitment to providing an outstanding experience for both international and domestic students is working. Both groups of students report similarly high levels of satisfaction with their course and wider university experience.

Since I have been Vice-Chancellor, I have supervised postgraduate students from England, Ireland, China, Taiwan, Iran, Japan, Switzerland, Denmark, Germany and the United States alongside my kiwi students who have come from throughout New Zealand. I know that the educational experience of both my international and domestic students has been enhanced by what each has brought to the table. Their view of the world, and mine, is now richer and more tolerant. Clearly, travel really does broaden the mind.

Harlene Hayne

Vice-Chancellor
Professor Harlene Hayne

Kidney collaborations

Kidney research at Otago is contributing towards a better understanding of kidney disease and its impacts, with the prospect of more effective prevention and treatment.

PROFESSOR ROB WALKER:
"I am in the very lucky position of being able to do basic translational science research, but also having a very active clinical research programme."

RENOWNED KIDNEY SPECIALIST

Professor Rob Walker says that the important role of the kidneys in health is commonly underestimated.

Walker recalls how he graduated from the Otago Medical School and became interested in nephrology (the branch of medicine that deals with the physiology and diseases of the kidneys) while working in Christchurch with his mentor, fellow Otago graduate and eminent nephrologist, the late Dr Ross Bailey.

“The underlying physiology and functioning of the kidneys always had me fascinated. They have multiple roles that a lot of people don’t recognise,” Walker says.

“Most people equate kidneys with making urine – and that’s about it. But they basically maintain and regulate the whole body’s internal balance, they control blood pressure and they have a very close working relationship with the heart. So, there is a lot of interactive physiology here: it’s not just one organ – it’s the total impact of kidneys on all other systems.

“And when you start to get kidney impairment and kidney damage, the impact of that again affects the whole individual.”

Walker says that getting to know people over a long period of time and working with them to manage their chronic kidney disease has also been important to him.

“As I say to my students, once someone has got kidney damage and they are on my books, they are on my books for life. So, I get to know them exceptionally well as a person, and their family. I have looked after many people I have known for more than 30 years.”

Walker, who is the Director of the University’s Kidney in Health and Disease Research Network, emphasises that there

are multiple potential causes for kidney disease – and no specific cure.

“We can substantially slow down the progression of chronic kidney disease – and the sooner we identify kidney damage the quicker preventative measures can be in place. However, once you have got kidney damage, at present there is no treatment that makes it reversible and allows the kidney to regenerate.

“We can stop a number of disease processes so they don’t progress and then we can treat kidney failure with dialysis or with a kidney transplant, which is the preferred option if it’s suitable, because you are replacing kidney function with kidney function.”

About one in three New Zealanders are at risk of kidney disease, one in seven have evidence of chronic kidney disease (about half of whom don’t know about it) and about one in 1,500 end up on dialysis. It is not only an obvious risk factor for kidney failure, but also for cardiovascular disease and death.

Walker says kidney damage is silent and only detected by testing the urine for blood and albuminuria (an essential protein called albumin, which properly belongs in the blood, getting into the urine), and by blood tests measuring a reduction in the glomerular filtration rate (the rate at which kidneys filter blood). Elevated blood pressure is also an important marker.

He says that even small increases in albuminuria, reductions in filtration rates and elevated blood pressure increase the risk of kidney failure, heart attack or death.

A key cell that prevents albuminuria and preserves kidney function is the glomerular podocyte and has been the focus of a

breakthrough by an international group of researchers and clinicians, including from the University of Otago.

The six-year project, led from the United Kingdom, also involved researchers from Canada, the United States, Hong Kong and three people from the Dunedin School of Medicine: Walker, Associate Professor John Leader and senior research fellow Dr Jenny Bedford.

“This collaborative project started off from cell cultures and progressed right through to animal studies and human studies,” Walker says.

The researchers noted that the enzyme glycogen synthase kinase 3 (GSK3) in podocyte cells is critically important for their function. The enzyme exists in two “isoforms”, with either able to compensate for the loss of the other.

They found that the genetic loss of both GSK3 isoforms in mice caused death in young mice associated with massive albuminuria and renal failure; if GSK3 was knocked out in mature animals, it also caused kidney disease.

They then studied fruit flies and found that the genetic loss of GSK3 in their primitive version of podocyte cells, which are called nephrocytes, had similar effects on young and mature fruit flies, which showed that GSK3 is likely to have been preserved across evolution as a key cellular regulator.

They next looked at the inhibition of GSK3 activity through drugs, because there is interest in using drugs to inhibit or regulate the activity of GSK3 in the case of diseases such as diabetes, Alzheimer’s disease, bipolar disorders, cardiovascular disease and some cancers. They pointed out that lithium carbonate is the best known of the GSK3 inhibitors and is widely used in clinical practice to treat individuals with bipolar disorders.

Walker explains that this part of the research arose from his long-standing Otago collaboration – going back to the early 1990s on the effects of lithium on the kidneys – with Leader and Bedford, who were interested in how the kidneys transport water and maintain balance.

“Lithium is a mood-stabilising drug that is incredibly effective for people who have bipolar disorders, but the most common side effect is to reduce the kidneys’ ability to concentrate urine. A less common but important downside of long-term lithium therapy is that it does cause slowly-progressive kidney damage.”

Walker says that the Otago research – on rats treated with long-term lithium and kidney biopsies of patients who had been on long-term lithium therapy – showed that lithium-inhibited GSK3 was also associated with loss of podocytes, development of albuminuria and progressive kidney damage.

“By understanding how the podocytes maintain their normal cellular function and then what happens if they get injured we can start to develop more specific therapy that focuses on those changes,” Walker says.

“Unfortunately, a lot of our drugs are fairly broad in their actions – they have good effects and bad effects – so the more we can target our interventions to specific changes, then that certainly helps.

“Also, there are still a lot of things we don’t understand about the progression of chronic kidney disease, yet we know that once we have got kidney injury, people will slowly progress to kidney failure and obviously we want to stop that process.”

The researchers say that one avenue for future research is the possibility of specifically inhibiting one isoform of GSK3, but not the other, to produce the potentially beneficial effects of GSK3 inhibition without the unwanted side effects.

Meanwhile, the researchers say that, while drugs such as lithium that inhibit GSK3 can cause some podocyte injury, the beneficial effects of lithium therapy in controlling mood disorders far outweighs the risks of possible long-term kidney damage.

The research team has reported its findings in the *Nature Communications* journal.

In addition to the ongoing Otago research on the role of lithium in chronic kidney disease, Walker is involved in several other major research projects.

“I am in the very lucky position – what you call a clinician-scientist – of being able to do basic translational science research, but also having a very active clinical research programme.

“From a clinical point of view, there are a number of studies going on. One of them has been looking at dialysis outcomes in the older age group. The New Zealand population is getting older and the number of people reaching end-stage kidney failure, where we need to consider dialysis, is increasing.

“However, dialysis is not an intervention that is simple and easy. It has a big impact on the individual and their family, and it becomes a trade-off between survival versus quality of life.

“So, what we were interested in finding out was what are the things that are important to this older age group when they are making decisions around dialysis and then, once they start dialysis, how those things change, particularly focusing on their quality of life and the impact of dialysis on that quality of life.”

Another significant project is investigating the disproportionately high rates of chronic kidney disease among Pacific people, in the Pacific Islands and in New Zealand.

Walker is jointly supervising research on the prevalence of chronic kidney disease in Samoan people resident in Samoa and New Zealand, and associated risk factors for both groups.

With more than 250 peer-reviewed publications, Walker has established a national and international reputation as a kidney researcher and clinician during his 30 years at Otago. He is also intimately involved in several international nephrology organisations.

IAN DOUGHERTY

1^{IN} 3

NEW ZEALANDERS ARE AT RISK OF KIDNEY DISEASE

1^{IN} 7

HAVE EVIDENCE OF CHRONIC KIDNEY DISEASE

1^{IN} 1,500

ARE ULTIMATELY ON DIALYSIS

“We can substantially slow down the progression of chronic kidney disease... However, once you have got kidney damage, at present there is no treatment that makes it reversible and allows the kidney to regenerate.”

On the money

University of Otago alumna Kendall Flutey is on a mission to help prepare every Kiwi kid for the financial world ahead. A lofty goal? Definitely. But this New Zealand entrepreneur might just have what it takes.

IT MAY COME AS A SURPRISE that tech entrepreneur Kendall Flutey – the 28-year-old recently named Young New Zealander of the Year who is responsible for helping more than 100,000 New Zealand and Australian kids become financially savvy through her innovative online financial education platform Banquer – once struggled to choose a career.

“I was so jealous as my friends would say they wanted to be builders, doctors or sports stars,” says Flutey. “When adults asked me that question or the teacher wanted us to make a poster about what we wanted to be it left me feeling there was something wrong with me.”

But the panic Flutey felt determining her course of study during her late teens transformed into the realisation that there wasn’t yet a name for what she wanted to be – or not one she knew. Tech entrepreneurs were few and far between in Christchurch, the city where she grew up. Fewer still were Māori and women.

“I could never have fathomed this to be my life today and would say most of my high school teachers would agree,” says Flutey.

“I didn’t have the hallmarks of someone who might go on to do something like I have. I feel extremely privileged to be able to set my own course and contribute to the world exactly how I want to. This isn’t something I take for granted and I’m thankful to everyone who has contributed to this being my reality.”

At the heart of the self-proclaimed “reformed accountant’s” mission is to ensure every Kiwi kid understands the rules and expectations of the financial world that lies ahead.

“Financial capability is tied to an individual’s financial well-being and these behaviours develop very early in our lives. If we can play an intentional and positive role in a child’s financial education I believe we’ll see a reduction



KENDALL FLUTEY:
“I’m really grateful that Otago supported my academic growth through allowing me the flexibility to do things a little differently, and remain excited and engaged in learning that I was genuinely passionate about.”



Photos: Graham Warman

in the likelihood of individuals being financially misled, an increase in financial opportunity and at a scale that corresponds to thriving societies. This would lead to greater national economic performance and that, in turn, pays dividends to New Zealand.

“The exciting thing is that money is interwoven with other stresses and pressures in society. By improving a child’s financial capability we alter their financial trajectory that will protect them from various other unfortunate life outcomes. I’m excited by the prospect of an entire generation of wealthy Kiwis – and I use the word ‘wealthy’ to represent more than just money.”

And while the goal seems a lofty one, the early success of Banquer, the business she founded and leads as CEO, suggests it’s closer than you’d think. In less than four years, the app – which teaches primary and intermediate students fundamental financial concepts – is being used by more than 100,000 kids around New Zealand and Australia.

Launched in 2015, Banquer transforms classrooms into a virtual economy where teachers set up a currency and facilitate real-life situations over the course of the school year to enable students to learn about saving and growing money, debt, interest, tax, KiwiSaver and insurance. The programme aligns with the New Zealand curriculum and has been translated into te reo Māori for Kura Kaupapa Māori schools. Next up will be a version for secondary schools and Flutey says the business is also assessing new markets overseas.

Like Flutey herself, the project developed unexpectedly. It started life as a programme for 25 kids, designed to help her 12-year-old brother’s teacher – Micah Hocquard – bring to life a classroom economy project he had launched in the school. The programme relied on printed spreadsheets that Flutey, who had recently upskilled in coding and computer development, working alongside talented web developer and former Otago student Ben Wigley, turned into a series of online tools. From there, the team took Banquer to a start-up weekend and, after establishing

an early partnership with Kiwibank, the goal posts shifted overnight.

“Success is a moving target and I never really feel as though we’ve fully reached that target. I guess that’s what keeps us pushing,” says Flutey.

“We’re an impact-driven business, so hold profit alongside purpose. Inherently, our goals focus on the business succeeding through both of these lenses. I truly believe there is an opportunity in business to derive outcomes that are greater than simply shareholder dividends and we use Banquer as a vehicle to prove this.”

Flutey’s strong altruistic values come from a lifetime of influences. Raised by a solo mother in her formative years, Flutey and her sister learnt the value of money from an early age. But when her stepfather Richard, also an Otago alumnus, came into her life, he “opened her eyes” to another world, introducing her to the world of personal finance and the ability to control her own finances. From him she also learnt the value of education – in all forms – and fondly remembers stealing books from his bookshelf and staying up to ask him questions when he got home late at night. She is still learning about her whakapapa and whānau (her father was Ngāi Tahu) – which she describes as an “incredible journey”.

“Being a woman in tech and, in fact, a relatively young Māori woman in tech is different, yes, but it’s something I’m extremely proud of. I know that I’ve faced challenges others haven’t, but I have it a heck of a lot easier than those who walked before me in similar shoes. All going to plan, if I do my part, those who come after me won’t face as many challenges either. We’re lucky to have solid role models in te ao Māori, and I take a lot from them and how they interact with the business world.

“My culture, my identity and my understanding of what I can offer the world will continue to be an evolving piece for me. But what I am sure of is how important different perspectives in business are and what a treasure embracing that is.”

Flutey, who has a BCom, DipGrad

“The exciting thing is that money is interwoven with other stresses and pressures in society. By improving a child’s financial capability we alter their financial trajectory which will protect them from various other unfortunate life outcomes.”

and Master of Entrepreneurship from Otago, credits her university experiences as vital steps towards Banquer. But as important as the degrees she gained is the love of learning that developed – and the relationship she formed at Otago with fiancé Simon Brown, whom she met in her first year of study.

“My university experience was able to be flexible and supportive,” she says. “In hindsight, I can see now that I had to be responsible for bringing exactly what I wanted to be to life and that my broad interests were the perfect blend of experiences to land me here.

“But, even more so, my Otago education helped ignite a love of learning that I hold onto today. Prior to studying at Otago I felt like I engaged in learning because I had to, not because I wanted to. But during my studies at Otago I was able to learn broadly, at my own pace and on my own terms. As a result, the academic path I took was atypical, but I was able to extend myself rather than needing to follow the norm, or a prescribed timetable. I’m really grateful that Otago supported my academic growth through allowing me the flexibility to do things a little differently, and remain

excited and engaged in learning that I was genuinely passionate about.”

Being named as one of New Zealand’s most influential people at the tender age of 28 may seem a heavy cross to bear – and peaking too early was never on Flutey’s agenda. But she promises there is still more to come.

“It’s quite difficult to articulate how special winning Young New Zealander of the Year was for me – it’s almost unfathomable. By no means was it ever an end point I was aiming for, but an incredibly humbling by-product of my journey so far.

“I don’t think I’ll ever feel satiated from the sense that we’ve done what we were meant to; the problem we’re trying to solve is just too complex. It’s more a matter of the scale of the impact we can have.

“When you create your own businesses you’re somewhat charged with creating your own future too – you don’t have the luxury of a clear career progression by just turning up to work. Right now my future’s very much so tied up with where we want to take Banquer, but what I do know is that there’s always more to learn and different ways to grow. There are also other problems in the world aside from financial illiteracy, and I just hope I continue to invest my time and energy into solving real problems the world is facing.”

AMIE RICHARDSON

eDNA and the monster myth

When Professor Neil Gemmell announced he would use cutting-edge eDNA analysis to search for the Loch Ness “monster”, the world took notice. He has now released his findings...



Photo: Alan Dove

PROFESSOR NEIL GEMMELL:
“Perhaps the most lasting legacy of this adventure will be that millions of people now know about the power of eDNA to understand, monitor and protect our environment.”

OTAGO GENETICIST Professor Neil Gemmell’s expedition to Scotland last year to search for the legendary Loch Ness “monster” captured the attention of global media. This media frenzy was repeated again last month when Gemmell went back to Scotland to announce the findings.

He and an international team of scientists had hoped that by collecting and analysing eDNA (environmental DNA) from the loch, they might be able to finally prove or disprove the monster myth (see *Otago Magazine* issue 47, October 2018).

eDNA is a wonder of modern science, using the detritus of life to identify everything that lives in a particular area – its biodiversity.

“Whenever a creature moves through its environment it leaves behind tiny fragments of DNA – from skin, scales, feathers, fur, faeces and urine,” says Gemmell. “This eDNA can be captured, sequenced and then used to identify the creature by comparing the sequence obtained to large databases of known genetic sequences from hundreds of thousands of different organisms.” It is accurate, efficient, non-invasive and far less time-consuming than traditional monitoring methods.

Last year Gemmell and his team spent two

weeks sampling the water of the loch – around the edges, through the middle and down to depths of more than 200 metres. They collected some 250 samples from Loch Ness and also a number from surrounding lochs that were used as a control.

In what was one of the biggest freshwater eDNA studies undertaken anywhere, the collected DNA was then sequenced and analysed, a process that took many months. And they found a lot.

“There are literally thousands of different species present in Loch Ness. Most of them are so small you can hardly see them, but there are a few that are larger,” he says. Among them they found minnows, salmon, sticklebacks, lamprey and trout. They also found traces of DNA from seals and a host of other mammals, many land-based, such as deer, squirrels and badgers.

But did they find Nessie?

“One of the more outrageous ideas has been that there might be a Jurassic-age reptile, or population of them, in the loch – we didn’t find any evidence of a creature even remotely related to that.” They were also unable to find evidence to support theories that a giant catfish, giant sturgeon or a shark might inhabit Loch Ness.

However, they did find a lot of eel DNA. “It appears eels are very plentiful in Loch Ness. I think a plausible explanation for what some people are seeing in the loch is a large eel.”

This is not a new theory. Gemmell says that as early as 1933 researchers proposed that a giant eel might be the “monster”; divers have claimed seeing eels as thick as their legs; and video footage taken in 2006-7 shows a torpedo-like shape swimming along the surface of the loch.

“I’ve seen the original video and it does look like it could be a large fish, maybe an eel, up to 12 or 13 feet. The record for a European eel is about six feet [1.8 metres] so we are talking about something that is at least twice the size of the longest European eels that we know of, and maybe even bigger.”

As a geneticist, Gemmell studies mutations. And, just as mutations in humans result in natural height variations within populations, he says it is plausible that if the mean size of an eel is three or four feet, occasionally a mutation could result in some that are significantly larger.

“This would be unusual, but not impossible. It is something we could explore in a follow-up project: we could try to look for more evidence in the eel DNA from our samples to see if there is a sequence variation in known growth genes to suggest these creatures might be unusually large.”

Gemmell says while monster enthusiasts may be disappointed with the findings, he is pleased with what the project has achieved.

“We have documented the diversity of Loch Ness to a new level of detail and our methodology captured most of what we already knew was there – so we know it is accurate. However, we haven’t found anything mind-bogglingly unexpected.

“I was always sceptical we would find anything monstrous, but if we could prove there are giant eels in the loch, that would be the ‘a-ha’ moment I think.”

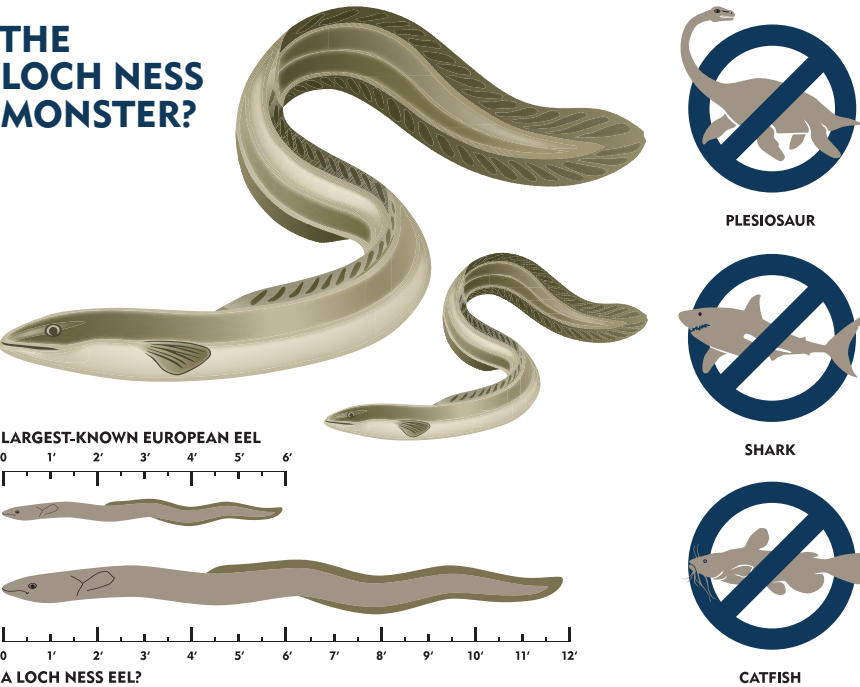
That said, Gemmell has made it obvious from the start that the monster myth was always “the bait on a very large science hook”.

“Perhaps the most lasting legacy of this adventure will be that millions of people now know about the power of eDNA to understand, monitor and protect our environment.”

Gemmell hopes his recent foray to Loch Ness may inspire others to explore the world in this new way.

KAREN HOGG

THE LOCH NESS MONSTER?



A scholar's life

Professor Atholl Anderson receives an Honorary Doctor of Laws degree from Otago Chancellor Dr Royden Somerville QC.

Photo: Sharon Bennett

University of Otago alumnus Professor Atholl Anderson has spent a lifetime researching and writing about the distant past, in particular, Māori and Pacific peoples.

OVER A CAREER spanning more than five decades, Atholl Anderson has been many things – student, researcher, secondary school teacher, professor, award-winning writer – none of which he uses to describe himself.

“I’m a scholar. I do scholarly things and I try to do them well,” he says.

“That includes field and laboratory research, writing and giving lectures from time to time. This work subscribes in nature and method to the notion of scholarship by systematic analysis of propositions about the past.”

The winner of various awards and distinctions, including the Prime Minister’s Award for Literary Achievement in Non-Fiction and a Companion of the New Zealand Order of Merit for services to Archaeology and Anthropology, Anderson has directed numerous archaeological excavations and published prolifically throughout his career. He has made a significant contribution to the ancient past of the Pacific and Indian Ocean islands and to tribal history in southern New Zealand, with books such as *The Welcome of Strangers* (1998) and *Ngāi Tahu: A Migration History*, edited with Te Maire Tau (2008).

He is an Emeritus Professor at the Australian National University, Adjunct Professor of History at the University of Canterbury and Honorary Professor of Anthropology at the University of Otago. He also recently received an Honorary Doctor of Laws degree from Otago. His most recent work, *Tangata Whenua: An Illustrated History*, published in 2014, has been described as a “groundbreaking history” and a remarkable contribution to the knowledge of the Māori world. A collaboration, initially envisaged by

publisher Bridget Williams and developed alongside co-authors Aroha Harris and Judith Binney, the “big book” is the centrepiece of the project, with other versions, including more accessible books for school pupils, in the works.

Born in 1943 in Hawera (South Taranaki), his grandmother’s home, it was a year before Anderson met his father – a Scottish engineering officer in the British Merchant Navy. When his father returned from the war, the family moved to Lower Hutt and then to Dunedin’s Pine Hill – an area soon packed with state houses and young families.

“It was the height of the baby boom and the place was crawling with kids, which was wonderful. I suppose it was a fairly poor area, but if it was we never noticed,” says Anderson.

“I was always a great reader and the library van came to Pine Hill every few weeks. My earliest memory is of Mum trying to persuade me not to take out *The Pilgrim’s Progress* when I was four, which only confirmed that it was worth getting. I could read fairly well by then, but of course the allegory, at least, was beyond me.”

From Dunedin to Nelson for his high school years, Anderson initially completed a BA and MA(Hons) at Canterbury University, but remained uncertain about his choice of career. In fact, he was in his mid-20s when he finally decided on archaeology after a stint of secondary-school teaching. But that choice may have been, at least partially, influenced much earlier.

His mother was of Ngāi Tahu descent, from a Southland family that went back to the mixed-race settlement on Whenua Hou (Codfish Island) in the 1820s, and was a driving force in his early schooling.

After her own early academic ambitions were cut short by family circumstances, she encouraged the pursuit of careers in her children by moving them from the local school to the new Dunedin North Intermediate school to improve their education options, incurring her neighbours’ disapproval for doing so.

In a different way, Anderson says palaeontologist Roy Chapman Andrews, whose tales of fossil hunting in the Gobi Desert, “replete with scorpions in his boots and hordes of galloping Mongolian bandits”, was a formative influence, likely contributing to his “later desire for adventures in the past”.

Once decided on his career, Anderson was quick to take action. In 1970, he joined the University of Otago’s Anthropology Department to begin an MA in Archaeology.

“I was lucky to go to Otago in 1970 when the department was building rapidly and had young, vigorous and ambitious staff, most of them around my age. This was also, coincidentally, the time when the ‘new archaeology’ was replacing older approaches to the discipline around the world. It involved a methodology more suited to the sciences than the humanities with systems theory, quantitative approaches, and an emphasis on economic and ecological models.

“The University of Otago had – and I believe still has – a commitment to scientific method in the broad sense and to excellence in teaching and research which, in my experience, exceeds that of many other universities internationally in which I have worked. I was lucky, and I think Otago graduates in general are lucky, to have been taught there and to do research in its encouraging and satisfying academic ambience.

“Coming from a background in the ‘new geography’ and with longstanding interests in biology, I found this quite congenial and went on to apply some ideas from these areas to interpreting the contents of Māori middens in Palliser Bay that I excavated for my MA thesis.”

That study won him a Commonwealth Scholarship to Cambridge University in the UK, where he was involved in a British Academy project on the prehistoric origins

of agriculture. Shortly after he arrived at Cambridge, his supervisor died and was not replaced for several years, so he was left free to organise his own research on north Scandinavian economic prehistory – spending time in the northern forests and mountains.

On returning to New Zealand, Anderson spent a year at Auckland University before taking a job at Otago. Over the next 15 years, alongside his teaching duties in the growing Anthropology Department, he began his work on the earliest people in New Zealand – moa-hunting groups. This project brought him not only professional recognition, being published as *Prodigious Birds* (1989), the first comprehensive account of the topic, but also re-connected him with his Ngāi Tahu roots.

“Neither my mother nor we kids were brought up in contact with Māori relatives, most of them rather distant, but gradually, in their irresistible way, they gathered us, and especially me, into the Māori fold,” he says.

“From 1987 onward I spent a good deal of time working on evidence for the Ngāi Tahu

claim. This was personally very satisfying, but also a career highlight as it kindled an interest in Māori history and ethnography which I have pursued ever since.”

In 1993, Anderson moved from one professorship at the University of Otago to another at the Australian National University. There, he developed an extensive and long-running project on the human colonisation of oceanic islands, stretching across the Pacific and Indian oceans from the Galapagos and Juan Fernandez islands in the east, to Madagascar and the Seychelles in the west – a project he continues to work on. The research embraces themes of seafaring, migration, colonisation behaviour and ecological change – areas that have been integral to his work from the beginning of his career.

Despite the extensive list of publications, accolades and achievements in his name, Anderson remains exceptionally humble.

“We stand on the shoulders of our intellectual predecessors, as do those who come after us in veritable whakapapa of knowledge,” says Anderson.

“From 1987 onward I spent a good deal of time working on evidence for the Ngāi Tahu claim... it kindled an interest in Māori history and ethnography which I have pursued ever since.”

“The new directions we took are only achievements if other scholars, especially of younger generations, continue to take notice of them and treat them seriously, however critically.

“My early work on optimal foraging theory and economic competition, then on re-thinking the chronology and strategies of human occupation in New Zealand and Polynesia, and advocating more stringent approaches to archaeological radiocarbon dating, on developing a very broad vision of island colonisation pitched at oceanic and larger scales of analysis, and testing it by extensive fieldwork, and of bringing an ethnohistorical approach to Māori traditions and history, would be amongst those.

“But only briefly.”

A scholar to the end, Anderson muses that he feels much younger than his age of 76, but acknowledges that either the will or the means to continue his various research projects is likely to fade sooner rather than later.

“But I’m still keen on sailing and I have fieldwork to do in Rakiura, amongst other things.

“Above all, I have my wife Rosanne, our children and mokopuna, and many friends to enjoy.”

AMIE RICHARDSON



Anderson finds an early waisted axe on the Yaeyama Islands, Japan.

Photos: supplied



Anderson stands beside Hine Kete on Whenua Hou, Foveaux Strait, a commemoration of the Ngai Tahu wives of Pakeha sealers, including his ancestor Whāretutu,



Fresh from further outstanding international rankings this year, Otago’s online MBA is set to launch into China in 2020.

OTAGO INTRODUCED the first Master of Business Administration degree in New Zealand in 1977. The on-campus course was based on the prestigious graduate programme for business executives first awarded at Harvard University in the United States and then adopted by countries around the world.

Other New Zealand institutions followed Otago in introducing their own MBA degrees, but the Otago qualification survives as the only internationally-ranked MBA in New Zealand.

Pro-Vice-Chancellor (Commerce) and Dean of the Otago Business School Professor Robin Gauld says the school’s flagship programme has focused on running a boutique high-quality programme, with small cohorts of students who receive intensive teaching and supervision.

The University’s Director of Executive

Programmes and leader of the MBA programme, Ian Lafferty, explains that they take up to 25 full-time students and up to 20 part-time students each year: about 1,000 students have graduated since 1977.

“We trade off our reputation and we have a long list of prominent individuals who have graduated with an Otago MBA, which helps with our rankings,” Gauld says. High-profile graduates include billionaire businessman and philanthropist Graeme Hart, to whom the University awarded an Honorary Doctor of Commerce degree in 2017.

Fittingly, Otago also introduced New Zealand’s first and, so far, only online MBA in 2015.

“It is costly and often very difficult, and for many people impossible, to take a year or so out of work and move to Dunedin to do a full-time MBA,” Gauld says.

“So, we decided that if quality candidates

want our MBA but can’t come here to get it, we have to take it to them,” Lafferty adds.

Lafferty explains that the online MBA entry requirements and content are the same as for the tried and tested on-campus MBA: the difference is in the content delivery.

Students from throughout New Zealand and around the world attend live lectures, take part in interactive discussions, and join in breakout sessions of small groups in the same fashion as their on-campus counterparts, but via advanced e-learning technology.

This centres on Zoom video-conferencing, which Lafferty describes as “Skype on steroids”. PhD students provide IT support.

“It is not unique, but highly unusual. We do all the teaching real-time online and the students get a good level of interaction with one another and with the teaching staff,” Gauld says. This sharply contrasts with



Photo: Graham Warman

DIRECTOR OF EXECUTIVE PROGRAMMES IAN LAFFERTY:
“The variety of backgrounds is immense and that’s one of the biggest advantages of the programme, because it gives huge learning and networking opportunities for everybody.”

online courses in which individuals study by themselves.

Lafferty says that the online programme is delivered from 7pm to 10pm New Zealand time, two nights a week, to suit New Zealand and many overseas students.

He says that there are about 200 online students this year, mostly Kiwis, including those living overseas who “like to buy the Otago brand”.

Whereas the full-time on-campus course takes about 16 months to complete, the online MBA is a part-time two-and-a-half-year programme during which students juggle work with study and personal lives.

“The online students tend to be older, they have considerably more work experience to draw upon, they are wanting to upskill and take some professional development as much as higher education, and they are largely in full-time employment,” Gauld explains.

The overseas-based Kiwi students who completed the course this year include Alpha Kennedy, who works as an international consultant in Africa and the

Middle East. “The running joke in our cohort was where in the world is Alpha? I think I dialled into lectures from more than 18 countries over the two years. An effective time-zones app was essential.”

“The variety of backgrounds is immense,” Lafferty observes, “and that’s one of the biggest advantages of the programme, because it gives huge learning and networking opportunities for everybody.”

Auckland-based Bette Chen, who completed the course last year, agrees. “The value my classmates brought to the course was enormous: we not only discussed business cases on paper, we discussed live business cases from our work, and we were able to apply what we learned immediately to our work.” Chen now works as a tech company product manager.

The online MBA has quickly established its place in the world as one of the best: rated by the London-based *CEO Magazine* in its global MBA rankings as the fourth best online MBA in 2017 and third in 2018 and 2019; and coming in at 13th this year in the QS World University Rankings

published by the British education and careers advice company, Quacquarelli Symonds. QS gave the Otago online MBA the top score of 100 for class experience.

“It is a phenomenal achievement,” Gauld says, “and something the University of Otago is really proud of. We think it speaks to the quality of the programme and the way we deliver it. And it is terrific for the staff. They are an outstanding group who give unparalleled attention to every student and detail. It is great for them to know they are teaching on and running one of the world’s top-ranked online MBAs.”

While Otago provides the online MBA programme directly to individual students around the world, it is taking a different approach regarding China, partnering with Beacon Education, which works with a number of higher education institutions to provide online education into China.

Lafferty explains that the University was approached by Beacon to provide the content and teaching programme in China on Beacon’s online platform, with Beacon providing the recruitment, marketing, delivery and local support.

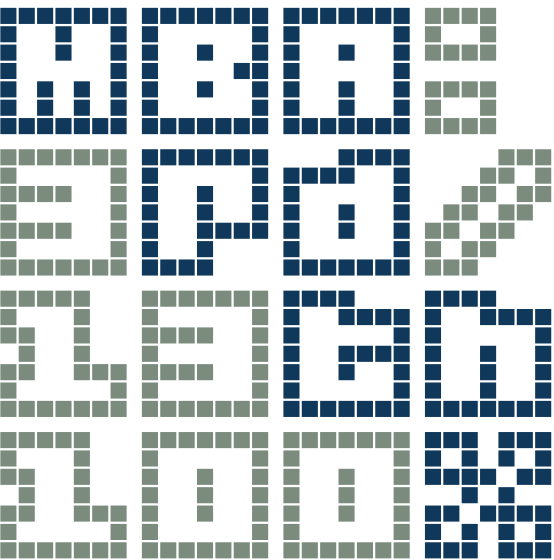
Gauld, who has a PhD in public administration from the University of Hong Kong, says that “China is an enormous domestic market and, to function in China, you need someone who knows that market well and that is where Beacon Education comes in. In China, putting an ad on the back of a bus might not work as well as it does in Auckland.”

Gauld says that Beacon, for its part, liked the nature of Otago’s real-time interactive teaching, which it thinks is particularly suited to the Chinese market.

The online MBA programme is being offered in China next year and will be delivered from 7pm China time (11pm New Zealand time), featuring lecturers in China and Dunedin.

Meanwhile, Gauld and Lafferty are averse to the online degree resting on its laurels: they are coveting the top two *CEO Magazine* global rankings currently held by two Swiss-based online MBA programmes.

IAN DOUGHERTY



Otago’s online MBA was rated 3rd in London-based *CEO Magazine’s* 2018 and 2019 global rankings; and 13th in the latest QS World University Rankings, achieving a top score of 100 for class experience.

At home in the Webster Chair

After years investigating the HIV virus, Professor Miguel Quiñones-Mateu is now turning his attention to emergent viruses that have the potential to cause significant problems in New Zealand.

GROWING UP IN VENEZUELA, Professor Miguel Quiñones-Mateu had always wanted to be a professional baseball player – or maybe a vet if that did not work out.

Today, though, he finds himself a world-leading virologist, holding the Webster Family Chair in Viral Pathogenesis, endowed by the globally-acknowledged influenza expert Professor Robert Webster, an Otago graduate, and his wife Marjorie Webster through the Leading Thinkers Initiative.

Quiñones-Mateu’s father took a pragmatic approach with his son, encouraging him to get university qualifications while he chased his baseball dreams. However, unable to immediately secure a place in vet school he decided studying biology would be a good interim step.

“My idea was to switch from biology to go to vet school, but then I fell in love with science and biology,” he says with a simple shrug of the shoulders.

Even baseball began to take a backseat. Not

long after graduating Quiñones-Mateu was employed by Venezuela’s equivalent of the US National Institutes of Health (NIH), working on HIV, but it soon became apparent that if he wanted to further his career he needed a PhD.

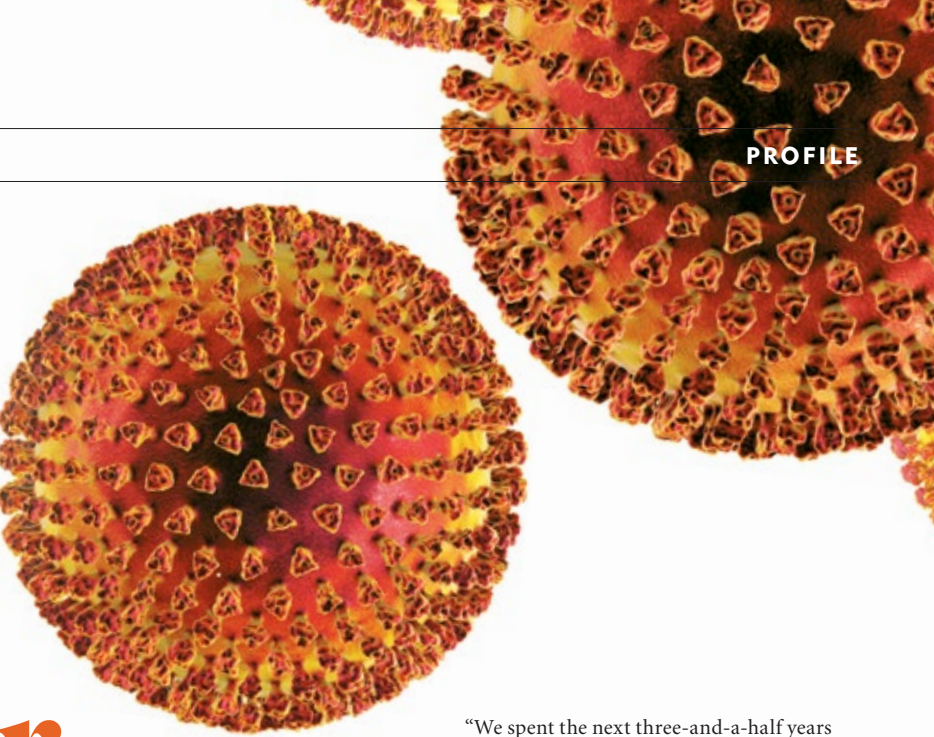
Securing a scholarship, in 1993 he headed off to Madrid to work under Esteban Domingo, one of the fathers of the viral quasispecies concept.

Venezuelan scientists had recently completed the first ever isolation of HIV and Quiñones-Mateu tells the story of how, when he flew to Madrid, he took vials of virus samples with him – in the cabin.

“Can you imagine trying to do that today?”

After completing his PhD he headed to the US to do a postdoc at Case Western Reserve University in Cleveland, Ohio, working with then Assistant Professor Eric Arts who had been given an empty lab to develop.

“That was the best time of my scientific life. We had to set up the lab from scratch and try to decide what we were going to do next.



“We spent the next three-and-a-half years building up the lab, working on different HIV projects before I opened my own lab at the Cleveland Clinic.”

Although he had planned to return to Venezuela, the uncertain political situation following the election of Hugo Chavez in 1999 led him to stay longer in the US. It proved to be a wise decision.

Quiñones-Mateu spent six years at the Cleveland Clinic, working on HIV and other viruses such as SARS-CoV and influenza, before moving into the private sector.

“Eric and I had developed a new cloning system which was licensed to a company in Ohio. So I moved to the industry to direct an HIV programme over the next five years.”

A return to Case Western Reserve University followed and during that time he developed a new HIV genotyping method to quantify drug resistance.

“That was licensed and is now being used in the clinical setting, both in the US and Uganda. I’m really proud of that assay because we are really helping patients with it.”

After his daughter Isabel graduated from the University of Michigan in 2018 he and his wife Leonor Hernandez, a paediatric dentist, began looking for new opportunities.

When the Webster Chair came up Quiñones-Mateu applied and they fell in love with Dunedin on their first visit.

“I always wanted to work in a small college town environment – and nothing matches University of Otago and Dunedin: this is just plain beautiful. We have been here for five months and it cannot be better.”

One of the things that excites Quiñones-Mateu about his new role is the opportunity to branch out.

“When I first started working in HIV it was a big thing. The amount of knowledge



PROFESSOR MIGUEL QUIÑONES-MATEU:

"I like the idea of taking the question in the field, going to the lab and finding something that we can apply to solve a problem."

Photo: Graham Warman

HIV HIDE AND SEEK

An NIH grant, secured recently by Professor Miguel Quiñones-Mateu in collaboration with Dr Nicaise Ndembi from the Institute of Human Virology in Nigeria, will allow them to investigate a puzzling HIV phenomenon.

"People that are taking antiretroviral drugs don't always respond for some reason. It is almost like the virus is resistant to those drugs, yet when you look at the virus there are no mutations in the usual regions that could interfere with those drugs.

"This five-year grant will allow us to look at different regions of the HIV genome that you don't typically look at, to see why these patients are failing to respond to treatment. This is extremely important in highly affected countries in sub-Saharan Africa."

There are less than 4,000 people infected with HIV in New Zealand so the scope to do HIV/AIDS research here is limited.

"Having said that, I'm really interested in working on HIV in the Pacific Islands.

"We have the tools. Everything that we are using in Africa, the US, or in Europe right now we can try and use in the Pacific Islands as well. That is something I would love to do."

accumulated in the 1990s and early 2000s was incredible; we were still developing new drugs; HIV-infected people didn't have that many options and, unfortunately, many died," he says.

"Fortunately, now the HIV/AIDS field is not what it used to be. Pretty much everything that could be done has been done. There is no virus that is known better than HIV right now. We have over 35 individual clinical drugs that are really safe and patients are doing really well – at least in developed countries."

Every time he tried to branch out in the US he found two things happened: either more opportunities would come along or people would just push him back towards HIV. Ironically, he and a colleague from Nigeria have just received a five-year grant from the NIH to do further HIV work, but with a focus on Africa where it is still a huge problem [see sidebar].

When Quiñones-Mateu came to New Zealand his desire was to help grow

the virology field here and tackle research that is relevant to the country and in areas where few are working.

"I have decided to focus on emergent viruses: viruses that are not here yet, but could eventually cause problems in this country."

To that end he is focusing on a few arboviruses, in particular severe fever with thrombocytopenia syndrome virus (SFTSV) that was discovered in China in 2009.

"It is transmitted by cattle ticks and has been spreading since it was discovered. It started in China and has now moved to South Korea, Japan and, more recently, Vietnam too.

"It has a case fatality ratio of anything from 15 to 30 per cent, especially with people in their 60s and 70s. So that's not good."

Quiñones-Mateu says the cattle tick that transmits the virus is here in New Zealand.

"Fortunately we don't have the virus, but it could be just a matter of time. All it would take is a couple of tick-infested birds flying here from Asia.

"Currently there is no direct therapy nor a vaccine against it. So I decided to work on this novel virus, not only because it is very interesting from the virological point of view, but to be prepared just in case it comes here."

"There is no virus that is known better than HIV right now. We have over 35 individual clinical drugs that are really safe and patients are doing really well – at least in developed countries."

Other exciting projects are brewing in his laboratory. A few weeks after arriving at Otago he learned that hoiho, or yellow-eyed penguins, are in danger, dying of a mysterious cause.

Theories range from some sort of infection to toxins, however Quiñones-Mateu decided to use his background in metagenomics to study the potential cause for this unusually high mortality.

Using both oral and fecal samples from around a hundred yellow-eyed penguins they have begun examining their microbiome, mycobiome and virome to see if any viral, bacterial and/or fungal infection could be one of the reasons why the birds are dying.

"My research, right from day one, has been what I would call applied or translational investigation. I have nothing against basic research. It's great because it gives us the tools to do what we do. But I like the idea of taking the question in the field, going to the lab and finding something that we can apply to solve a problem," he says.

"That's what we did with HIV. We developed the assay which is used and is helping patients right now."

For Quiñones-Mateu one of the joys of the Webster Chair is the opportunity to work with Professors Webster and Arts on a new method to develop influenza vaccines.

The aim is to create a library of influenza vaccines so that each year, when a new one has to be produced, they can go to the library and grab the components they need.

"It will expedite the development and production of the vaccine." In fact, it will not only help with vaccine production, but also help them understand more about virus evolution and its pathogenesis.

"It is a real honour to work with Professor Webster and to hold a title that is associated with his name."

MARK WRIGHT

Health of the people

Respected epidemiologist Professor Sir David Skegg cites weak leadership and a lack of political will as fundamental problems for public health in New Zealand.

RECENT ATTACKS on PHARMAC, New Zealand’s agency for purchasing medicines, have implied that failure to fund expensive new drugs can explain our unenviable risk of dying from cancer. Each year, nearly 800 New Zealanders die from cancer who would not die if the Australian mortality rates applied here. Research suggests, however, that the main reasons for this difference are delays in diagnosis and commencement of standard treatment such as surgery or radiotherapy. About a hundred of the avoidable deaths from bowel cancer each year reflect the fact that we failed to introduce a screening programme at the same time as Australia, the United Kingdom and several other countries.

Health services in New Zealand are chronically underfunded. This means that patients miss out on treatments that could increase their well-being, but also that hospitals have to care for people with advanced disease that could have been avoided. The Australians have calculated that their screening programme for colorectal cancer will ultimately save billions of dollars of health-care expenditure, as well as protecting thousands of people from the misery of incurable cancer and premature death.

Controlling cancer and most other diseases depends not only on the treatment of people after they become ill, but also on public health programmes to prevent illness. A recent Australian study estimated that about 40 per

cent of their cancer deaths could be prevented by attention to known causal factors, such as cigarette smoking, dietary influences, overweight or obesity, certain infections, sun exposure and alcohol. Dealing with such challenges requires collective action, which is the essence of public health.

Public health is the science and art of preventing disease, prolonging life and promoting health through organised efforts of society. Unfortunately, New Zealand’s performance in this is even less adequate than its treatment services. That was dramatically illustrated by the massive epidemic of *Campylobacter* infection in Havelock North, where 40 per cent of all residents were struck down by a serious bacterial illness due to contamination of drinking water with sheep faeces. A government inquiry pointed to widespread systemic failure among water suppliers, but also to “a complete failure of leadership and stewardship” by the Ministry of Health.

Lack of leadership is undoubtedly one of the chief reasons for the frailty of our efforts to prevent disease and promote health. While there are capable individuals in the ministry, there is no critical mass of public health experts. Neither has New Zealand followed the example of other countries by setting up a dedicated agency for public health.

A more fundamental problem is a lack of political will. Many of the factors that damage

health are tied up with commercial interests and our politicians have shown a remarkable reluctance to challenge those interests. Let me give two examples.

In 2010 the Law Commission published a landmark report on the regulatory framework for the sale and supply of liquor. Sir Geoffrey Palmer and his colleagues reviewed the enormous harm that excessive alcohol consumption inflicts on families, communities and health in this country. After analysing the evidence and consulting widely, they recommended a range of actions that would minimise the damage. These included increasing the price of cheap alcohol, regulating promotions that encourage consumption, restoring the purchase age to 20 years and cutting back the hours licensed premises are open. In response, the National-led government introduced an Alcohol Reform Bill, but this failed to address most of what the Law Commission had described as the “key elements” of their proposals.

While that bill was being debated, Labour Party members of the select committee wrote a minority report in which they expressed “major reservations about the bill’s failure to address key issues”. They lambasted the government for merely tinkering with the situation, because “so much of the evidence and so many of the recommendations have been ignored”. Yet now that we have a Labour-led government, Cabinet ministers have rejected calls for legislative action,

“Public health is the science and art of preventing disease, prolonging life and promoting health through organised efforts of society. Unfortunately, New Zealand’s performance in this is even less adequate than its treatment services.”

assuring the public that “many of the Law Commission’s recommendations have already been implemented”.

Survey evidence shows that the majority of New Zealanders are in favour of the measures proposed by the Law Commission. It is puzzling why a government with a prime commitment to well-being could shrink from dealing with one of the most obvious and remediable challenges to the well-being of its citizens.

Preventing suicides is a key aim of this government and experts at the University of Otago, Christchurch estimate that alcohol is a significant factor in causing about a third of all completed suicides. So, having established an Inquiry into Mental Health and Addiction, why did the government set aside its firm recommendation about alcohol regulation?

A second example of insufficient action relates to our epidemic of obesity. About two-thirds of adults and one-third of children are now either overweight or obese. The Ministry of Health estimates that obesity has already overtaken smoking as a cause of health loss, with cardiovascular disease and type 2 diabetes being the most prominent consequences. The proportion of New Zealanders who are obese has trebled since the late 1970s. Despite the tendency of some people to blame and stigmatise the individuals involved, this is not due to a sudden decline in moral fibre or self-control. It must reflect changes in our social environment and lifestyle, which impact particularly on those who are genetically predisposed.

Many other nations are facing a similar problem. Among 35 OECD countries, however, only the United States had a higher prevalence of obesity in men, while New Zealand women came third after the United States and Mexico. What is disappointing is the lack of a concerted programme to improve the situation, even though our health leaders know they are facing a huge burden of diabetes and other problems. There is no simple solution, and a multipronged approach to promoting sound nutrition and physical activity is required.

One important risk factor is a high consumption of sugary drinks. International studies have identified several different strategies that can reduce such consumption. Over 30 countries have introduced some sort of tax on sugary drinks and a systematic



PROFESSOR SIR DAVID SKEGG: “Politicians and their officials will give more priority to health when an informed public demands this...”

review from the University of Otago, Wellington provides encouraging evidence of reductions in purchasing and intake. A so-called sugar tax can achieve more than just a decline in purchasing. The Department of Health in England reports that its sugar levy has already led to half of all drinks in its scope being reformulated to avoid the levy – the equivalent of removing 45 million kilograms of sugar each year.

Whereas a Conservative government in Britain saw the case for such a measure, New Zealand politicians of both major parties have continually run for cover. It must be music to the ears of food manufacturers and retailers, to hear ministers talking vaguely about consultation and voluntary codes – strategies that public health professionals know to be ineffectual.

In a book published earlier this year, *The Health of the People* (Bridget Williams Books), I tried to dissect reasons for the weakness of our public health function and to recommend possible solutions. Politicians and their officials will give more priority to health when an informed public demands this – as is beginning to happen in relation to environmental degradation and climate change. New Zealand universities, including Otago, have public health experts who are committed to producing sound evidence and raising awareness. This gives me hope for the future.

SIR DAVID SKEGG
Emeritus Professor
Department of Preventive and Social Medicine



Moving forward



Photos: Alan Dove

The UMove community outreach programme provides valuable hands-on experience for physiotherapy students and is making a real difference to participants' everyday lives.

IT'S MID-AFTERNOON. There's a buzz about the second-floor gym in the School of Physiotherapy building as a group of students get equipment ready.

But it's not for their own use. These students are getting valuable early exposure to clinical practice with hands-on teaching, while also providing an important community outreach via UMove – a programme started in 2013 under the guidance of the school's Dean, Professor Leigh Hale, and former neuro-rehabilitation lecturer Dr Cath Smith.

"In neuro-rehab you are teaching students how to rehabilitate and support people affected by a neurological condition like stroke, traumatic brain injury, Parkinson's or multiple sclerosis," explains Hale.

"Physio is traditionally taught using lectures and practical labs where students learn the techniques of physiotherapy. Students can practise massage or spinal mobilisations on each other, but it's hard for students to mimic someone who has had a stroke and pretend to practise working with each other. Unless they know or had experience with someone with a neuro condition, it is difficult to teach techniques for something they don't understand."

Hale says they were also aware many in the community needed more rehabilitation and exercise to maintain their health and wellness.

"For the community, UMove is a place where they can be confident the people delivering the exercises know what to do given their conditions. But it also means students can work with people with real life conditions and hear their stories."

Students usually work in pairs, with each pair assigned one of the four people attending the one-hour session – all supervised by qualified staff. More recently, peer learning has been added by getting third-year students to help second-years who are fresh out of their introductory year of health sciences.

"Students love it because a lot of the health professional courses only see patients further along the track in their training, whereas our students start at the beginning of their second year," says Hale.

UMove has now been extended beyond just neurological conditions to include a range of long-term conditions such as osteoarthritis, chronic pain, obesity, asthma and diabetes. Often people have several issues or co-morbidities, meaning they are not only recovering from stroke, but they might have an arthritic knee and a painful shoulder that also need to be taken into account when exercising.

STUDENT PERSPECTIVES

There is plenty of enthusiasm for UMove from the students involved, such as third-year student Shontal Norton.

"When I was in second year it was really, really good because it is the first contact you get with patients, so it's really nice to get straight in and hands on," she says.

"Because you see them once a week for three weeks in a row you get to know them quite well – what their strengths are and how far you can push them and what they need. You chat with them and find out about their lives. Creating a good rapport with patients is really satisfying."

Facing top: Second-year student Brooke Clark works with Bob Russell.

Facing bottom: Doreen Gilligan and physio student Tim Lovett.

Fellow third-year student Brianna O'Donoghue says when she began as a second-year UMove provided a nice low-stress environment to get used to being around patients.

"You've got information from other people about what they've done with the patient, so you have that to fall back on and you've got supervision as well. It was a good way to get used to handling patients and getting used to treatment techniques."

Second-year student Brooke Clark has had her turn being thrown in the deep end this year, but has found the mentoring they get from third-years really helpful.

"Obviously I had never done it before – I didn't know what was happening. Brianna was my third-year and she was really good. It was really helpful watching her interact with the patients because then I got an idea of what I was supposed to do."

For her part, Brianna confesses to being a bit mean to Brooke. "I could tell they were in exactly the same position as we were in second year – super scared to even touch the patients. I made her do treatment techniques and things, but that's how I like to learn."

As an aside, some participants have even been known to offer tutors a bit of advice on which students are doing well and which ones might need a bit of extra help.

Tim Lovett, a third-year student, says he has enjoyed learning to develop a connection with patients.

"They are comfortable coming here. They know what you're here to do and they even guide us through it at the start," he says.

"Interacting with someone as a patient is a lot different than talking to just someone on the street. They give you a lot of trust right away just because you are wearing the shirt."

The whole experience has also widened his understanding of how physiotherapy can be used.

"There are lots of neurological conditions I'd never heard of. It's cool to learn about them and see how much we can help."

PARTICIPANT PERSPECTIVES

Since UMove began there have been the remarkable success stories, such as someone who'd had a mini-stroke going on to run a marathon, but for most it is about everyday challenges.

Bob Russell, who had a severe stroke in 2011, has been coming to UMove for the last four years. His mobility has been hit hard, but he can now walk about 20 metres with a stick and he is determined to one day do without it – with the help of his students.

"They push me along and there's a bit of competition where I compete against myself to walk a bit further.

"The students are all pretty good. Some have different ideas, which is helpful, because you get different things to do. Some of it hurts, some of it doesn't," Bob adds with a grin.

Working with families is also an important component and Bob's wife Bridgitte is full of praise for UMove.

"Without this place I don't know where we would be. It's amazing. Everyone's so gentle and it wouldn't matter if he only walks one step or 25 steps it's just the same – they're really encouraging and really good."

Doreen and Charlie Gilligan are more recent arrivals, having started at UMove this year.

Charlie is dealing with the challenges of macular degeneration while Doreen is looking to improve her mobility and balance.

"I was very bad on my balance when I first arrived and they put me on the sponges between the parallel bars and that helped considerably. Over a period of weeks I got better."

This improvement has translated into making everyday life easier for Doreen.

"I'm not using a walking stick as much at home and I'm getting around much better."

Getting to see patients make progress in this way has brought a shift in focus for many students says Hale.

"The New Zealand public are exposed to physiotherapy in terms of sports and ACC-type injuries because that's what gets funded. But, in fact, physiotherapy works in the DHBs, in all the wards and intensive care units, and works with people with long-term conditions, so UMove has been great to show this is another area in which they can also work."

MARK WRIGHT

Avant-garde archaeology

The application of cutting-edge technology is revolutionising what archaeology can tell us about the past.

PROFESSOR RICHARD WALTER and Dr Karen Greig (Archaeology) share an interest in past interactions between people, animals and their environment. Applying the latest scientific techniques in pursuit of this interest, they are helping to take archaeology into the 21st century.

“We have a range of different projects using emerging technologies that are producing answers to questions that have been intractable using traditional methods,” Greig says, “but also raise the potential to ask new questions that we haven’t even thought of yet.”

She says that, in New Zealand, one of the big questions is understanding the interactions between early Māori communities and their ecosystems, including the question of moa extinction.

Walter and Greig say that the flightless birds, which were by far the most important land-based animal resource, were hunted to extinction relatively rapidly: within about 100 years of Polynesians settling in New Zealand. But, although the timing and general nature of the activities that led to the loss of moa have been broadly understood using traditional research tools, little was previously known of the process itself: how the birds were hunted, how this influenced their viability and how their decline over time affected the people who had come to rely on them.

Some of the new information comes from the application of bulk bone meta-barcoding. By applying this and also ancient DNA technology to midden remains from early sites, they have been able to build more in-depth pictures of the variety of targeted species.

“When we identify bones using conventional methods, we look at different distinguishing characteristics on the bones that help us to identify what they are,” Walter

explains. “Bulk bone meta-barcoding involves taking all the little fragments of bones that have no diagnostic characteristics that we can see, grinding them up to a fine powder and applying molecular genetic methods to identify what animals were present.”

Further fresh information derives from the application of scientific techniques – not to moa bones, but to moa eggshells. These include shells Walter and his late colleague, Chris Jacomb, sourced from a large stone-lined oven at the Wairau Bar in Marlborough, one of the oldest archaeological sites in New Zealand, dating back to around 1300.

Walter and Greig explain that radiocarbon dating and ancient DNA analysis of the eggshell provides evidence that this represents a single event: a massive community feast.

“That is really interesting for understanding human behaviour and the process of moa extinction,” Greig says. “Other projects using moa eggshell and moa bones provide different insights into the processes of moa hunting and extinction.”

One project is using stable isotope analysis, which measures variations in the atomic makeup of various chemical elements in moa eggshell and bones. Walter explains that this tells them from what sort of environment the remains in the oven came and, therefore, how far away the moa were hunted and the eggs collected.

“If we can get sites that are from different time periods, we may also be able to look at how hunting ranges changed through time. Were people first hunting in the immediate vicinity, then going further and further afield?”

He says that, by examining the micro-structure of the eggshells using scanning electron microscopy, their team can also

determine the incubation stage at which eggs were taken from nests, the contents consumed and the shells discarded. This, together with similar information from moa bones at the same sites, will indicate whether the taking of eggs and killing of birds occurred concurrently and was a seasonal activity.

“Also, the male moa, not the female, sat on the egg, so we want to know the sex of the moa bone in sites, using ancient DNA. Taking the eggs and killing the incubating males at the same time would be an easy way of sending the birds extinct.”

They have similarly been applying scientific techniques to cockle shells found in the Wairau Bar oven, to shed further light on seasonal harvesting patterns.

“It’s extraordinary,” Walter says, “but cockles lay down a microscopic layer of shell on every tide which varies in thickness according to the season. If you cut the shell in half and put it under a scanning electron microscope, you can count the tidal, monthly and seasonal layers.

“We therefore not only know how old the cockles were when they went into the oven, but we can also match up the lines on the cockles to know what time of year they were collected.

“We know that this oven was probably dug between December and February and, if people were eating the cockles in December, that means they were hunting moa and gathering eggs at that time too.”

Some of the new techniques have been applied to major excavations such as one in which Walter and Greig have been intimately involved at Kahukura in the southern Catlins, from where tens of thousands of bits and pieces of shell and bone have been recovered from the rapidly eroding site.

Using high-end scientific techniques has also enabled the archaeologists to measure the impact of 600 years of Māori fishing on snapper in the Hauraki Gulf.

They have again employed stable isotope analysis, this time of tiny snapper otoliths (commonly known as ear bones) recovered from middens and radiocarbon dated, which enables them to tell a story about the individual snapper and the state of the snapper fishery when the fish were caught,



Photos: Alan Dove

PROFESSOR RICHARD WALTER and DR KAREN GREIG: “We have a range of different projects using emerging technologies that are producing answers to questions that have been intractable using traditional methods, but also raise the potential to ask new questions that we haven’t even thought of yet.”

dating back to the 1400s.

Walter explains that growth rings form within these ear bones – similar to growth rings in trees – which enable scientists to determine the age of the fish and its growth rates.

Using isotopic analysis of the ear bones at any point in the snapper’s life cycle, the rings can also provide such information as from which breeding ground in the Hauraki Gulf the snapper came, with each breeding ground giving different environmental signals.

“We can say that the whole snapper population in the gulf has radically changed since 1400,” Walter says. “As the snapper were impacted by fishing, different breeding grounds were affected, so it appears that by 1600 there were fewer breeding grounds than existed in 1400 and today only a few of these remain.”

He says that there is a lot more information that can be extracted from isotopic analysis of the ear bones, including changes in water temperature in the gulf over the past 600 years.

Greig has also used ancient DNA analysis in her investigations into the interactions between people and dogs during the introduction and dispersal of dogs through the Pacific and in New Zealand.

“The distribution of dogs is intimately tied to human expansions,” Greig says, “and results suggest there were at least three different dispersal events, in addition to the introduction of dingoes to Australia.”

“This type of environmental information we are getting through ancient DNA, through chemical analysis and through using scanning electron microscopes is giving us so much insight into human interactions with fauna and environments,” Walter summarises.

The various projects are being undertaken by a research unit within the Archaeology Programme at Otago, Southern Pacific Archaeological Research (SPAR), which carries out research in archaeology and heritage management throughout New Zealand and the tropical Pacific. It comprises co-founder and co-director Walter, co-director Greig, and a core team of research assistants and associates.

Walter and Greig are also quick to acknowledge their many specialist collaborators within the wider University of Otago community – notably in Anatomy, Chemistry, Geography and Zoology – and elsewhere in New Zealand.

They point to international collaborators too, such as the Smithsonian Museum in

Washington DC, which has assisted with the work on micro-structure of moa eggshell; and Curtin University in Perth, which has contributed with ancient DNA bulk bone meta-barcoding.

Walter and Greig emphasise that these are mutually beneficial collaborations, with each partner bringing different expertise and interest to the research, and obtaining different outcomes.

They cite the example of the research on snapper, with archaeologists at Otago (along with a consultant archaeologist in Auckland) providing the historical context to the ear bones ending up in the middens. Scientists in the Chemistry Department at Otago are expert in isotopic analysis and are interested in information about the environment dating back 600 years. And a fisheries scientist at Auckland University of Technology who is providing contemporary ear bone samples is interested in getting base-line information from which to evaluate the current state of the snapper fishery.

The diverse research projects have so far been the subjects of various international conference talks and journal articles.

IAN DOUGHERTY

Shutting down tinnitus

The use of deep brain stimulation to switch off tinnitus – a chronic ringing in the ears – could also provide valuable insights into other neurological and neuropsychiatric conditions such as chronic pain, obesity and addiction.

All share similar abnormalities in the brain network associated with reward, so Professor John Reynolds (Anatomy) and Associate Professor Yiwen Zheng (Pharmacology and Toxicology) are part of a Health Research Council-funded collaboration to understand more.

“My expertise area is neuromodulation – modulating brain circuits – and Professor Dirk de Ridder, the Neurological Foundation Professor of Neurosurgery, has extensive knowledge and ability to transfer this into patients,” explains Reynolds.

“Tinnitus appears to be an abnormality in brain circuitry after something goes wrong with the ears. The brain tries to compensate for the loss of input and creates the tinnitus sound.

“We want to fool the brain into thinking that the tinnitus frequency is not helpful and to shut it down, while the other frequencies around it are good and to amplify them.”

Zheng, an expert in tinnitus, says it is probably under-reported. “Chronic tinnitus affects 10 to 15 per cent of adults and the percentage doubles for people over 60.” It is also more

prevalent in those in noisy occupations and is becoming more common in young people due to increased headphone use.

“The mechanisms are complicated and there is no effective treatment.”

They aim to identify the neurons involved in different parts of the brain and how they interconnect – knowledge which could be used in tackling other conditions involving similar mechanisms.



Targeting tuberculosis

Tuberculosis claimed the lives of 1.6 million people in 2017. To make matters worse, all of the current antimicrobial treatments for tuberculosis show signs of resistance – and some are totally resistant.

Any new development to fight the disease would therefore be huge, but a different approach to drug development is needed to create new, more targeted tuberculosis treatments specific to humans.

Microbiology PhD student Zoe Williams has been collaborating with researchers in China to screen new compounds that have the potential to be developed into drugs that kill the tuberculosis-causing bacterium *Mycobacterium tuberculosis*.

Williams was one of four Otago students to be awarded a national Freemasons university scholarship last year, hers being a postgraduate scholarship. Working in Professor Greg Cook’s Microbiology and Immunology lab, Williams has been documenting the underlying mechanisms that make one particularly promising drug candidate compound (TB47) effective against tuberculosis disease.

“Traditionally, drug development has been based on the fact that the drug works, without necessarily understanding what is happening and why. We now need to understand those mechanisms to get a treatment to market,” Williams explains.

She has been testing TB47 under different conditions and

in combination with other tuberculosis drugs. The new drug is showing good activity against a range of drug-susceptible and drug-resistant *Mycobacterium tuberculosis* strains and, importantly, works in synergy with existing tuberculosis treatment in animal models.

“It’s exciting to be involved in research that potentially could be a game-changer for one of the leading infectious causes of human death worldwide,” she says.



Deep sheep

Facial recognition technology for animals – and for people – is not new, but two University of Otago researchers are hoping to go one leap further and develop software to identify an animal’s parents.

Dr Lech Szymanski (Computer Science) and Dr Michael Lee (Mathematics and Statistics) have received funding from the government’s Science and Technological Innovation Challenge to see if they can use facial image analysis to enable the cost-effective assigning of parentage to livestock, beginning with sheep.

Szymanski explains that he will use what is known as “deep learning”, which is a machine learning technique that teaches computers to learn from being given lots of examples of something.

Working with Beef + Lamb New Zealand Genetics, he will feed a computer many correct matches of facial images of parents and their offspring, and then try to develop a model that will work it out for itself.

Lee says that accurate kinship information is important for genetic improvement and increased profitability; and facial imaging to identify parents would be a valuable tool for farmers to use, to complement existing technologies such as DNA testing.

He envisages something as simple as an automatic camera at

the head of a sheep crush, linked to a computer.

Szymanski says that the technology is potentially applicable to other farmed animals, such as cattle, deer and pigs.

He adds that it is even possible that the software could also be used to help with monitoring of genetic diversity in conservation species breeding programmes.



Seed bank ‘time bombs’

Research on marram grass control has shown the futility of spray-and-walk-away.

Associate Professor Mike Hilton (Geography) explains that he noticed marram grass regrowth at Doughboy Bay on Stewart Island/Rakiura four years after Department of Conservation spraying.

That prompted a joint research project with Associate Professor Janice Lord (Botany), Dr Teresa Konlechner (Melbourne University) and postgraduate students Kathryn McLachlan and Daniel Lim, which has revealed an insidious, previously unknown feature of the exotic invader.

Hilton says that investigations of the age, viability and depth of marram grass seeds buried each year by the build-up of sand in dunes at St Kilda in Dunedin and Mason Bay on Stewart Island have revealed that they can form large, persistent, long-lived seed banks.

Lord explains that the seeds lie dormant in the dark, cold sand until later uncovered as the dunes erode.

She says that seeds buried four metres deep at Mason Bay and at St Kilda – where they were estimated to be at least 21 years old – quickly germinated in the laboratory when exposed to light, warmth and moisture: typically, what happens when they are a few centimetres from the surface.

She adds that seeds recovered from different depths at Mason Bay showed no signs of becoming less viable with age.

Hilton says that the research has major implications for dune restoration programmes in New Zealand and overseas, potentially prolonging them for years to decades of expense and hard work in dealing with the tiny time bombs.

The findings have been published in the *Journal of Coastal Conservation*.



Legal barriers

Significant barriers to accessing legal representation in civil disputes in New Zealand have been highlighted by the University of Otago Legal Issues Centre.

A pilot study by the centre’s director, Dr Bridgette Toy-Cronin, and researcher Kayla Stewart, set out to map the availability of free and low-cost legal services.

Toy-Cronin explains that the study arose from her Otago PhD research on people representing themselves in civil courts.

She notes that many people cannot afford to pay a lawyer several hundred dollars an hour and need to access free and low-cost services, but civil legal aid is restricted, community law centres mainly offer advice, and people are often left with the choice of either abandoning their case or representing themselves.

“We were hoping to create an online, interactive map that people could use to identify what free and low-cost services were available, but we found that it was so limited that it was not worth mapping.”

Following that project, the team, which now includes researcher Louisa Choe, is looking at how lawyers contribute to making justice more accessible, or why they are unable to do so.

“This means examining the ways in which lawyers offer free and low-cost services, the extent to which these services are

offered, as well as facilitators and barriers to providing them,” Toy-Cronin says. “We are starting with pro bono and then looking at forms of low-cost service provision.”

She says that they have surveyed and interviewed members of the legal profession and are now analysing the results.



LOUISA CHOE and DR BRIDGETTE TOY-CRONIN: They are looking at how lawyers contribute to making justice more accessible, or why they are unable to do so.

Better medication for alcoholics

A study by the University of Otago, Christchurch has shown New Zealanders with alcohol use disorders often miss out on specialist medication that targets their addiction.

Lead researcher Dr Ben Beaglehole says his team studied data on the prescription of drugs to 5,000 New Zealanders diagnosed with alcohol addiction by specialist mental health and addiction services in 2014. They found 12.7 per cent of these patients had been prescribed antidepressants and 5.6 percent the antipsychotic drug quetiapine, but only 2.1 per cent were given disulfiram and 0.7 per cent naltrexone, two drugs developed specifically to treat those with alcohol abuse.

Of those with both alcohol use disorder and depression, 27.4 per cent were prescribed antidepressants and 11.2 per cent quetiapine, but only two per cent were given disulfiram and 0.2 per cent naltrexone.

Beaglehole says antidepressants and quetiapine, while useful for anxiety and depression, don’t produce significant benefits for patients with alcohol use disorder, even in the presence of co-morbid depression and anxiety. However, disulfiram and naltrexone specifically target alcohol addiction. Disulfiram induces the serious negative effects of a hangover immediately after the patient drinks any alcohol. Naltrexone works more slowly, reducing the desire to consume alcohol.

The study suggests inadequate and poor targeting of treatments for alcohol use disorder in New Zealand and gives evidence to those involved in prescribing on how to make improvements in this area.

Beaglehole says when patients have signs of both alcoholism and depression, clinicians should focus on the alcohol disorder. “If people stop drinking, mood and anxiety are likely to improve.”



DR BEN BEAGLEHOLE: He says antidepressants and quetiapine, while useful for anxiety and depression, don’t produce significant benefits for patients with alcohol use disorder.

Disorder in the courtroom

A Marsden-funded project led by Otago Vice-Chancellor and Psychology Professor Harlene Hayne seeks better ways for jurors to reach just verdicts based on the evidence presented to them.

In criminal trials, evidence is typically presented by the prosecution and the defence, with witnesses cross-examined by the opposing side. Although a judge ensures the rules of evidence are followed, it is up to the jurors to determine whether the defendant is guilty. However, jurors receive no special training and are often confronted with complex and highly technical information central to their verdict.

The court has developed tools to help juries in their task, three of which will be assessed in this project: judicial directions, expert evidence and question trails.

With expertise in memory and memory development, our focus is on trials in which the primary evidence involves memory, Hayne says.

“In many cases there is limited physical evidence for a crime and jurors must rely on a witness’ account. Sometimes that account might be about an event that took place decades earlier which raises interesting questions about remembering and forgetting.

“Our goal is to develop better processes to help juries evaluate the evidence before them and of using that evidence to reach a

just verdict. Although our initial approach will involve cases that hinge on memory, the techniques we develop will be applicable across the range of evidence that juries often consider.”

Building on their prior work with lawyers and judges in New Zealand, the researchers are hopeful their findings will have immediate practical relevance to the judicial system.



The research team from left: ASSOCIATE PROFESSOR RACHEL ZAJAC, JUDGE MICHAEL CROSBIE, PROFESSOR HARLENE HAYNE, DR JULIEN GROSS and DR WEIWEI ZHANG.

Anorexia’s biological links

University of Otago, Christchurch researchers played a key role in research showing a biological predisposition to anorexia nervosa that affects the function of the brain as well as the metabolic system.

Anorexia Nervosa Genetics Initiative (ANGI) researchers sampled the DNA of almost 17,000 patients and compared this with over 55,000 control cases recruited from 17 countries. The international team included Otago’s Dr Jenny Jordan and Professor Martin Kennedy.

They found eight genetic variants significantly associated with anorexia nervosa, indicating the origins of the disorder to be both metabolic and psychological. The findings showed that the genetic bases of anorexia overlap with traits associated with the ability to metabolise fats and sugars, and body mass index; that they influence physical activity; and that they also overlap with other psychiatric disorders.

Jordan says current treatments for anorexia nervosa are primarily psychological therapies to help patients regain weight and re-establish normal eating.

“The ANGI findings give us a new way of looking at this disease. For example, many people diet, but only a few develop anorexia nervosa. The findings that there are genetic differences relating to metabolism helps make sense of that. It may also help explain

in part why recovery is such a struggle.”

Kennedy hopes that these fundamental genetic insights will point to better ways of preventing the disorder, and better medications that target the underlying biology. “Nobody chooses to succumb to this awful disease, and we need these kinds of new insights to help people survive and move on with their lives.”



DR JENNY JORDAN and PROFESSOR MARTIN KENNEDY: “The findings give us a new way of looking at this disease.”

Over-tourism: or not?

Queenstown features in an international study of how much is too much when it comes to tourism.

University of Otago researchers, Dr Julia Albrecht, Dr Susan Houge Mackenzie and Hannah Parsons (Tourism), comprise one of 15 groups of tourism researchers participating in a global comparative case study of “over-tourism”, each one looking at a popular tourism destination.

Albrecht explains that the aim of the study – by the Swiss-based tourism network, World Tourism Forum Lucerne – is to come up with a set of useful indicators to measure over-tourism and detect early warning signs.

“The idea is to test drive all of the potential indicators and see which ones are particularly suited to assessing and predicting over-tourism,” Albrecht says. “The challenge is to know when you need to kick in with certain tourism and visitor management interventions.”

Houge Mackenzie cites quality-of-life survey results, new government well-being indicators and the frequency of negative community sentiment towards tourism in the media as potential examples of social indicators of over-tourism.

The Otago researchers have reported their Queenstown findings to the forum, which will combine them with the information from the other international participants. The

Otago trio are also separately analysing the Queenstown data for publication.

The Tourism Department at Otago became a member of the World Tourism Forum Lucerne earlier this year. Albrecht notes that only one university tourism department per country is invited to join. “It says that we are very well-respected internationally as a tourism department,” she says.



DR JULIA ALBRECHT AND DR SUSAN HOUGE MACKENZIE: “The challenge is to know when you need to kick in with certain tourism and visitor management interventions.”

Legal faculty

How do we ensure that an individual who has an enduring power of attorney over another person’s welfare or property, promotes the other person’s – and not their own – best interests?

This is one question posed in a major publication, with substantial University of Otago involvement, on the legal position of people who lack the mental capacity to make decisions for themselves.

Mental Capacity Law in New Zealand has been edited by Professor John Dawson (Law) and a former student, Wellington lawyer Iris Reuecamp. They and current or former staff and students – Alison Douglass, Grant Gillett, Mark Henaghan, Brent Hyslop, Kimberley Lawrence, Nicola Peart and Jeanne Snelling – have written most of the contents.

Four contributors are graduates of the specialist Masters of Bioethics and Health Law degree – jointly run by the Bioethics Centre and Faculty of Law – and five have taught in that programme.

Dawson says that the main legislation covering mental capacity is more than 30 years old and this first comprehensive law treatise on the subject in New Zealand is timely.

He says that the book is aimed at judges, lawyers, law students, health professionals and other carers, and will

also be an important resource for the New Zealand Law Commission’s recently announced review of this area of civil law, to commence next year.

The book is published by the global law book company, Thomson Reuters, and was launched at seven full-day conferences around the country during September, at which contributors spoke on their areas of expertise.



PROFESSOR JOHN DAWSON: The book examines the legal position of people who lack the mental capacity to make decisions for themselves.

Assessing disability in Māori

The first national survey focusing exclusively on disability in Māori is being conducted by University of Otago, Wellington researchers, in a three-year \$1.2 million HRC-funded project.

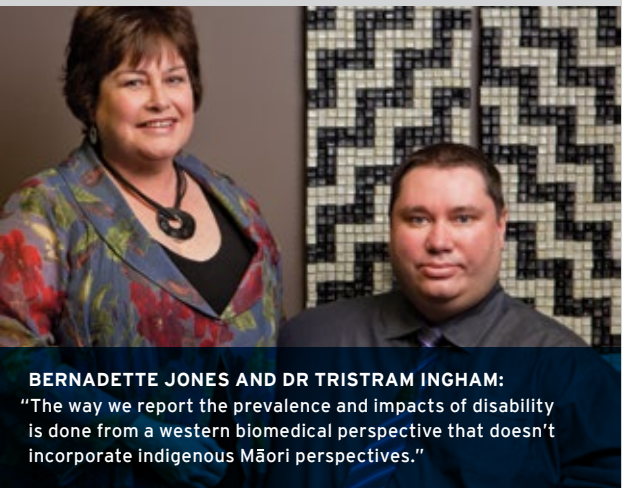
The Te Ao Mārama project is led by research fellow Bernadette Jones and senior research fellow Dr Tristram Ingham, both from the Department of Medicine.

Jones says disability affects around 32 per cent of Māori, compared to 24 per cent of New Zealanders generally, but even this figure may underestimate its true prevalence. “The way we report the prevalence and impacts of disability is done from a western biomedical perspective that doesn’t incorporate indigenous Māori perspectives.”

Ingham notes that the standard disability questions currently used nationally (the Washington Group Set) only consider one aspect of disability (difficulty functioning) and, therefore, do not fully recognise the socio-cultural context in which disablement occurs.

The project is beginning with a series of hui with Tāngata Whaikaha (Māori with a disability) to help researchers develop culturally-appropriate questions for a national survey examining both the prevalence of disability in Māori and its impacts on their health, well-being, social inclusion and finances.

“Te ao Māori has different insights and different ways of



BERNADETTE JONES AND DR TRISTRAM INGHAM: “The way we report the prevalence and impacts of disability is done from a western biomedical perspective that doesn’t incorporate indigenous Māori perspectives.”

seeing the world, but if Māori do not assimilate the identity of having a disability, for instance, then they are at risk of missing out on all those supports and services that go along with having that label,” Jones says.

Their findings will be widely disseminated so the inequities Māori face in the health and disability sectors can be mitigated and policy interventions developed.

Effective giving

New Zealand is ranked the third most generous country in the world (behind Indonesia and Australia), but why are we not more effective as donors? This is something that three Otago researchers have been keen to discover.

Professor Stephen Knowles and Dr Murat Genc (Economics) and Dr Trudy Sullivan (Preventive and Social Medicine) have been researching “effective altruists”.

Knowles says that the “effective altruism movement” argues that people wanting to do the most good should donate to charities fighting poverty in poor countries overseas yet, paradoxically, most people living in wealthy countries prefer to donate to charities helping people in need in their own country.

In New Zealand, for example, less than 10 per cent of charitable donations go to international development charities such as World Vision and Oxfam.

Knowles explains that his team conducted a “discrete choice experiment” via an online survey, which showed that nearly a half of the participants placed more weight on where the money is spent than on the need of the recipient or on the effectiveness of the donation: preferring to support a charity such as the Salvation Army helping people in New Zealand.

And he says that nearly a half of the people surveyed were

unaware or did not believe that donations would achieve more per dollar in developing countries.

Knowles adds that, interestingly, a significant number of people who do place a high weight on effectiveness and do believe that a donation will be more effective overseas, still prefer to donate to a local charity.



DR TRUDY SULLIVAN, PROFESSOR STEPHEN KNOWLES AND DR MURAT GENC: Responses to their survey revealed an emphasis on where money is spent rather than the need of the recipient.

Top performances

The University of Otago has again topped the Tertiary Education Commission’s annual Education Performance Indicators that measure the educational performance of students at New Zealand’s universities.

Otago ranked a clear first for overall student course completion, qualification completion and first-year retention. In the progression from sub-degree to degree-level study measure – an area in which Otago has minimal activity – the University ranked fourth.

Otago’s focus on excellence was reaffirmed in the latest Performance Based Research Fund (PBRF) Quality Evaluation, the results of which were released earlier this year. The assessment reveals a 30 per cent increase in the number of A-rated staff at the University, along with strong increases across the other research grades.

Funding successes

Otago dominated the Health Research Council (HRC) funding round, securing more than \$40 million of the total \$81 million awarded. Otago’s funding comprised one grant of almost \$5 million to support a five-year programme aiming to close smoking disparities, particularly for Māori and Pacific people.

A further 30 grants averaging just over \$1 million each were awarded for projects ranging from climate change and its impact on people’s health through to using DNA to help predict who may suffer heart failure. Funding was secured by researchers from the University’s Dunedin, Christchurch and Wellington campuses.



University of Otago Chancellor Dr Royden Somerville QC lays a stone to mark the opening of the new Faculty of Dentistry building.

Dental facility opened

The Faculty of Dentistry’s new 8,000m² clinical services building was officially opened in June. Described as one of the “highest-tech” dental facilities in the world, it houses hospital-level patient-treatment services including surgical facilities, specialty and teaching clinics, a primary care unit (urgent care and tooth extractions), radiography, paediatric dentistry and orthodontics. The building is equipped with 214 new patient chairs – 61 more than previously – and state-of-the-art technology throughout.

The University has budgeted \$130 million for the new clinical services building, the new 1,800m² atrium linking it to the existing Walsh Building, and the refurbishment of the Walsh Building that is now underway.

Economic impact

The University of Otago’s 2018 Economic Impact Report, released in May, shows that the University contributed more than \$1 billion for the year to the Dunedin economy and estimates the total flow-on economic impact of the University nationally at just over \$2 billion.

The report estimates \$1.163 billion in direct expenditure by the University (including expenditure by students and staff) across all campus locations in 2018, driven by \$1.044 billion in Dunedin.

It is estimates that the University directly and indirectly supported 16,265 jobs in Dunedin, with a further 892 in Christchurch and 830 in Wellington.



2019 Otago Excellence in Teaching Awards recipients, from left: Dr Anne-Marie Jackson – Kaupapa Maori Teaching Award; Dr David McMorran; Nicola Beatson; and Associate Professor Ben Schonthal.

International rankings

The University of Otago ranked 176th in the latest QS World University rankings. This again places Otago in the top one per cent of universities internationally, as one of New Zealand’s top two universities and as one of Australasia’s top 10. QS also released its world rankings for online MBA (Master of Business Administration) degrees, placing the Otago online MBA 13th in the world, up from 34th last year (see pages 20-22).

Teaching awards

2019 Otago Excellence in Teaching Awards have been presented to Dr **Anne-Marie Jackson** – Kaupapa Māori Teaching Award (School of Physical Education, Sport and Exercise Sciences); Dr **David McMorran** (Chemistry); **Nicola Beatson** (Accountancy and Finance); and Associate Professor **Ben Schonthal** (Religion).

University and Victoria University of Wellington to become the Cancer Society Research Collaboration (CSRC), which has been awarded a \$2 million grant by the Cancer Society. They are the Cancer and Chronic Conditions (C3) Research Group, the Health Promotion and Policy Research Unit, the smokefree research group ASPIRE 2025, and the Social and Behavioural Research Unit.

Kākahu welcomed to UOW

An authentic Māori kākahu (cloak) designed for the University of Otago, Wellington (UOW) was two years in the making, but was born five years before that in her imagination and heart, Dean and Head of School Professor Sunny Collings told those at its dedication and naming ceremony in August.

It was a huge honour and very humbling to be receiving the cloak from master weaver Kohai Grace and her iwi Ngāti Toa Rangatira, she said.

“The kākahu will be a constant visual reminder of the increasing importance of te ao Māori in our daily work, and of the privilege and obligations in our collective efforts as staff and students.”



UOW Rautaki Hononga Māori (Māori Strategic Framework project manager) Toa Waaka and master weaver Kohai Grace place the kākahu around the shoulders of the Dean and Head of School, Professor Sunny Collings.

The kākahu was named Te Iti Kahurangi (The Most Treasured) by those who were present, as an act of tikanga Māori.

The kākahu is woven from muka (flax fibre) with a tāniko border honouring the relationship between UOW and mana whenua tribal authorities Ngāti Toa, Te Āti Awa and Ngāti Raukawa. Feathers from kiwi, kererū, tōroa, pūkeko, tūtī, pheasant and kea adorn the top. It will be worn at ceremonial occasions.

Queen’s Birthday Honours

Staff and alumni recognised in the Queen’s Birthday Honours included:

DNZM: Dr **Susan Nicola Bagshaw** CNZM, for services to youth health.

KNZM: Mr **Roger Leighton Hall** CNZM, QSO, for services to theatre.

CNZM: Mrs **Elizabeth Jane Prichard** QSO, for services to women.

ONZM: Dr **Christine Mary Roke**, for services to sexual and reproductive health; Dr **Lynn Christine Sadler**, for services to maternal and perinatal health.

MNZM: Ms **Claire Elizabeth Aitken**, for services to rehabilitative programmes; Mrs **Margaret Gwenneth Cook**, for services to the community; Dr **Fiona May Cram**, for services to Māori health and education; Mrs **Rachael Kathleen Dean**, for services to governance and the community; Ms **Allison Muriel Dobbie**, for services to library and information management and the arts; Dr **Briar Elizabeth Roycroft Gordon**, for services to the law and the State; Mr **Evan Trevor Smith**, for services to the community.

QSM: Mrs **Joanna Margaret Beetham**, for services to the community and the arts; Mr **Mervyn John Cranefield**, for services to Scouting and the community.

DSD: Dr **Peter Rodd Hurly** OStJ, for services to the New Zealand Defence Force and aviation medicine.

Emeritus professors

The University Council has awarded the status of emeritus professor to the following academics: Professor **Judith Bennett** (History, School of Arts); Professor **William Harris** (Politics, School of Social Sciences); Professor **Richard Morgan** (School of Geography); Professor **Vernon Squire** (Deputy Vice-Chancellor, Academic); Professor **Kwok Wing-Lai** (College of Education).

Honorary degrees

The University has conferred Honorary Doctor of Laws degrees on the following worthy recipients: renowned archaeologist Professor **Atholl Anderson**; former New Zealand Prime Minister Sir **Bill English**; international gender justice campaigner **Brigid Inder**; the Honourable Justice **Forrest Miller**; businessman Sir **Julian Smith**; and Otago’s first female medical graduate of Pacific descent Papalii Dr **Viopapa Annandale-Atherton**.

Esteemed publisher **Bridget Williams** received an Honorary Doctor of Literature degree.

Appointments and achievements

Professor **Diana Sarfati**, above right, has been appointed as the interim National Director of Cancer Control, a position created as part of the government’s newly-announced New Zealand Cancer Action Plan. Professor Sarfati is currently head of the Department of Public Health at the University of Otago, Wellington, and



director of the Cancer and Chronic Conditions (C3) research group.

Professor **Mike Morgan** has been appointed Dean of the Faculty of Dentistry. Professor Morgan, who is currently head of the Dental School at the University of Melbourne, will begin his new role early next year.

Professor **Sonja Tiernan** has been appointed to the Eamon Cleary Chair in Irish Studies following the retirement of the inaugural holder of the chair, Professor Peter Kuch.

Professor **Richie Poulton** (Department of Psychology), below, has been awarded the University’s 2019 Distinguished Research Medal which recognises outstanding scholarly achievement. Professor Poulton is director of the internationally-regarded Dunedin Multidisciplinary Health and Development Study.



The **BEATS** (Built Environment and Active Transport to School) research team, led by Associate Professor **Sandra Mandic** (School of Physical Education, Sport and Exercise Sciences), has been awarded the 2019 Research Group Award.

The Rowheath Trust Award and Carl Smith Medal, which recognise outstanding research by early career staff, have been awarded to Dr **Karl Iremonger** (Department of Physiology).

Six rising research stars have also received Early Career Awards for Distinction in Research: Dr **Anna Garden** (Chemistry); Dr **Tim Hore** (Anatomy); Dr **Carolina Loch** (Oral Sciences, Sir John Walsh Research Institute); Dr **Erin Macaulay** (Pathology); Dr **Mei Peng** (Food Science); Dr **John Shaver** (Religion, School of Social Sciences).

Dean of the University of Otago, Christchurch, Professor **David Murdoch** has been made a Fellow of the American Academy of Microbiology, recognising his achievements as an expert and world leader in respiratory infections.

Genetics Otago Director Associate Professor **Julia Horsfield** has been awarded a Fulbright New Zealand Scholarship.

Professor **Miguel Quiñones-Mateu** has been appointed to the Webster Family Chair in Viral Pathogenesis (see pages 23-25), following the retirement of Professor Andrew Mercer who held the position from 2005.

Professor **Craig Roger** has been awarded the Beverly Chair in Physics.

Neurosurgeon Professor **Dirk de Ridder** received the Dean’s Medal at the annual Dunedin School of Medicine and Southern District Health Board’s Health Research Excellence Awards.

Professor **Andrew Geddes** (Law) received the 2019 Critic and

Conscience of Society Award from the Gama Foundation.

Professor **Murray Thomson** (Dentistry) has been awarded the Division of Health Sciences’ Chaffer Medal for distinguished performance in health research.

Seven Otago researchers have secured Emerging Research First Grants: Dr **Julie Bennett**, Dr **Fiona Graham** and Dr **Ayesha Verrall**, (all University of Otago Wellington); Dr **Janice Chew-Harris** and Dr **Gabriella Lindberg** (University of Otago, Christchurch); Dr **Prasath Jayaaran** (School of Physiotherapy); Dr **Trudy Sullivan** (Dunedin School of Medicine).



Professor **Frank Frizelle** (University of Otago, Christchurch), above, has been awarded the Colin McRae Medal by the Royal Australasian College of Surgeons.

Dr **Damian Scarf** (Psychology) received the National Animal Ethics Advisory Committee’s inaugural Aotearoa New Zealand 3Rs Research Award.

Professor **Keith Gordon** (Chemistry) has been named the 2019 Royal Society of Chemistry Australian Lecturer.

The University of Otago mental health and wellbeing initiative **Silverline** was the joint winner of the Youth Health Volunteer Team Award at the Minister of Health Volunteer Awards.

Professors **Sally Brooker** (Chemistry), **Greg Cook** (Microbiology and Immunology), **Neil Gemmell** (Anatomy), **Philippa Howden-Chapman** (Public Health, UOW), **Robert Patman** (Politics), **Jacinta Ruru** (Law) and **Hamish Spencer** (Zoology) have been appointed to the University’s newly-announced Sesquicentennial Distinguished Chairs.

The 2020 University of Otago arts fellows are: **Bridget Reweti**, Frances Hodgkins Fellow; Dr **John Newton**, Robert Burns Fellow; **Kristie Mortimer**, Caroline Plummer Fellow in Community Dance; **Elena de Roo**, Creative NZ University of Otago College of Education Children’s Writer in Residence; **Kenneth Young**, Mozart Fellow.

Behavioural economist Associate Professor **Nathan Berg** has been appointed to the Dunedin City Council Chair of Entrepreneurship.

Obituaries

Emeritus Professor **Alan Horsman** died in July, aged 100. Professor Horsman was the inaugural Donald Collie Professor of English from 1957 until his retirement in 1984. He received an Honorary Doctor of Literature degree from the University in 1994.

Associate Professor **John Birch** who retired in November 2018 after 28 years in the University’s Department of Food Science.

Ms **Kaye Saunders** who gave 30 years’ service to the University, joining the Department of Computer Science in 1989 as departmental secretary.

Mr **Jon Wolken**, who had been a member of the University’s Media Production Unit for six years.

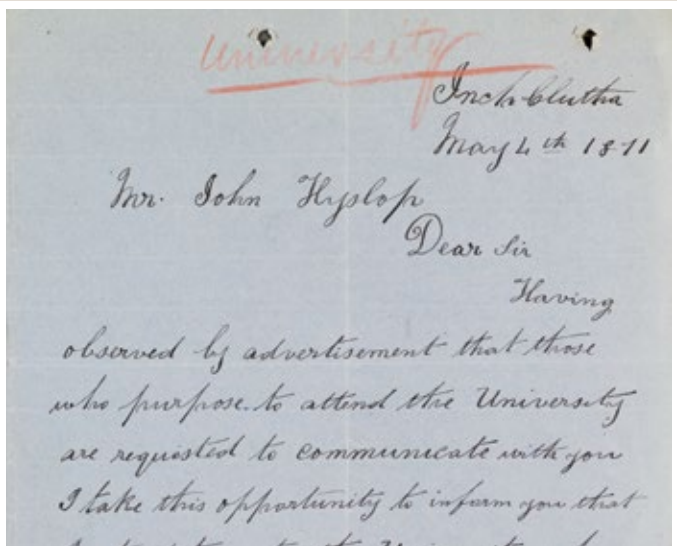
For more Otago news: otago.ac.nz/news

Dear Sir...

Letters requesting information about the fledgling University of Otago provide an insight into the cross-section of colonial society who sought the advantages of higher education.

The University of Otago's founders believed that a university education should be available to any capable person who wanted it. They also believed that this education should be practical, "suited to the circumstances of the colony" and meeting the needs of those who would, in the future, play a prominent role in its affairs. With classes due to commence in July 1871, newspaper advertisements placed in the preceding months urged "intending students and persons desirous of obtaining additional information" about the new university to communicate with the secretary, Mr John Hislop.

Images: Inward letters, 1871, University of Otago Records of Registry and Central Administration, AG-180-27/02. Hocken Collections, Uare Taoka o Hākena, University of Otago.



The responses (now archived in the Hocken Collections) were widely varied and came from around New Zealand. Typical responses included those from Alexander McLeod, of Inch Clutha, who asked which textbooks would be required; if classes in English, Latin, Greek and mathematics would be held daily; and would a matriculation examination be offered. William Hutchison, from Wanganui, requested information about where students may live and would recommendations of their character be required. Also from Wanganui, Alexander Williamson asked about board and lodgings, scholarships, prizes "and any other particulars". Williamson was a young schoolteacher at the time and was to become Otago's first graduate, awarded a Bachelor of Arts in 1874.

Many of Otago's first students were already employed – particularly as teachers – and wished to be able to continue to work as they studied. A. G. Allan, of Green Island, wrote that if classes were to be held in the evenings "have the goodness to enrol me as a student in logic and moral philosophy. If they are not carried out after school hours I shall not be able to attend". Committed to his vocation, Allen further explained that he had been "contemplating the compilation of a handbook of logic for the use of schools on a graduated system the same as Smiths First Latin Book".

High School of Otago teacher James Pope was more ambitious in his "petition" to the University. While expressing an "earnest desire" to become a graduate of the University, he explained that it would be impossible for him to attend lectures as his "professional occupations take up the greater part of his time and simply the whole of his energies". Offering testimonials from colleagues to show that "his attainments are varied and of the highest order", he suggested that he could pass the examinations for the BA degree without any preparation. His petition further suggested that, even if it were possible for him to attend lectures, it would be "very improper for him to do so under the circumstances as he would inevitably be brought into direct competition in the lecture room with some of those who had been his pupils a short time before in the schoolroom".

William H. Hosking, of Ross, enquired about the proposed BA and MB degrees. "Does or will any bye-law [sic] exist for the purpose of admitting to the above examinations legally qualified medical practitioners who have been in active practice in New Zealand for a number of years (say 8)? I believe that if such act of grace be exercised many good men would be induced to present themselves for the above degrees, especially if not required to desert their practices for any great length of time."

Other potential students were very young. A father, explaining his decision not to send his son Charles back to the High School, referred to advertisements in the Witness. He asked why scholarships were

only available to those above 16 years of age and, as his son would not yet be 16, would he not be allowed to "compete"?

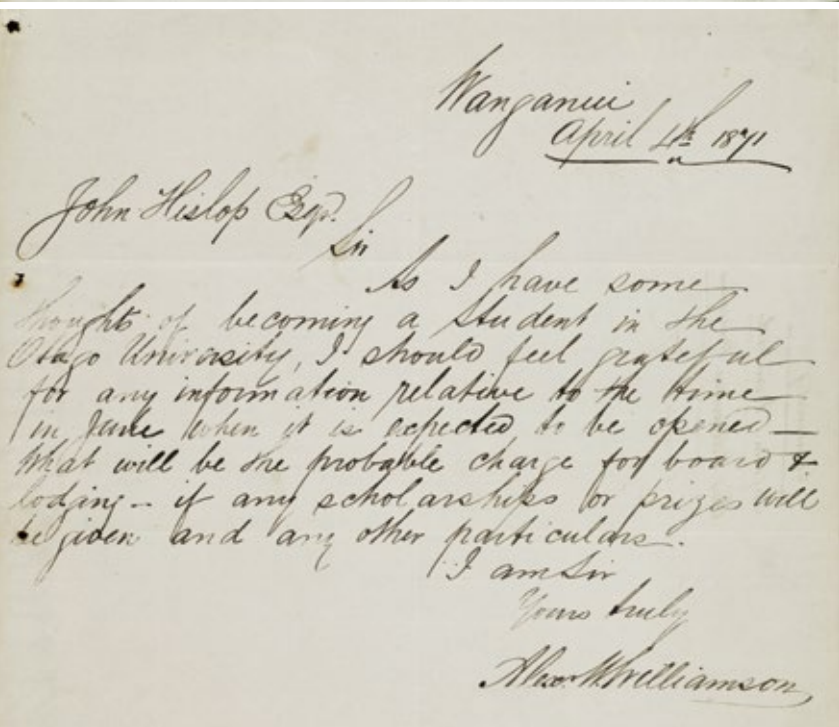
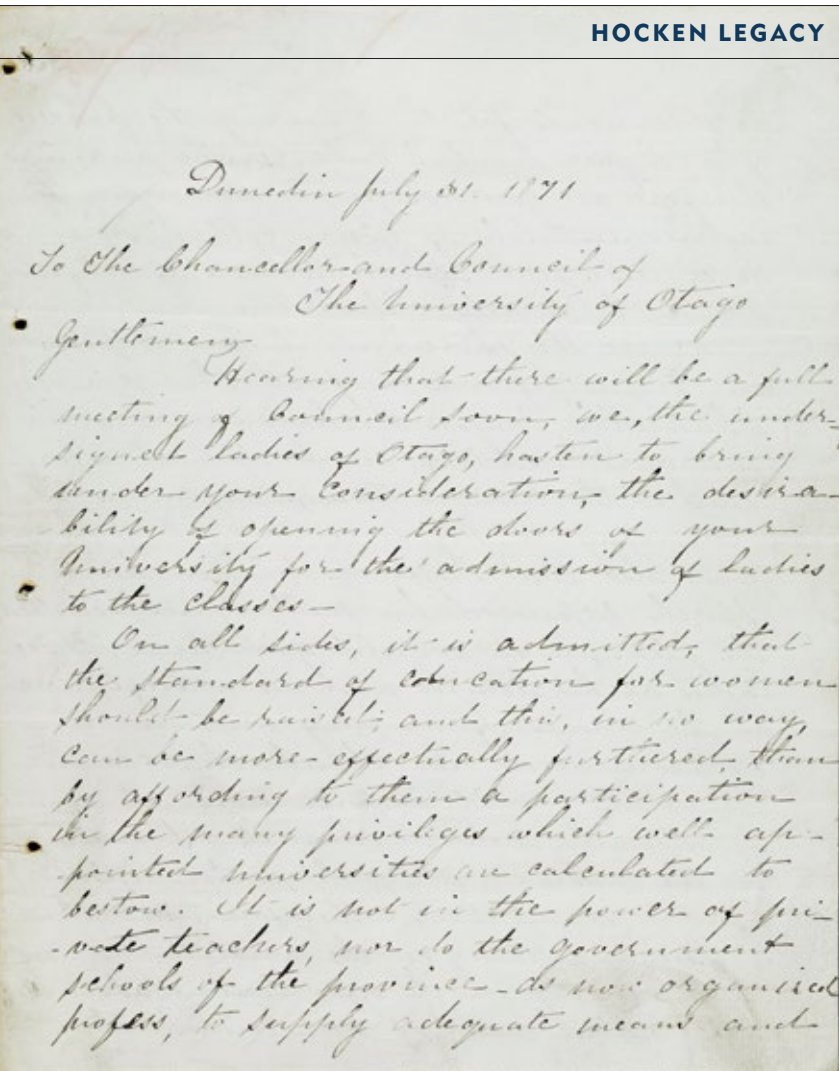
A Kaihiku teacher enquired on behalf of his pupil – "a son of Mr Hay" – who "has a very fair knowledge of geometry, but as he has just commenced the study of Latin his intention, at present, is to take the classes of mathematics and philosophy before those of Latin and Greek; by that means he will be enabled to prepare himself for the latter classes during the vacations in summer". That young man, Peter Hay, became a first-class student and a noted engineer.

Some who had studied overseas also expressed an interest in Otago. G. W. Jordan, of Wellington, who was a graduate of Oxford's Magdalen College, asked under what conditions "ad eundem" degrees in the University of Otago could be conferred on members or graduates of the English universities. And a Mr Tomlinson, who had completed one year at Trinity College, Dublin, wondered how that might shorten his time at Otago; was it possible to obtain a degree at Otago without actual residence; how many examinations per year would it be necessary to attend; and would a declaration upon oath as having passed the Dublin examinations be considered sufficient?

A particularly significant letter signed by 149 women was sent to the Chancellor and Council of the University in August 1871. "We the signed ladies of Otago hasten to bring under your consideration the desirability of opening the doors of your university for the admission of ladies to the classes. On all sides it is admitted that the standard of education for women should be raised and this, in no way, can be more effectively furthered than by affording to them the participation in the many privileges which well appointed universities are calculated to bestow."

Their petition was successful. Although no women enrolled in 1871, at least four (possibly more) applied for admission in 1872.

KAREN HOGG





Photos: Sharron Bennett

Fireworks and music, fun and formality marked the University of Otago 150th celebrations over Queen's Birthday weekend.



Pacific Island's Centre manager
Tofilau Nina Kirifi-Alai.



Former New Zealand Prime Minister Sir
Bill English addressed dinner attendees.



University of Otago Chancellor Dr Royden Somerville QC, Governor-General
Her Excellency the Rt Hon. Dame Patsy Reddy, Vice-Chancellor Professor
Harlene Hayne.



More than 400 people packed the Dunedin
Town Hall for the 150th Anniversary Dinner.



A special Academic Procession and Convocation Ceremony were held on Saturday, 1 June.
The ceremony was an historic event last held to mark the University's centenary.



Professor Sir David Skegg.



Vice-Chancellor Professor Harlene Hayne.



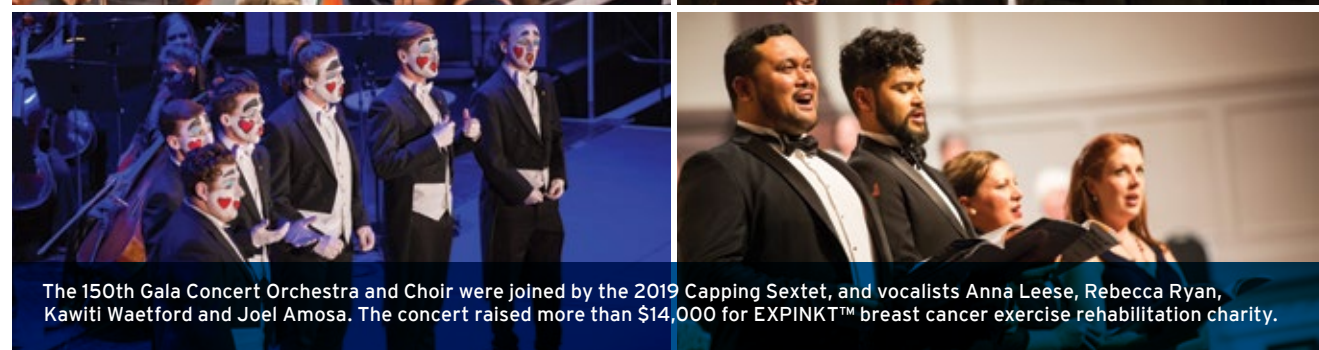
Braving the rain, members of the University community marched
from the Dental School to the Dunedin Town Hall.



The Governor-General Her Excellency
the Rt Hon. Dame Patsy Reddy
addresses the crowd.



Honorary Doctor of Laws degrees were presented to four outstanding alumni:
From right: Brigid Inder, Sir Bill English, Papalii Dr Viopapa Annandale-Atherton
and Professor Atholl Anderson.

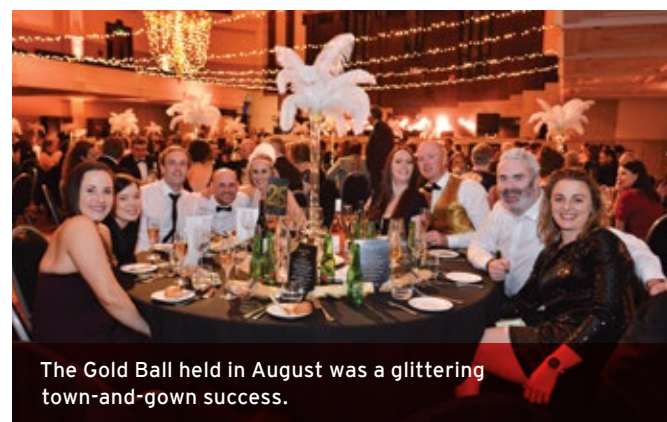


The 150th Gala Concert Orchestra and Choir were joined by the 2019 Capping Sextet, and vocalists Anna Leese, Rebecca Ryan, Kawiti Waetford and Joel Amosa. The concert raised more than \$14,000 for EXPINKT™ breast cancer exercise rehabilitation charity.

The Cameron Shield rugby match between Knox and Selwyn Colleges was played on Monday, 3 June. Selwyn won the shield 38-17.



A large congregation and massed choir attended the 150th celebratory church service on Sunday, 2 June.



The Gold Ball held in August was a glittering town-and-gown success.



Every morning, so far, I'm alive

A memoir

Wendy Parkins

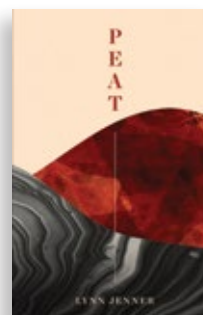
MAY 2019

Imagine living in a world where shaking a stranger's hand, catching a taxi or touching a door handle are fraught with fear and dread...

This memoir charts the author's breakdown after migrating from New Zealand to England: what begins as homesickness and career burn-out develops into depression, contamination phobia and OCD. Increasingly alienated from all the things that previously gave her life meaning and purpose – family, work, nature, literature – the author is forced to

confront a question once posed by Virginia Woolf: "How is one to live in such a world?"

A former English professor, Wendy Parkins honestly explores what it means to belong and feel at home. Describing the gradual process of recovery, she shows that returning to health can be about rediscovering how we came to be who we are, without becoming trapped by our narratives of origin. Like coming home, recovery is never quite what we expect it to be, however much we long for it.



PEAT

Lynn Jenner

JULY 2019

This intriguing "story" features a motorway and a poet.

The motorway is the Kāpiti Expressway built within one kilometre of the author's home between 2013 and 2017. What is its character? Who will be the winners and losers from its construction? What will be its impact on the environment?

The poet is Charles Brasch, who is also an editor,

art collector and philanthropist. Researching his work and life becomes Lynn Jenner's refuge from the pile-driving and concrete, and her hope is he will offer some ways of thinking that will help her understand contemporary events.

This is an unconventional text, that builds – layer upon layer – into an intelligent, fearless and compelling work.

For further information:

Otago University Press
otago.ac.nz/press
university.press@otago.ac.nz

Books by Otago alumni

Alumni: if you have recently published a book please email mag.editor@otago.ac.nz

Sport, Education and Corporatisation: Spaces of Connection, Contestation and Creativity, by Geoffrey Kohe, and Holly Collison, Oxon: Routledge, 2019.

New Zealand Constitution: An Analysis in Terms of Principles, by Bruce Harris, Thomson Reuters, December 2018.

Make It the Same: Poetry in the Age of Global Media, by Jacob Edmond, Columbia University Press, June 2019.

Under Two Flags: The New Zealand Salvation Army's Response to the First World War, edited by Kingsley Sampson, Flag Publications (Wellington), March 2019.

Routledge Handbook of Indigenous Wellbeing, edited by Christopher Fleming and Matthew Manning, Routledge (London), April 2019.

The Road Map to Fertility: A Comprehensive Guide to Fertility for Men and Women, by David Greening, Rockpool Publishing, October 2018.

Ngaio Marsh: A Companion to the Mystery Fiction, by Bruce Harding, McFarland & Co. (North Carolina, USA), June 2019.

Te Folauga - The Journey, edited by Faumuina Faafetai Sopoaga, October 2019.



Together

we can make a difference...
let's start today.

To mark its sesquicentenary, the University has selected a number of special fundraising projects, showcasing a diversity of initiatives across campus that offer benefits to our students, our local community and our wider society. We would be very grateful for your help in supporting these worthy projects – every dollar raised counts.

EXPINKT™ cancer rehabilitation programme

The EXPINKT™ Gym is a unique private gym for cancer survivors of all ages to come together, take comfort and rehabilitate from primary clinical treatment. Clients are given individualised supervised training for six to 12 months before “graduating” to group classes. Significant improvements in fitness, muscular strength and quality of life have been observed. Currently 120 EXPINKT™ members attend the gym each week, some twice a week. Your support will ensure this valuable programme continues to be of service to our community for the next three years.



Music, Theatre and Performing Arts facility

Otago is committed to the performing arts and has begun work on a \$28 million project to construct new and refurbish existing buildings to create a state-of-the-art Music, Theatre and Performing Arts facility with multi-use recording and performance spaces available for use by students and the local community.

Support for this new facility will bring many benefits: it will enable better teaching and student experiences; provide local, national and international opportunities in performance; and enhance the University’s reputation in providing leading music, performance and studio production programmes with purpose-built recording studios.



Marine Studies: replacement research catamaran

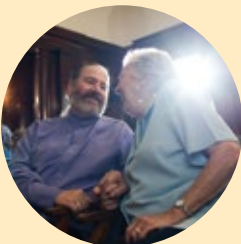
For the past 30 years Otago has operated a research vessel to enable staff and students to take part in scientifically significant research expeditions. However, as research challenges and teaching needs grow, the University hopes to replace its ageing *RV Polaris II* with a new vessel – for measuring the changing ocean, climate and ecosystems at the source, and training the next generation to conserve its heritage and its future. Your support will help us replace our ageing wooden vessel and contribute to the annual operating costs of a new vessel.



Lecturer in Chaplaincy Studies

With growing awareness of mental health, alarming suicide rates, stress and bullying in schools and in the workplace, chaplains are playing an increasingly important role in providing pastoral care and support to people of all faiths faced with such challenges.

Otago is already the only university in New Zealand offering advanced professional programmes in chaplaincy (via distance learning). Our goal is to now raise an endowment fund of \$2 million to support a lecturer position in Chaplaincy Studies, the first in a New Zealand university dedicated to training chaplains and enhancing their professional practice.



Otago University Debating Society

Established in 1878, the Otago University Debating Society (OUDS) is Otago’s oldest society and, in 2018, was named Otago’s Society of the Year. It enjoys national and international success at all levels of debating and adjudicating, and encourages students to develop oral communication, critical-thinking and teamwork skills that will be important in their future careers and day-to-day lives.

Our goal is to raise an endowment fund of \$1 million to allow OUDS to continue to foster a culture of debating excellence at Otago.



Otago University Rowing Club

The Otago University Rowing Club was formed in 1929 and its teams successfully compete nationally and internationally against the world’s top universities. Otago rowing alumni include numerous New Zealand representatives, Olympic and world champion rowers.

Our goal is to raise an endowment fund of \$1 million to support a full-time club manager and coach. Contributions to this project will enable our student rowers to compete, travel and grow as athletes and as people. Club boats, facilities and awards may be named in recognition of your support.



Social Impact Studio

The Social Impact Studio is about student-driven change through volunteering and leadership. It will be a hub for social impact through creativity and innovation – a place where Otago students, staff, faculty and community work together to design and implement projects that benefit our society and environment.

Become part of our future story by supporting our key student-led social action projects and helping to maximise Otago’s positive student-led engagement.



Yes, I would like to support the University of Otago and its ongoing programmes. Your gift can be directed to any one of the following areas:

- ☐ EXPINKT™ cancer rehabilitation programme through exercise
- ☐ Music, Theatre and Performing Arts facility
- ☐ Marine Studies replacement research vessel
- ☐ Lecturer in Chaplaincy Studies
- ☐ Otago University Debating Society
- ☐ Otago University Rowing Club
- ☐ Social Impact Studio – student-driven change through volunteering and leadership
- ☐ Other

Amount of gift

☐ \$50 ☐ \$100 ☐ \$250 ☐ \$500 ☐ \$1,000
or my choice is \$

Payment options

1. Make a one-off donation or set up a monthly donation using our secure giving page at alumni.otago.ac.nz/donate/150thfundraisingprojects

2. Charge my credit card: ☐ Visa ☐ Mastercard

Card number:

Expiry date:

Cardholder’s name:

Signature:

3. Pay by cheque:
☐ I enclose a cheque payable to “The University Foundation Trust”

☐ I would like information about including a gift to the University of Otago in my will or living trust.

☐ I have already included a gift to the University of Otago in my will or living trust and would like to notify the Bequest Manager.

For residents in the UK:

please visit goldengiving.com/wall/otagouniversitytrust or email Chapel & York at Otago@chapel-york.com

For residents in the USA who wish to make a tax deductible donation: please visit Alumniuoa.com or email Mr John Crowe, treasurer@otagoalumni.us

For residents in New Zealand and rest of the world, please send this form and your donation to:

Development and Alumni Relations Office
University of Otago
PO Box 56
Dunedin 9054
New Zealand

Name:

Address:

Email:

THANK YOU FOR YOUR SUPPORT



Reunions & events

2019 EVENTS

Wanaka:	15 October
Queenstown:	16 October
San Francisco:	30 October
Washington DC:	2 November
Boston:	4 November
Toronto:	5 November
Vancouver:	7 November

2019 REUNIONS

English Honours class of 1973:	Labour Weekend, Dunedin
University College, 50th anniversary:	22 - 24 November, Dunedin
Dental class of 1969:	15 - 19 December, Dunedin
Dental class of 1966:	TBC, Dunedin

 otago.ac.nz/alumni/news/events



AUCKLAND 3 May. Lani Alo and Antoinette Tuipe'a.

FIJI 2 April. Dr Jioji Malani.



INVERCARGILL 14 June. From left: Konrad Richter, John Ward, Sue Ward, Margaret Dynes, Bernie McCone, Ken Bowie.

MELBOURNE 9 May.



SYDNEY May 7. From left: William McVeagh, Emily Bowden, Ali Choukry, Ken Fullerton.



SYDNEY May 7. From left: John Deaker, Kerry Horne, Chris Horne, Elspeth Deaker.



OXFORD 2 July. Merton College.



EDINBURGH 25 June. Lord Provost's Office.



LONDON 28 June. House of Commons.



NAPIER 23 May. Lisa Pohatu and Chelsea Cunningham-McLean.

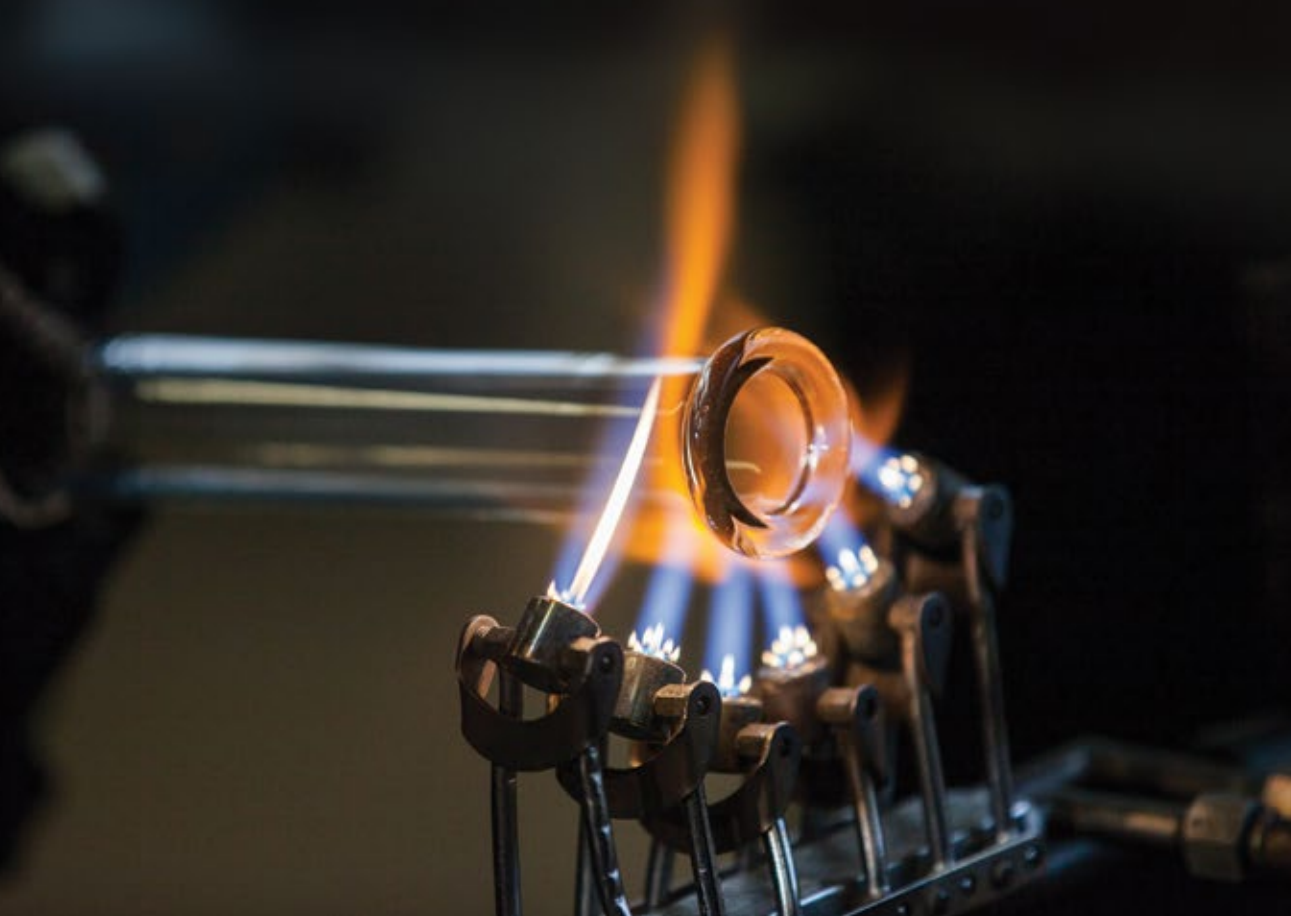


A special event celebrating Otago students, staff and alumni who have held some of the world's most prestigious scholarships was held on 30 May. "All Rhodes Lead From Otago" was hosted by the Graduate Research School and brought together recipients of the most significant international scholarships.

LEFT: Mrs Dorothy Meyer and Emeritus Professor Sir Alan Mark.

Otago's Glassblowing Unit

At a time in which hand-crafted, custom-designed products are often considered luxury, the University's Glassblowing Unit continues to provide bespoke solutions for Otago scientists and students.



ESTABLISHED IN 1954, the Glassblowing Unit sits within the Division of Sciences and employs two experienced scientific glassblowers – Anne Ryan and Greg Kerr (who works part-time). A third glassblower, John Wells, has a workshop in the Department of Chemistry.

Their work ranges from simple 10-minute jobs to the highly complex and it is truly hands-on. Using mainly borosilicate glass – preferable because it is more forgiving – they heat, manipulate and fire (anneal) this into items that are used throughout Otago's research laboratories.

Borosilicate glass has a working temperature of 1,260 degrees Celsius, at which point it begins to behave like a liquid. Anne Ryan explains that it is better suited for their work because of its transparency, resistance to thermal shock, and its potential to be formed into complex structures, repaired and modified.

Their tools of trade include LPG and pressurised industrial oxygen to achieve the necessary high temperatures, specialised glass working lamps and crossfires fixed to lathes. Once heated, the glass is carefully pulled, bent and shaped, with air delicately blown to change diameters and thicknesses. Multi-layered items are formed in sections and constructed from the inside out. Intense



Photos: Sharron Bennett



University of Otago scientific glassblowers Greg Kerr and Anne Ryan.

heating allows holes to be picked out and pre-prepared sections to be fused on. The finished glass items are then flame- and oven-annealed to reduce strain.

Each job is different. Routinely-made scientific glassware includes jointed round and baffled flasks, Leibig condensers, Gooch crucibles, electrochemical cells, separating funnels, sintered columns, diffusion cells, cynobacteria flasks and filtration sets. The glassblowers also design and manufacture one-off items on request and have an archive of sketches to draw upon.

"Researchers often come to us with an idea: it may be something that they have used elsewhere and they would like recreated or modified, or they might need a solution for a specific purpose," says Ryan.

These can be as simple as a circular glass disc etched with channels on which human tissue can be placed in an incubator, to the creation of a pair of glass pyramidal neurons commissioned by Dr Blake Porter from the Department of Psychology. These intricate models incorporated LED lights

and copper spirals to demonstrate how new learning is transmitted through electrical pulses between neurons.

"For custom-made glassware we need to understand the special requirements of the customer, their budget, time constraints and the availability of materials," she explains. "Some trial and error is also involved, working out how to achieve a particular seal or shape, the order of the construction and how to manage the things that might go wrong! But it is always a pleasure to do this sort of work, especially when it involves some artistic licence."

In addition to manufacturing scientific glassware, the Glassblowing Unit also offers a repair service and stocks a comprehensive range of standard ready-made laboratory glassware as well.

KAREN HOGG

Please help us to stay in touch in a way that best suits you

EMAIL: database.alumni@otago.ac.nz

VISIT: alumni.otago.ac.nz/alumni-update-form

OR PHONE: +64 3 479 4516

- to update your contact details (phone, email and postal address)
- to cancel your print copy of the *Otago Magazine* and read it online instead
 - to receive only one "household" copy of the *Otago Magazine*
- to receive other alumni and University communications sent only by email including @Otago, event invitations and the monthly What's On



otago.ac.nz

Read the *Otago Magazine* online
otago.ac.nz/otagomagazine