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If one thinks of the most eminent universities in the world, virtually all of them have outstanding buildings or beautiful campuses. This is true not only of ancient institutions (such as Oxford or Harvard), but also of those rare places (such as Duke University or Stanford) that became world class within a few decades from their foundation.

It is equally true that, as an experienced university president wrote recently, everything we know about universities tells us "that you build institutional strength on the quality of the faculty; nothing can substitute for it". So perhaps the best scholars (and students) are attracted to universities with superb facilities. I also like to think that the human spirit is more inclined to be creative when inspired by uplifting surroundings.

For more than a year, an international consulting firm (DEGW) has led a major planning exercise to guide the development of our own campuses in Dunedin, Christchurch and Wellington over the next 20 or 25 years. The University has grown rapidly since the last Campus Master Plan was produced in 1980.

The consultants went about their task with exemplary thoroughness. Not only did they examine every building, but they also sought to understand the aspirations and goals of the University and its constituent parts. Using surveys and focus groups, they obtained the views of students and staff about the campuses as they are today, and about their vision for the future. They also met with interested parties outside the University.

The Dunedin campus is well known for its beauty, yet some parts of it are disappointing. Furthermore, a major expansion of facilities will be needed over the next two decades. The expanding student roll is only one of the reasons for this. Traditional lecture rooms do not meet all the requirements for modern approaches to teaching and learning, which involve much small-group teaching, informal learning and use of advanced technologies. Moreover, as New Zealand's most research-intensive university, we have a continual need for more laboratories and other research space.

The main report from the consultants (which can be found on the University website) provides a bold vision for the future. They have encouraged us not to "make do" with run-of-the-mill facilities, but rather to create world-class campuses which will enhance the experience of students and staff, as well as benefiting the communities in which we are placed. Quite a few buildings are proposed for demolition or redevelopment, on the grounds that they are no longer fit for purpose or are located in the wrong place. Among the consultants' many detailed recommendations are proposals for several new buildings around the Union lawn, a total re-make of the Sciences precinct, new buildings for Humanities fronting the Water of Leith along Albany Street (towards the new stadium) and ambitious expansion of the Health Sciences facilities at all three campuses.

The Leith itself is seen as providing a wonderful opportunity to have a natural feature, running like a thread through the Dunedin campus, with multiple recreational and ecological uses. Much of the river is ugly at present and the proposals for its enhancement with development of a riverside walk from the Botanic Garden to the sea are very appealing.

This report will now need to be discussed extensively, not only within the University but also by other interested bodies and the wider public. Realistically, it would not be feasible for the present University Council to "sign up" to an entire plan which would involve the expenditure of well over a billion dollars over 20 years or more. But I do hope we can commit to the overall vision and start to implement that in a staged process.

Anyone who thinks the plan is unachievable should reflect on the ambition of the early Scottish settlers who founded the University of Otago. They did so not during the heady days of the gold rush, but during the period of decline that followed. And they started to build the grand bluestone buildings on the banks of the Water of Leith only 30 years after the *John Wickliffe* and the *Philip Laing* had berthed at Port Chalmers.

Professor David Skegg
Vice-Chancellor, University of Otago

Images in time

In a collaborative effort with DOC, Otago staff have revealed much about ancient dendroglyphs on the Chatham Islands, a cultural symbol of the Moriori people.

Highly technical work to record historic Moriori carvings on trees slowly dying on the Chatham Islands has been a revelation, taking everyone by surprise – Moriori included.

In a project initiated and led by the Department of Conservation, University of Otago know-how was pivotal to successfully scanning three-dimensional images of these carvings in the bark of living kopi trees, known as karaka trees elsewhere in New Zealand.

The carvings, or dendroglyphs, are the cultural symbol of the Moriori people. It is widely believed they were made hundreds of years ago when the kopi trees were young. To the descendants of Moriori who etched the carvings, these whispering groves of trees are tapu areas. Depicting human, animal and geometric figures, they are living reminders of ancestors and of a unique culture which thrived prior to European and Māori contact from the late 18th century.

Most of the carvings likely pre-date, as the late historian Michael King in his book *Moriori; A People Rediscovered* recounts, the invasion by two Māori tribes from Wellington in 1835, leading to the deaths, enslavement and traumatisation of most of this openly pacifist Moriori population.

Hokotehi Moriori Trust chairwoman Shirley King says her people have an enormous emotional attachment to the tree carvings because so much Moriori cultural knowledge and evidence has already been lost, unable to be passed down to future generations. So it is important that the carvings are recorded with the utmost accuracy.

"We hold them in absolute reverence. Looking at them, you feel as though you are reaching back in time and they [our ancestors] have left a message. They are absolutely precious to us, so it is very sad to see them dying," she says.

It is a 21st-century tragedy for the Chathams that these old kopi trees are fast disappearing although, by their nature, they could never last: the passage of time, erosion, wind, pests and farm grazing have all taken their toll on the canopies, resulting in the destruction of large stands of forest.

It was the realisation that the carvings could be gone within two decades which drove DOC's Wellington technical support officer in historic matters, Richard Nester, to search for a way to record the carvings in fine detail before they turned to dust.

He contacted professional practice fellow Richard Hemi at the University of

Otago's Surveying School, to find out if it was possible new scanning technology could be used to take high resolution, three-dimensional images of the carvings. In 1998, Hemi's colleague, Fraser Jopson, had recorded an inventory and maps of the trees. So, as Otago had in the past assisted Moriori on anthropological projects, Nester also contacted University anthropologist Dr Ian Barber to investigate other features of the trees, such as their proximity to shell deposits.

Barber, Hemi and Jopson gathered three postgraduate students to help with the work and, in early February, set off on what they subsequently agree was "the trip of a lifetime".

Hemi says a portable hand-held laser device had been located at a commercial firm, Scanz 3D, in Hamilton. While it had never been used to scan trees, it had

Dr Ian Barber, Richard Hemi and Fraser Jopson: They scanned more than 100 kopi trees to record the dendroglyph images.
Photo: Alan Dove

been used to scan surfaces difficult to survey and he believed there was a good chance it would scan the dendroglyphs.

"It picks up millions of points where normal surveying picks up mere thousands. It measures distance and direction and then produces a mesh surface which shows the image in 3D form," he says.

"It's used typically for industrial purposes – for example, to image industrial products where a 3D model is required, and this is usually done in a laboratory. This is very likely the first time in New Zealand it has been used for an outdoor exercise so we weren't sure how it would go. We had to calibrate the light of the laser, so needed to erect tarpaulins in the forest to control natural light and pray that it wouldn't rain. It didn't, thank goodness."

Over two weeks of near-perfect sunshine, DOC and the Otago team scanned around 100 of the 147 trees Jopson had earlier identified on the north-east side of the main island. To their amazement, when they later looked at the images on a laptop, they found hidden carvings on five of the trees that only the scanner had picked up.

"We were downloading one of the images and suddenly, out of the blue, this other carving appeared. We'd actually scanned this figure without really seeing the other one: it was a striking head and face," Hemi says.

Barber, an anthropologist with many years' experience on Māori heritage sites in New Zealand, sees the Chathams as an understudied area of huge significance to the Moriori story, much of which remains to be told.

He says early Polynesian people brought the kopi trees to the Chathams and the South Island from New Zealand's North Island. The Chathams dendroglyphs represent the largest grouping of this particular early indigenous art form in the world. Such art forms, usually marking graves and ceremonial places, have also been reported among the Native Americans of the USA and Canada, and the

Aboriginal groups of New South Wales, but not in such great numbers as the carved Chatham Islands kopi.

"They offer rare insights into a unique Oceanic art form and sense of sacred space, and the life-ways of a distinctive Polynesian people.

"In spite of this, little has been done to investigate these sites beyond the descriptions of early recorders and anthropologists who visited and studied on the islands in the 1950s and 1960s," Barber says.

He examined the carvings and their similarities to Polynesian art forms, in particular their head, eye, nose and mouth shapes. One tree carving stood out for him as "quite different" to the others and, almost definitely, of Polynesian influence.

"They are all quite different to Māori art forms, but this one, in particular, bore a striking resemblance to central/eastern Polynesian carved rock figures, found especially in the Marquesas Islands."

King says that when a special showing of the scanned images was held at a community gathering at the islands' Kopinga Marae, she was brought to tears.

"It was incredible that the images exposed things that we weren't aware of and that we could not see with our eyes. I just cried and cried. The level of detail was amazing. They have left us with windows which we can keep looking back into forever," she says.

These images will be treasured by Moriori. They may be used to make holograms recreating the carvings for educational purposes, and to teach young people how to carve for themselves. They will also be shown to Moriori descendants living in the North and South Islands, many of whom have never visited the Chathams or seen the tree carvings, King says.

The Otago team found the work of helping to preserve this important symbol of Moriori heritage a rewarding and, at times, moving experience. For Jopson, it was the continuation of a project he had begun in the late 1990s and Hemi also found it very gratifying.

"It was good to show them what we had produced, but it also raised the question of how now to interpret images which were either new or much clearer than before. Things that may have been interpreted as a particular scene, with a certain meaning, may need to be interpreted in a different way because, in some cases, the images show the carvings differently."

King agrees that the clarity of the images and the location of the new ones raise new questions, leading to future debate among her people about their meaning.

"They [the dendroglyphs] offer rare insights into a unique Oceanic art form and sense of sacred space, and the life-ways of a distinctive Polynesian people."

Photo: Ian Barber

For Barber, the trip was a high point of a career which takes him all over the world as an anthropologist. Through erosion, many Moriori middens have been exposed along the coast and he is almost certain these are rich in cultural artefacts that could reveal more about dates of certain events, including earliest Moriori occupation on the island.

"There is so much there to research and so many questions that still need to be answered. I am enormously grateful for the opportunity and for the relationship this University has with Moriori," he says.

He is also mindful that, for further research, the Moriori require ethical approvals, especially where research is to be undertaken in sensitive areas, such as where Moriori buried their dead.

One of the key historical questions is where Moriori originally came from.

"We were downloading one of the images and suddenly, out of the blue, this other carving appeared. We'd actually scanned this figure without really seeing the other one: it was a striking head and face."

King believes her ancestors almost certainly came from eastern-central Polynesia – perhaps the Cook Islands. And Barber agrees the scientific and linguistic evidence for Moriori origins in central-eastern Polynesia is conclusive. There is also evidence of early contact between the first Polynesians of the Chathams and the main New Zealand islands.

"I believe that both the Chathams and the mainland islands of New Zealand were settled by early Polynesians who soon lost contact with each other, allowing the development of a distinctive Moriori cultural identity and people on the Chatham Islands. The course this cultural development took is a fertile field for research," he says.

While he still has to confirm this, he believes that large deposits of shells he saw around the trees signified that the groves were used as a Moriori meeting or marae space.

"We mapped a number of shell deposits that are directly associated with, and bounded by, carved trees – so much so that I suspect they were laid as surfaces, effectively becoming part of the tapu space. And there is precedent for this in Polynesia where beach material was laid as a surface to create a meeting place."

As the kopi tree does not produce rings to show its age, Barber is organising carbon dating of a fallen kopi log, to try to unlock the mystery of the age of the trees and the carvings, thought by some to be up to 300 years old. Shell deposit material found near the trees is also to be carbon dated.

It is significant, he says, that as the trees die and disappear, Moriori have given the tree carvings new life as symbols of their emerging identity.

"The Moriori represent perhaps the most misunderstood people in New Zealand history. In modern thinking they are often characterised as a defeated pre-Māori race, or as simple pacifist folk who have died out. The contemporary Moriori cultural revival challenges both views, and may come as a surprise to many New Zealanders who think they know the history."

JO GALER

The vice-chairman of Hokotehi, Maui Solomon, who is the grandson of the last full-blooded descendant of the original Moriori of the Chathams, Tommy Solomon, says the trust is developing its own cultural database from a "Moriori world view" for future generations of Moriori.

He adds: "Hokotehi is developing research protocols that incorporate both standard scientific principles and indigenous knowledge of Moriori themselves.

"In this way, Moriori hope to combine the best of both contemporary and traditional science practices to achieve a new paradigm of understanding about my karapuna (ancestors)."

Shirley King says she would welcome further anthropological research on the island in collaboration with Hokotehi. She still has many questions she would like answers to, such as what size the trees were when the carvings occurred and why her ancestors chose the kopi trees in particular.

The trust also aims to retrieve and repatriate skeletal remains of Moriori that are scattered around New Zealand and throughout the world, and encourage the planting of kopi trees and further carvings "to honour our people".

King and the local people are impressed, too, with the dignity and respect shown to both the trees and local people when the Otago and DOC staff visited the islands.

"We've formed a special relationship. Otago people engaged with us in an ethical and respectful manner, even inviting us to participate in the work.

"I went out there with my grandchildren and we helped clean down some of the trees in preparation for imaging, and some of the kids got to do some of the imaging, and so did I. This was moving and also quite refreshing. We would welcome them back any time."

An honourable man

Recently retired High Court Judge – and Otago alumnus – Sir Bruce Robertson takes great pride in our legal system, yet is also aware of its shortcomings.

The Honourable Sir Bruce Robertson almost wasn't honourable at all. The Otago Boys' High School alumnus set out to study that longstanding pillar of respectable professional practice – medicine – but ended up following his talent for argument into another – the law. It proved a fortuitous switch.

Bruce Robertson, it seems, was born for the law. Even if Mr Robertson Snr had been keen on seeing his boy as a doctor, he could hardly have sniffed at the career his son would instead carve out for himself over more than four decades of service in the country's courtrooms, rising from partnership in the Dunedin law practice Ross Dowling Marquet Griffin, through appointment as a High Court judge in 1987, presidency of the New Zealand Law Commission from 2001 to 2005, to membership of the Court of Appeal in 2005.

The University of Otago bestowed an Honorary Doctor of Laws on Justice Robertson in 1990, an honour which, he says, gave him a "greater kick" than the knighthood, for services as a judge, he received in 2010. Either way, the boy from Wakari School hasn't done too badly since that first year as an arts and law student.

Sir Bruce's wider involvement with the University has continued since he was elected student president in 1967, two days before the "sleep-in" at the University Union Building in protest against the University's opposition to mixed-sex flatting. He taught part-time in the Faculty of Law from 1969 to 1985 and was a member of the University Council from 1969 to 1988, including six years as Pro-Chancellor. More recently, he was a member of the Advisory Board of the Children's Issues Centre and chair of the Advisory Review Committee for the Human Genome Project. Even now, after retirement from the New Zealand bench, he still, he says, "wanders in most years to give a lecture".

With similar modesty, Sir Bruce sees his investiture – which has mainly resulted in gentle ribbing from friends and family – as less of a personal acknowledgement than a mark of the importance of the legal system to the nation in general.

"I do feel very strongly, that if there is an honours list, that judges should get recognition, because the rule of law is enormously important in our community and the life of a judge is particularly demanding and challenging.

"It's not really the judge themselves: it's the whole institution, the people who work in the courts, the lawyers who appear in the courts, and it's a way of saying that the rule of law in a free and independent society is a very important thing."

Prominent trials over which Sir Bruce has presided include one of the Peter Plumley-Walker murder trials and the infamous "Winebox Review", but he says he derived the greatest satisfaction from cases in which he felt he helped litigants find resolution and move on, something he sees as one of the law's primary functions.

His love affair with the law has never diminished and he has been a passionate, if measured, advocate for the need to keep it focused on its *raison d'être* – the people – rather than see it become an intellectual exercise for its practitioners. This led to the introduction of what he calls "reality checks" while hearing cases.

"I think we shouldn't spend our time fighting the ingenuity of lawyers' minds," he says. "The law has got to be grounded in people's experience, grounded historically in what occurred and grounded in the fact that, in virtually all cases, there is a future. If a process simply makes the future more problematic than it was going to be, it doesn't do anybody any good."

The Dean of Otago's Law Faculty, Professor Mark Henaghan, comments: "As a judge, Bruce has always put the emphasis on getting the most practical results for the parties in the most efficient time frame. He never lost sight of the fact that judging is about solving everyday problems for the litigants and

not about long discursive judgments just to show how learned the judge is. Bruce was a judge for the people and his distinguished service in the Family and Criminal Courts meant he could read the realities of a situation very quickly and correctly."

Courts, Sir Bruce believes, have to be more sensitive to the needs of litigants, and some of our judges more focused on resolution than creating common law.

"The law will develop as the courts decide individual cases," he says. "But it's not for judges, particularly intermediate and first-instance judges, to go laying out the 10 Commandments mark II."

Sir Bruce is equally passionate about the need for greater accessibility to the legal system. While never losing sight of the fact that the law serves the community, he points out that our current court system is overloaded, alienating and prohibitively expensive for most people to access.

"Most of us, if we have a problem, cannot contemplate going to a lawyer about it. People simply cannot afford the time it involves, what it does to the rest of your life, the bills that are involved and the sheer draining aggravation of the process. The courts of law are like the Ritz Hotel. The doors are open to everybody, but who gets in is a tiny proportion."

The 2004 Law Commission report, "Delivering Justice for All: A Vision for the New Zealand Court System", prepared while Sir Bruce was commission president, identified problems relating to access and processes within our court system and made recommendations aimed at improving it, such as the establishment of a Community Court. Six years on, however, little has altered, a fact that Sir Bruce attributes to resistance to change within the legal establishment.

"The number of judges has increased astronomically in the 22 years I've been there. Every time we get backlogs we simply appoint more judges and have more lawyers

The Honourable Sir Bruce Robertson: "I have a degree of trouble with longer and longer prison sentences ... for most people, the clang of the prison gate, the ignominy of the court and the publicity surrounding it are enough."
Photo: Alan Dove

"The courts of law are like the Ritz Hotel. The doors are open to everybody, but who gets in is a tiny proportion."

to do the same thing. What I tried to say in the Law Commission report is that we've got to ask some hard questions about how we do things and whether the current way of doing them is the best way."

Sir Bruce points to the government's decision to establish the Weathertight Homes Tribunal as a failed attempt to deal with a problem that should have been addressed within the existing court structure.

"It just seemed to me a terrible indictment on the law when you say 'here's one of the biggest problems we've had for generations and the courts, which are set up to deal with disputes, aren't going to be able to cope with it so we'll set up something else'."

Sir Bruce faced criticism early on in his career for handing out sentences perceived as light, particularly in rape cases, but he argues that there is no empirical material to support the view that longer sentences do deter those who commit violent crime. He also questions our society's increasing focus on retribution, which he points out has resulted in New Zealand having the highest rate of imprisonment among the Commonwealth and northern European countries against which it traditionally benchmarks itself.

"I have a degree of trouble with longer and longer prison sentences. Of course, there are some people who need to be locked up for their own good and for the good of the community because they're simply going to be a menace. But, for most people, the clang of the prison gate, the ignominy of the court and the publicity surrounding it are enough.

"It worries me that we keep on feeding to the public [the idea] that longer prison sentences will make our communities safer. I just wish we could be a little less emotive and a little more rational in asking what will make our society a safer place? Deterrence is just not part of the reality of the way criminals act."

Sir Bruce sees that the increased focus on victims' rights in the criminal system over the last three or four decades has contributed to the shift towards sentencing as personal retribution, but believes the downstream effects of this shift have not been thoroughly considered. Historically, he points out, crime was seen as a crime against society, not the individual, and sentencing someone for life can never re-pay a life taken. Rather, he argues, there is an imperative to address the root causes of criminal behaviour in society and to introduce initiatives in prison aimed at reducing New Zealand's high recidivism rate.

"If I want to be a hero judge, then I just lock people up for longer: somebody will write a story about Robertson the tough guy and that's going to cost the community about $60,000 a year for every year that someone's locked away. But if people in the District Court want some money to do community-based projects to avoid people getting to that stage, that money's not available. I don't understand that.

"Someone has to deal with the very hard questions of why it is that the overwhelming majority of people who go into our prisons are unemployed, uneducated and very large numbers of them are illiterate or have mental disorders. It is much easier to say, 'if only the judges would lock people up for longer then all the problems would go away'."

Despite the systemic and structural faults he perceives, he takes pride in our legal system and believes we have a responsibility to assist our Pacific neighbours with strengthening their own, less robust examples. Sir Bruce, who worked as a volunteer in Samoa in 1965, sat on the Court of Appeal of Samoa and has been president of the Court of Appeal of Vanuatu since 1996. Although he retired from active work in New Zealand's High Court and Court of Appeal early in 2010, he maintains appellate and advisory duties in Vanuatu.

Sir Bruce believes judges who continue to sit until the compulsory age of retirement run the risk of becoming out of touch and he believes in making way for younger judges to rise through the ranks. Yet, it does not seem as if he himself has done all his work yet. In his 2005 graduation address, Sir Bruce quoted Scottish author Robert Louis Stevenson, with whom he shares a Scottish heritage and a love of the Pacific, in stating "To be what we are and to become what we are capable of becoming, is the only end in life". When asked if he feels, at this point in his life, that he has managed to achieve as much, his response is typically ambitious, tempered by realism.

"It has been my standard, although I doubt that I have totally fulfilled its challenge. But then, I have not given up yet!"

REBECCA TANSLEY

Piecing together the asthma puzzle

Professor Julian Crane has been no stranger to controversy as he and the Wellington Asthma Research Group have worked to reduce New Zealand's high asthma mortality rates.

After three decades, Professor Julian Crane is still excited by the clinical challenges of asthma research, driven by the knowledge that chronic asthma and allergies continue to blight the lives of 600,000 New Zealanders.

The Wellington Asthma Research Group (WARG) he heads has made significant advances in the understanding and treatment of this condition. And yet, in spite of the huge amount of work undertaken both here and internationally, we still don't know why New Zealand has a greater incidence of asthma than most other countries, or why one person develops asthma and another doesn't.

Crane is committed to piecing together this asthma/allergy puzzle, providing clinical direction for sufferers and health professionals, and uncovering links between the environment and New Zealand's most common respiratory disease, and other allergies.

Originally from London, where he trained in medicine and as a general physician, Crane has spent nearly all his career in Wellington, initially at Wellington Hospital and then at the University of Otago, Wellington, most of it researching respiratory illness and public health issues.

He has also been caught up in a controversy or two …

"In England you were expected to spend up to two years doing research as part of your postgraduate training. That really wasn't the case when I first arrived here in the mid '70s," he says.

"So, in the early 1980s I jumped at an invitation by the then head of the Department of Medicine, Professor Tom O'Donnell, to go to the Tokelau Islands to look at the prevalence of asthma there compared to those islanders who'd come to New Zealand in the 1960s."

Ironically, the money for this trial was provided by the large German pharmaceutical company, Boehringer Ingelheim, which made an asthma bronchodilator drug called Fenoterol.

Crane was not to know that he and three colleagues were to become embroiled in one of the biggest medical controversies in New Zealand centred on this then commonly-used asthma drug. Together with Neil Pearce, Richard Beasely and Carl Burgess, he revealed over the course of the 1980s that Fenoterol was, in fact, responsible for what became known as the "New Zealand asthma mortality epidemic".

"This was very serious: we had asthma mortality rates for people under the age of 34 running at over four times the UK levels for non-Māori, and 12 to 13 times for Māori. By the end of the decade we demonstrated that more than 60 per cent of all asthma deaths in New Zealand at this time were among people using Fenoterol."

Crane first became aware of the high rate of asthma deaths while working at Hutt Hospital in the mid 1970s and was surprised at how common it was; almost accepted by clinical and nursing staff. But he says it wasn't until Auckland immunologist Dr Doug Wilson wrote a paper in the UK medical journal *The Lancet* in 1981 that he really began to be suspicious about the bronchodilator drug.

Professor Julian Crane (centre) **with colleagues Dr Kristin Wickens and Robert Siebers:** Now they are focusing on the better management and underlying environmental causes of asthma and allergic disease.
Photo: David Hamilton

"Dr Wilson examined asthma deaths in Auckland because of a number of sudden deaths that had occurred amongst the committee of the Auckland Asthma Society. His paper raised serious questions about treatment and asthma mortality."

Subsequently, Crane and his Wellington School of Medicine colleagues embarked on a "David and Goliath" struggle with Boehringer Ingelheim, trying to uncover the science behind the high rate of asthma deaths and Fenoterol.

They came up against resistance from many senior members of the international medical establishment. Funding was almost impossible to obtain so, initially, much of their research was undertaken in private, after work and in the weekends.

"Boehringer Ingelheim and others in the medical world fought a very strong campaign to discredit our research. To say it was a difficult time for us is an understatement. We came to feel quite isolated in the New Zealand research and medical world."

Finally, the newly-formed Wellington Asthma Research Group published a seminal paper in 1989 in *The Lancet,* strongly suggesting that the very high rate of asthma deaths in New Zealand was definitely linked to the high use of Fenoterol; much higher than anywhere else in the world. This was followed by another two papers in the early 1990s, further confirming the results of the first study.

"The result was that the government stopped funding Fenoterol, although it wasn't withdrawn as that's a difficult and expensive process. Essentially, though, it's not prescribed here anymore and our asthma mortality rate then quickly fell back to pre-epidemic levels. Interestingly, it [Fenoterol] never was approved in the US by the Food and Drug Administration."

Their story was eventually published in the book *Adverse Reactions: The Fenoterol Story,* written by one of the group, Professor Neil Pearce.

They then turned their expertise to the better management and search for the underlying environmental causes of asthma and allergic disease.

The difficulty with asthma is that it is not one disease, Crane explains, and the causes are multifactorial. These include viral infections, exposure to common allergens in the environment and a genetic susceptibility to developing allergic responses to them. However, pinning down the causes definitively in a scientific sense is much more difficult.

By the 1990s WARG had received programme funding from the Health Research Council of New Zealand and was easily the largest research group in the country investigating asthma. Work was done on improving asthma management and the group developed plans for patients, including a credit card-style management system that was adopted in a number of countries.

"We believed everyone should have a peak-flow meter because those who die have often underestimated the severity of their asthma attack – probably because they get used to having a chronic illness. We believed having a peak-flow meter would help patients assess how serious things are – and to call an ambulance if necessary.

"We patented the idea of putting a peak-flow meter on top of asthma 'puffers' which also enabled people to check their breathing. We then combined this with a plastic card with a personalised management plan – convenient for the wallet. It worked well – we distributed thousands of them here – and was picked up overseas as well."

The Wellington and Christchurch infant cohort study of over 1,000 children has provided another important area of asthma research. The cohort study follows children from birth in 1998, investigating environmental and lifestyle factors associated with asthma and allergies such as eczema and hay fever. In collaboration with US colleagues, WARG has been using this database to examine the possible role of vitamin D in the development of asthma and eczema, and in the development of food allergies.

"We've also undertaken many studies looking at allergens in the home, such as house dust mite and cat allergen, and ways in which we might try to reduce exposure to them.

"Cat allergen is by far the most interesting. It gets everywhere. It floats around in the air inside a house for days as the particles are so small they don't settle," explains Crane.

"The result was that the government stopped funding Fenoterol … and our asthma mortality rate then quickly fell back to pre-epidemic levels."

"... many more people are sensitised to house dust mites ... although we don't know why. Nor do we know why one person who is sensitised develops asthma and another does not."

"They come mainly from saliva when the cat preens itself and, when inhaled, the cat-allergic patient mounts an inflammatory response. If this is focused in the lung, it leads to narrowing of the bronchial tubes and wheezing.

"A cat-allergic person can walk into a room and start wheezing immediately, and there may not have been a cat there for days. They even found cat allergen at Scott Base in Antarctica and, as there have only ever been two cats there, it probably came down on clothes and on people's skin.

"However, that said, many more people are sensitised to house dust mites which are a much bigger problem in New Zealand, although we don't know why. Nor do we know why one person who is sensitised develops asthma and another does not.

"One of our studies showed that you are less likely to get house dust mites in feather pillows and duvets than in synthetic bedding. It's all related to the fine weave used in down-filled bedding which prevent the mites getting into the down."

WARG is now looking at the effects of probiotics in preventing eczema, based on the hypothesis that the bacteria babies get from being fed breast milk might confer some kind of protection by stimulating the immune system and helping to prevent the development of allergies.

"Indeed, one of the probiotics we've looked at does seem to reduce the number of children getting eczema. We have another Health Research Council grant to see if probiotics protect against asthma as well."

In recent years the group has been closely involved in ground-breaking research by the He Kainga Oranga/Housing and Health Research Programme, led by Professor Philippa Howden-Chapman. Its studies have shown that New Zealand's cold, uninsulated and poorly-heated houses make people sick – and asthma is one of those illnesses – made worse by low interior temperatures and unflued LPG space heaters. WARG is extending these studies to look at the effects of cold damp houses in the development of asthma in young children.

Links between smoking cessation and respiratory conditions are another significant and new area of interest. Crane explains that while smoking isn't good for anyone, it is particularly bad for those who have respiratory problems, accelerating the decline in lung function. Second-hand smoke is also extremely bad for infants, increasing the likelihood of wheezing which, in turn, can develop into asthma.

Here, Crane leans forward with a somewhat conspiratorial air and turns to the cupboard behind him. He extracts a metred-dose inhaler, which, although still in the developmental stage, may become a world-first solution to helping smokers quit for life.

"The aim is to deliver nicotine to the lungs – in the same way as an asthma 'puffer' – in a safe and painless manner. It might be effective in helping people to stop smoking because the nicotine hit is direct and almost instant, just like a cigarette," he explains.

"The big problem with quitting programmes is that 95 per cent of people don't actually stop long term. This is one of the reasons why smoking prevalence is relatively static at just over 21 per cent of the population. That's why we're also researching other nicotine delivery products to enhance current nicotine replacement therapy of patches and gum." [See story page 29]

New Zealand's understanding of asthma prevention, management and mortality has much improved in the past two decades. With new ideas and research, Professor Julian Crane and the Wellington Asthma Research Group are playing no small part in this.

AINSLIE TALBOT

"Mad dog" Englishman ... and realist

Otago's Professor Alan Musgrave is one of the world's pre-eminent philosophers of science. He talks to Rebecca Tansley.

For a former French literature student whose primary engagement with philosophy has been the post-structuralist teachings of *enfants terribles* such as Jacques Lacan and Jacques Derrida, the prospect of interviewing Professor Alan Musgrave is a teensy bit scary. Musgrave, my research tells me, is a realist – a "mad dog" realist, according to the rough-hewn warning hanging in his office. He has no time for continental "idealist guff", as he calls it.

But Alan Musgrave is not really scary at all. Indeed, a more genial and warmer individual would be hard to find. Legend speaks of his dogged pursuit of simplicity in the face of obscurity in departmental seminars, but in his office he is quite affable and – thankfully – prepared to tolerate my (apparently) misguided fascination with semiotics and such-like.

Musgrave has been a stalwart of the University's Department of Philosophy for 40 years, since his appointment to the Chair of Philosophy in 1970.

He came from the London School of Economics, where he had been the student and then colleague of the renowned philosopher of science, Professor Karl Popper, who recommended him for the post.

A Manchester-born, working-class lad who did well at his 11+ exams, Musgrave claims to have fallen into philosophy by accident. He was put forward for the London School of Economics on account of his stroppy behaviour, which apparently determined his suitability for an institution reputedly of the left-leaning kind (even if it was full of right-wing economists).

Originally accepted to study law, Musgrave was diverted on account of his impecunious background – "I was told you needed a rich father to become a barrister" – to a newly established degree in philosophy and economics. The accident proved a fortuitous one. Musgrave was inspired by the teachings of Popper and his colourful colleague, Michael Oakeshott.

"[They] were both of them in their different ways pedagogic disasters," says Musgrave, "and higher education development centres, or the equivalent, would have thought 'My God, we have to reform these people'."

Popper spoke in lectures of what interested him, inviting questions from and debate among the students. Musgrave adopted a similar teaching style himself, later eschewing PowerPoint presentations and other technological aids in favour of the classical rhetorical style.

"When these technologies are exploited well, they're wonderful," he says, "but nine out of every 10 PowerPoint presentations I go to are a disaster. As Steffie Lewis, wife of philosopher David Lewis, said, 'Power corrupts – and PowerPoint corrupts absolutely'. Yet we're all exhorted to do them. I don't. I give old-fashioned lectures where I draw on blackboards – no, whiteboards, sorry. You see how antediluvian I am?"

Musgrave's former student and departmental colleague, Dr Colin Cheyne, notes that, antediluvian or not, Musgrave's lectures are "lively and popular, remarkable for their clarity and erudition, laced with jokes and gossip about famous philosophers and scientists, and delivered in his Mancunian accent with an obvious enthusiasm for the subject matter".

This enthusiasm, intellectual rigour and the encouraging collegial environment Musgrave helped create have contributed enormously to his department's pre-eminence. In the last two consecutive rounds of the Tertiary Education Commission's Performance-Based Research Fund assessment, Otago's Department of Philosophy was ranked the highest department in New Zealand, in any subject, for research output. Musgrave's own publication record is

Professor Alan Musgrave: His enthusiasm, intellectual rigour and collegiality have contributed enormously to the Department of Philosophy's success.
Photos: Alan Dove

prodigious, and his work is engaged by others in their own publications.

"Alan is not only, in my view, the premier philosopher of science in New Zealand, he is also widely recognised as one of the leading philosophers of science in the world," says Professor of Philosophy of Science at the London School of Economics, John Worrall, about the man he refers to as "Big Al".

"For well over three decades now, [Musgrave] has been producing papers that have significantly clarified aspects of the development, foundations and importance of science. He has been a steadfast and highly influential defender of the thesis that science has a very special epistemic status against fashionable trends such as social constructivism and post-modernism.

"The history and philosophy of science is recognised as a discipline around the world," continues Worrall, "but there have been … few who have been able to combine the history and philosophy successfully. Musgrave is a clear exception."

Musgrave's belief that science is the best way we have of "making sense" of our world positions him clearly as someone who believes that the world exists independently of our cognition of it – hence his fundamental opposition to fellow philosophers of the post-structuralist persuasion.

"We might be the smartest critters on the planet, but the idea that everything is some sort of construct of ours – this is idealism.

"There was a universe ticking over for billions of years, before there were people, before there were languages, words, concepts or thoughts. It flatters our egos to think that everything is some sort of construct of ours, but if we take the teachings of science seriously, then I think post-structuralist and idealist philosophy goes out the window."

As Worrall explains, "[Musgrave] has been a consistent and influential defender of … scientific rationality – the view that the process of theory change in science has been a rational one, governed by fixed universal principles of what constitutes good evidence – and scientific realism – the view that successful theories cannot reasonably be regarded merely as tools for prediction, but, instead, as capturing, at least partially, the real 'deep structure' of the universe."

Despite his preference for science as the best epistemic engine for understanding our universe, Musgrave's doctrine of critical rationalism decries the possibility of absolute certainty in all but trivial circumstances. Rather, it differentiates knowing for certain that a theory is true from whether it is reasonable to believe in its truth, given the evidence.

"Most people think that a reason for accepting a theory must be a reason for the theory," he explains. "But that some theory provides the best available explanation does not establish that it is true – the theory in question might be false. Still, it may be reasonable to accept a falsehood.

"If we find out later that something we accepted is false, we find out that what we accepted was wrong, but we do not find out that we were wrong to have accepted it."

In other words, Musgrave distinguishes between reasons in favour of the things we believe and reasons in favour of our believing them.

"I claim … that most people conflate these two things. It can be reasonable to believe something that is false and the

"I actually don't think that we choose the things we believe. We just find ourselves believing them as a result of our education, our upbringing, what our mum or dad told us, what books we've read and who we've been talking to."

reasons you have for believing that thing can't establish its truth, given that it's false."

Predictably, Musgrave's position aligns him with many sceptics, whose view, he says, is that we can't know anything for certain. He is, however, careful to make further distinction.

"Sceptics don't think there is no truth; they think there is no certain truth. I distinguish between scepticism about certainty, which I agree with, and scepticism about reasonableness of belief."

Musgrave also discounts the philosophical notion of belief voluntarism – that we consciously decide what we believe – in favour of the view that such matters are more or less pre-determined.

"I actually don't think that we choose the things we believe. We just find ourselves believing them as a result of our education, our upbringing, what our mum or dad told us, what books we've read and who we've been talking to.

"We can adopt a critical attitude to our beliefs, which is probably a good thing. We can adopt strategies about forming beliefs, but we can't just freely decide to believe something. And, if this is true, it's as silly to persecute people for their beliefs as it is to persecute them for the colour of their skin."

Unsurprisingly, Musgrave is not a religious man. He read the *Bible* once, when he was a teenager, and found it to be a "tissue of contradictions". Religion, he suspects, is a manifestation of our need for absolute certainty. Or perhaps, as Australian philosopher David Stove said, we invent gods who care about us to try to satisfy our insatiable need for attention.

Over the next two years Musgrave is embarking on a "phased" retirement that will see him reduce his teaching load. He hopes to continue teaching his history of science paper, as it is a subject near to his heart and, he believes, an important one.

"I think it's a pity that science students are taught next to nothing about the history of science. They're taught their subject from textbooks which are written as if we've always known the latest stuff. Well, these things have a history and that history is interesting. It's quite an eye-opener for students to find out that we haven't always known the law of inertia and such things."

And so it seems the accidental philosopher, Musgrave the "mad dog" realist, will be with the University for quite some time to come. Post-structuralists, beware!

Musgrave Scholarship Appeal

A scholarship appeal in honour of Professor Alan Musgrave was launched in March 2010, recognising his distinguished, four-decade tenure of the Chair of Philosophy at Otago.

It is hoped the appeal will raise sufficient funds to support the award of a full, two-year master's scholarship every year. As Musgrave's colleague, senior lecturer Dr Colin Cheyne notes, the enhanced reputation of Otago's Department of Philosophy has led to increased interest from postgraduate students.

"In the past, our best graduates went elsewhere – usually overseas – and many were accepted into highly prestigious postgraduate programmes. But, in recent years, more of our own graduates have chosen to stay on and an increasing number of students from universities around the world have found their way here."

Such a thriving group of postgraduate students is a great boon to the life of the department, says Cheyne. This scholarship is intended to provide support to such outstanding students who could not otherwise afford to undertake postgraduate study in philosophy at Otago.

For further information: contact Jude McCracken on 03 479 5246 or email *alumniappeal@otago.ac.nz*

Real-world *CSI*

A veteran of many forensic investigations, Professor Jules Kieser is now helping a team of enthusiastic postgraduate students to push new boundaries in forensic science.

Solving television crime is easy: visit the scene, collect the evidence and deliver it to forensics. Beautiful boffins will soon tell you not only when and how the deed was done, but who did it, what they had for breakfast and where they can be tracked down for a shoot-out or a car chase.

Reality, however, is rather different, as forensic students soon learn at the Sir John Walsh Research Institute, in the University of Otago's Faculty of Dentistry.

While the institute's main focus covers pure dental research, there is also a multidisciplinary team of postgraduate students pushing the boundaries of forensic science under the watchful eye of Professor Jules Kieser.

Kieser, formerly head of the Department of Oral Sciences, was appointed as the inaugural director of the institute last year. His background includes both dentistry and physical anthropology, and he has been working in forensics for many years – he helped with the identification of bodies recovered after the Boxing Day tsunami in South-East Asia.

Fingerprints deteriorate and DNA is hard to work with and slow to measure, so dental records are still a relatively quick and simple means of identifying bodies. But they can't tell the whole story.

That's where several of Kieser's students' research projects begin – trying to identify elements of what happened, when and how, and who was involved.

There's a growing interest in forensics that delve deeper than the slick-and-pretty pseudo science of the current epidemic of *CSI*-style television programmes. Kieser's introductory forensic biology paper has been the most popular subject at the University of Otago's Summer School for some years, and several students have moved on to further research.

Currently there are 15 postgraduates investigating various aspects of the forces acting on biological material. They work closely with Environmental Science and Research (ESR) in Christchurch.

"ESR is our equivalent of television's FBI researchers here in New Zealand," says Kieser. "They come to us with

Professor Jules Kieser: "There is huge potential for criminal forensics. That's why we do it."
Photo: Bill Nichol

specific problems they need to investigate and I link them with interested students. All our projects have a goal. Otherwise we wouldn't do them."

Generally students are co-supervised by other experts in the University and scientists at ESR. The result is a growing body of scientific data that could have worldwide influence on forensic investigation.

Kieser's idea to promote serious research into forensics was born of failure.

He was asked to help explain possible mechanisms of injury in a child abuse case in which a baby may have been thrown against a wall.

"We had multiple head injuries and a hole in the wall, but we could not replicate the event in theory to help interpret the evidence," says Kieser.

"It was a huge frustration for us, and I vowed that I was going to find out more about mechanisms of injury so we would be able to say something sensible and useful to law enforcement officials and to the courts – not just about child abuse, but bullet injuries, blood spatter, decomposing bodies, DNA evidence …"

Kieser's students work with all kinds of forensic evidence, all adding to the tools of the trade. The field is wide open. Much of the work has never been done before, although some of it is not for the faint of heart.

"Students are thoroughly embedded in the subject. All of them take a formal blood spatter course and are exposed to morgue practice.

"As a forensic dentist I see a lot of cases in the morgue and all involve at least one of our students. We give them the best possible grounding, teach them how to think and how to stand on their own two feet.

"We receive enormous support from the Dean and the University," says Kieser. "And, although forensics is only a small part of the institute's work, it attracts a great deal of national and international interest, including collaborations with the University of Pretoria and the Institute of Legal Medicine in Berlin.

"Our students should be able to hold their heads up anywhere – and I encourage them to look for opportunities abroad as well as at home. Kiwis are very good at working internationally."

Graduates have already taken up positions in Australia, Germany and South Africa.

"There is huge potential for criminal forensics," says Kieser. "That's why we do it."

And, although Kieser never watches the forensic programmes on television, he has been known to use them as training exercises – counting all the mistakes they make.

Darnell Kennedy: "We're working to see if we can link unique streptococcal DNA from a bite mark to the teeth of the biter."
Photo: Bill Nichol

A student who fought off an assault bit her attacker. A suspect is found with bite marks. Can the two be linked?

Researcher

Darnell Kennedy: "Recovering a biter's DNA from a bite mark is difficult as enzymes in saliva degrade DNA. We're working to see if we can link unique streptococcal DNA from a bite mark to the teeth of the biter."

Background

After a biochemistry degree, Kennedy's PhD is aimed at developing new techniques to measure the streptococci that colonise our teeth and are deposited with bite marks.

As everyone appears to harbour unique collections of *Streptococci*, DNA sequencing could make a match.

Kennedy is building on earlier work by dentistry students, but has access to new advanced sequencing technology. She has ethical approval for volunteers to bite themselves just hard enough to leave a mark – blood would contaminate the sample – so measurements can be taken after a few hours.

Kennedy has also had a computer programme developed to tackle the huge amount of data generated.

Initial results suggest the future for forensics is looking bright – and the student's attacker could soon be convicted.

Hunters discover a headless human skeleton in Fiordland. Identification is going to be difficult.

Researcher

Sam White: "Sometimes you don't have the quality or quantity of nuclear DNA to be conclusive. Using mitochondrial DNA may be less informative, but, in the absence of any other evidence, it could provide pertinent information and better focus the investigation."

Background

Summer School papers in forensic biology rekindled White's high school ideas of studying forensic science. After completing a biochemistry degree and postgraduate diploma, White now has an ESR scholarship to undertake a PhD exploring mitochondrial DNA.

His task is to find effective ways of separating mixtures of mitochondrial DNA, which could be useful where samples are very small and contaminated with the victim's DNA, as sometimes happens in rape cases.

"The more information you can get, the more you can whittle down the suspect list," says White. "We might not be able to get an absolute conviction, but exclusion is possible and an achievement in itself. Even with other DNA-based evidence to go on, mitochondrial DNA evidence adds weight and may tip the balance."

Mitochondrial analysis is also useful in skeletal remains and disaster victim identification as it is more reliably extracted from old or degraded samples than nuclear DNA.

A two-year old boy arrives at A&E with badly broken ribs. Did he fall or was he beaten?

Researcher

Sarah Weller: "If a kid presents with a rib fracture then he has had a pretty hefty blow of some description. I'd be asking questions."

Background

With an anatomy degree and a diploma in personal training, Weller's interest in forensics was sparked by television programmes.

So, after meeting Professor Jules Kieser she began a master's degree, breaking ribs for a baseline data set using a large biomechanical compression machine on pig ribs from the butcher.

"Breaking ribs is pretty cool," says Weller. "We measure all the biomechanical properties. Ribs break at different forces when they are presented in different conditions and we study the effects – microdamage and the different morphology of the fractures.

"By looking at the mechanism that caused the break and the forces needed to do it, we can set base readings and understanding for adult ribs. Then we'll get data for kids' ribs, which are much more flexible and take a lot of force to break.

"We want to be able to be presented with a rib fracture and suggest what kind of event caused it, which could be useful in cases of alleged child abuse."

A shooting victim is found alone in a house. Was it suicide or murder?

Researcher

Gemma Radford: "A corpse won't talk. But bloodstains can tell you a great deal."

Background

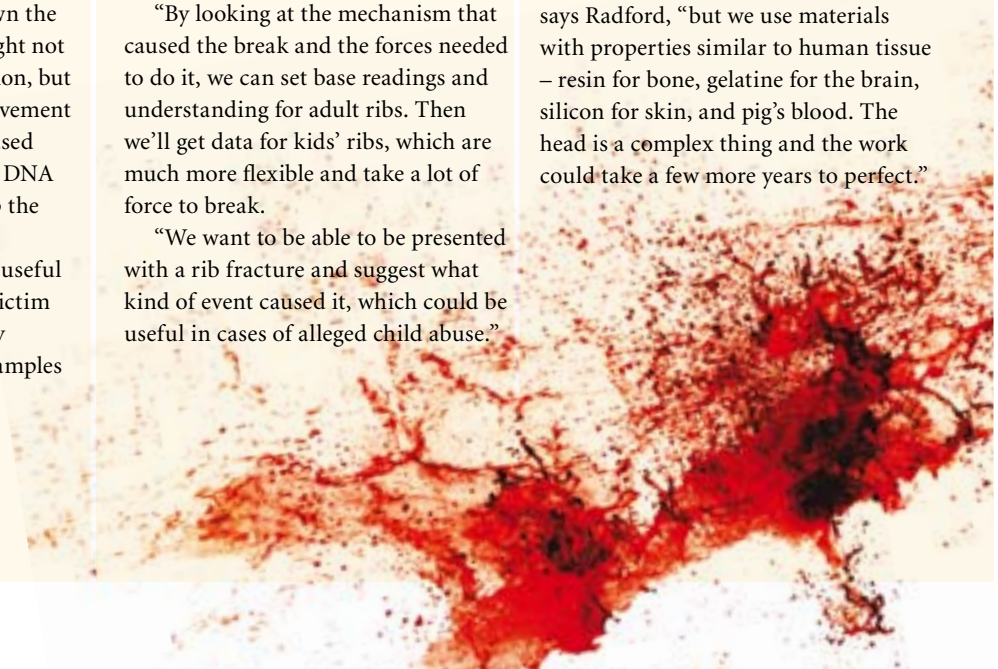
Anatomy graduate Radford has learned to use a 9mm Glock pistol as part of her master's degree.

She is setting out to model the first realistic human head and then shoot it in an attempt to identify patterns in back-spatter – the blood ejected from a bullet entrance wound and often deposited on the hand of the shooter.

The aim is to reconstruct gunshot fatalities in which back-spatter is crucial to understanding what happened.

The project was instigated by ESR (which provides Radford's scholarship) and it is hoped that analysts may eventually be able to identify just how far from an entrance wound a gun was fired.

"No model is going to be perfect," says Radford, "but we use materials with properties similar to human tissue – resin for bone, gelatine for the brain, silicon for skin, and pig's blood. The head is a complex thing and the work could take a few more years to perfect."



Gemma Dickson: "At the moment, no one can give a scientific answer as to how long a body has been in the water, but our research is looking promising."
Photo: Bill Nichol

A body washes ashore.
How long has it been in the water?

Researcher

Gemma Dickson: "Marine bacteria seem to play an integral part in marine decomposition. If we can understand this process, we might be able to use them as a post-mortem clock to determine exactly how long a body has been submerged."

Background

Dickson is using techniques and skills gained during a biochemistry honours degree to advance forensic science.

"At the moment, no one can give a scientific answer as to how long a body has been in the water," she says, "but our research is looking promising."

She has been studying bacteria on pigs' heads immersed in cages. "We've gained lots of interesting information, although this study is just a pilot.

"This kind of research has become a lot more popular over the last couple of years and, with new technology, new ideas and new tools, the things I and others have been doing will probably be used more frequently to answer these kinds of questions in future."

Dickson is also working with the New Zealand Police Dive Squad and has been asked to comment on fatalities during her PhD.

"I've already swabbed five bodies and each one has been totally different. You never know what to expect, but you detach yourself at the time and think about it afterwards."

Fiction forensics

Dunedin crime writer Vanda Symon is doing an inside job. She's working undercover as a postgraduate student, investigating the forensic techniques used in the novels of New Zealand's queen of crime fiction, Ngaio Marsh.

Symon is comparing the crime-fighting techniques in Marsh's fiction with the real-life methods used by British and New Zealand police over the 50 years of her writing.

"Ngaio Marsh is such an important historic figure," says Symon. "We tend to underestimate her achievement in being named one of the four queens of crime fiction, especially with the other three being English upper-class authors.

"She was quite fastidious about her research. What she includes is accurate for the time, so her work documents the rise of things like fingerprint technology and blood analysis."

Symon, who has an Otago pharmacy degree and wanted to get back to further study, aims to be just as accurate.

"Crime writing is very much an artistic pursuit, although you do have to be up with the play as a novelist because readers are very savvy about the latest forensic techniques, especially with the number of television programmes there are on the subject.

"One of the lovely things for me as a writer is being part of Jules' group with people doing really cool cutting-edge research. I have a handle on what is happening right now and I may be able to use bits of this in my novels. It's all very inspiring.

"Everything you read, everything you look at and everything you do in life can feed the fire of inspiration. This should help with what I'm doing in crime fiction as well as satisfying the scientist in me."

Symon is the author of the Sam Shephard series *Overkill* (2007), *The Ringmaster* (2008) and *Containment* (2009).

NIGEL ZEGA

Immunisation: "benefits for all"

In spite of almost daily media headlines, most of the great advances in health care have not been "the latest cure for cancer" or the "newest" technology.

The changes that have really provided the greatest impacts on survival through childhood, on our ability to lead a healthy adult life and on our overall well-being have been public health interventions – foremost of which have been safe and clean water supplies, good nutrition and prevention of infectious diseases by immunisation.

Immunisation and its place in our own lives

Many of us take immunisations completely for granted. We have received vaccines in childhood, take our own children to immunisation clinics and are vaguely aware that, even in adult life, there may be vaccines that may be of benefit. From time to time, a threatened "pandemic" briefly raises our interest in vaccines: the recent "bird flu" and "swine flu" developments are examples.

Many of us forget that the scourge of smallpox has been eradicated in association with vaccination programmes and that poliomyelitis is now extremely rare – hopefully poliomyelitis will be the second infectious disease where we will be celebrating eradication in the reasonably close future. Damage to unborn babies due to infection with German measles (rubella) during pregnancy is now very uncommon in many countries.

But are there more things we should know about vaccines? The answer is, most definitely, yes!

In our own very comfortable living environments, it often is not immediately obvious to us that others are not so fortunate. The major cause of death in childhood still is infectious disease. Many of the world's children do not have access to even the most basic childhood schedule of immunisations.

This includes immunisation for the prevention of tetanus (every individual in the world is susceptible to the toxins produced by this soil-borne organism unless they have been immunised); whooping cough (with a mortality which is higher the younger you are when you contract it – in the UK epidemic in the 1970s, one in 50 affected infants under the age of six months and admitted to hospital with whooping cough died); and diphtheria.

Measles is readily preventable by immunisation and, as a human pathogen reliant on passage from person to person for its existence, it is potentially eradicable.

However, measles remains a major cause of death in childhood in many underdeveloped countries – and is a major threat in countries where immunisation uptake is less than 85–90 per cent (even New Zealand remains marginal in its overall delivery of measles vaccine and some other vaccines to children).

Developments in immunisation and vaccine provision

There have been great strides made in the last 20 years in the delivery of vaccines. It is salutary to realise, from review of annual World Health Organisation reports, that as recently as 1980 only 20 per cent of the world's children received the required three doses of diphtheria, tetanus and pertussis (whooping cough) vaccine in early childhood. Through massive efforts by WHO, Unicef, the Global Alliance for Vaccines and Immunisation (GAVI) and other agencies in the provision of infrastructure and delivery programmes, just over 80 per cent of the world's children are now immunised in early life to protect them from these diseases. Why not 100 per cent?

There are many other vaccines which are also very important. Hepatitis B vaccine is now provided to all infants in many countries. One of its very important, but often unrecognised, effects is that it is actually an anti-cancer vaccine – because chronic infection with hepatitis B virus can lead to liver cancer in later life. We now have readily available vaccines against hepatitis A.

The human papillomavirus vaccine (HPV) is now available in many developed countries (including New Zealand) for administration to girls in their school years and has been shown, very clearly, to reduce the risk of cervical cancer. Cervical cancer has very high mortality rates in developing countries,

"Immunisation is of benefit to all. It is worth the investment of our time, our expertise and our dollars."

Professor Don Roberton: "Many of the world's children do not have access to even the most basic childhood schedule of immunisations."
Photo: Graham Warman

where it is difficult to provide effective cervical cancer screening services.

Vaccines against some of the organisms (*Haemophilus influenzae* type b; many types of *Pneumococci*; and some types of *Meningococci*) that are the major causes of devastating bacterial meningitis in children and young healthy adults (and some older adults) are available. However, these highly-effective vaccines have been costly to develop, are expensive to purchase and, therefore, are only readily accessible in relatively wealthy countries. They are needed, in much more inexpensive forms, for all of the world's children.

Gastroenteritis in early childhood is most often due to infection with a virus called rotavirus. Severe vomiting and diarrhoea in young and malnourished children living in poor countries, and without access to medical services, can rapidly lead to death. Rotavirus vaccines have been developed and licensed recently – but, again, are expensive and available in wealthy countries, not where the need is greatest.

Vaccines of the future

Potential vaccines under active development are those against important viral respiratory pathogens in early childhood, including respiratory syncytial virus (which causes bronchiolitis and pneumonia), and parainfluenza viruses (which cause croup and middle ear infections). Vaccines are being developed against *Helicobacter pylori* infection which causes stomach and duodenal ulcers, and there is a desperate need for effective vaccines to prevent hepatitis C infection, HIV infection and malaria.

What can we do to help? Research, the development of possible vaccine candidates, carefully designed clinical safety and efficacy trials, government agency support for immunisation programmes, and development of safe and cost effective manufacturing programmes for vaccines in developing countries are all vital components of the international effort to provide all of the world's children with the benefits that many of us take for granted.

Immunisation is of benefit to all. It is worth the investment of our time, our expertise and our dollars.

PROFESSOR DON ROBERTON
Pro-Vice-Chancellor Health Sciences
Dean of the Faculty of Medicine

[Professor Roberton trained and practised as a specialist in paediatrics. He has had a research and public health interest in vaccines and vaccine development for many years and, in March 2010, was awarded the Howard Williams Medal by the Paediatrics and Child Health Division of the Royal Australasian College of Physicians at the World Congress of Internal Medicine in Melbourne. The Howard Williams Medal is presented annually for the most outstanding contribution to paediatrics in Australia or New Zealand.]

Dr Kay Flavell: "I thought, 'a hermitage in the hills – that's what we need around the North and South Pacific'..."
Photo: Graham Warman

In-between places

Kay Flavell's belief in creative development led her to establish New Pacific Studio, with interdisciplinary artists' retreats here in New Zealand and California.

On a sunny day from a North Dunedin garden, Dr Kay Flavell can point out the farm where she grew up. The house is a speck high on the flanks of Signal Hill – between town and country, even now, 50 or so years later – where it was her job to muck out the pigs, she remembers: morning and night.

Flavell loved life on the farm, but resented any chore that robbed her of time away from her passion: reading. The Otago alumna and former academic has always adored books, realising at a young age that they "feed the imagination".

When weekly trips to the library could no longer sustain her voracious literary appetite, the young Kay became enterprising, bribing her brothers and sisters into giving her their library cards.

"That way I could borrow four or five books on each of their cards. I'd end up with about 30 books and dole out one each to them."

Flavell's love of literature led her to study languages at Otago, where she specialised in German after becoming interested in the way German literature was "tangled up" with philosophy and theories of culture. Flavell went on to a teaching position at Canterbury

University and then University College London. After a move to the US with her former husband in 1983, she took up a professorship in German literature at the University of California (Davis).

So far, so good for a respectable academic career, especially when the New Zealander was offered the associate directorship of a newly-created interdisciplinary research centre in humanities at Davis. Flavell seized the opportunity to create courses that better reflected a society on the edge of the Pacific, leaving behind the more traditional disciplinary phyla of the Eurocentric model frequently replicated in university structures.

"Oceania was described in the UCD curriculum as the art of non-literate peoples," recalls Flavell. "So I devised a new course called Art, Storytelling and Cultural Identity in Pacific Contexts. Suddenly I had 65 students and I told them to focus on seeing themselves as carriers of cultural heritage.

"Their first project was to interview someone who had passed on cultural information to them; the next to write about an artist or writer operating within their own cultural context. This approach enabled people from all cultural backgrounds, whether they were Thai, Tongan or boat people from Vietnam, to participate equally, and facilitated a cross-fertilisation of ideas from around the Pacific."

Despite the success of the centre and its programmes, Flavell grew restless. She undertook a master's degree in museum studies from Monash University while on leave from UCD, but realised that a career in another large institution would not satisfy her desire to reach out to communities.

"I think every community is full of opportunities for creative development and I wanted to find a way of working with people of all ages. So I reduced the idea of the university to what it started out as: a house of learning, a place where people can live and work and collaborate on projects with other institutions, libraries, schools and community groups."

At the same time Flavell started reading literature from both Eastern and Western traditions about retirement, which introduced her to the concept of a retreat – a hermitage.

"I thought, 'a hermitage in the hills – that's what we need around the North and South Pacific'; places where artists and writers can live together for a period, without a predetermined agenda, and simply focus on their work."

The result was New Pacific Studio, an international charitable organisation with a stated mission of promoting the creativity of people of all ages and encouraging the cross-fertilisation of ideas among creative communities.

To support this ambitious goal, Flavell sought to establish artists' retreats. In 2000 she purchased a dilapidated 1911 homestead at Mount Bruce, near Eketahuna in the Wairarapa, and set about restoring it. A second retreat, in an historic cottage in Vallejo, California, followed.

In 2006 the studio's environmental emphasis was expressed in the restoration of Mt Bruce's neglected Anzac memorial bridge, a landmark that has since become the focus of the local community's annual Anzac commemoration. Current initiatives include setting up Friends of Mauriceville, aimed at preserving local heritage buildings and family history, and developing a Wellington-Napier Scandinavian Trail through the now-vanished 70 Mile Bush, Te Tapere Nui a Whatonga.

"I feel that one of the crises in New Zealand is the emptying out of the countryside, the closure of country schools, the demolition of country halls. All that is left in huge areas of the countryside are cemeteries – even the churches get removed. This is the impetus to collecting local stories. It is about saving the stories and putting them back into the landscape."

In addition to rewarding projects such as these, Flavell's trans-Pacific dream has resulted in the short residencies of more than 100 artists and writers from around the Pacific region, many of whom have gone on to exhibit or publish the resulting work.

New Zealand writer Shelagh Duckham Cox, the first writer in residence at New Pacific Studio Mount Bruce, describes it as "a valuable and unique facility and part of the international circle of artistic retreats – the only one in New Zealand". She says it has not yet received the "recognition it deserves within this country".

Ten years on, Flavell believes the interdisciplinary, international artists' spaces she has helped establish will remain available for years to come, largely thanks to the support of the communities they have helped to enrich. She points out that New Pacific Studio continues to welcome New Zealand artists and writers, and encourages people and organisations to consider offering fellowships to enable those artists and writers to stay free.

"I think it's possible to put New Pacific Studio into a middle category of creative spaces: there are domestic spaces, there are institutional spaces and then there are spaces that can function in-between."

REBECCA TANSLEY

For further information, visit *www.newpacificstudio.org*

The young ones

The cultural history of adolescence and young adulthood in New Zealand is the subject of new research being undertaken by Dr Chris Brickell, the author of *Mates and Lovers*, an acclaimed history of gay New Zealand.

"It's often assumed that it was not until the 1950s that a significant generation gap emerged," Brickell says. "However, a similar gap is noticeable right back into the 19th century."

While the '50s saw the "bodgie" and "widgie" creating moral panics in milk bars, in the 1920s it was "flappers" and, in the previous century, "mashers", "dudes" and "dudines" who were shocking adults with their outlandish ways.

"A common thread through the eras is that young people were being seen as both overly hedonistic and at the leading edge of social change."

Brickell is looking at youth-related aspects within published works and other primary sources, and attempting to fill gaps through uncovering further resources that have so far been largely overlooked.

These include diaries, letters, journals and scrapbooks that reveal young people's experiences in their own words.

Brickell says he has already found gems such as the *New Zealand Truth* newspaper lamenting in 1914 that "for far too many young women, the mystery and secret of sex are no mystery or secret at all".

"While it is fascinating to delve into these deeply disapproving adult writings, I also want to balance this with the other sources that reveal what young people in different eras of our history were thinking and what their social experiences were."

Dr Chris Brickell: "A common thread through the eras is that young people were being seen as both overly hedonistic and at the leading edge of social change."

Goodness gracious greens

It is well known that isothiocyanates – compunds found in vegetables such as broccoli and watercress – have anti-cancer and anti-inflammatory properties. Less well known is how these isothiocyanates work.

During PhD study at the University of Otago, Christchurch, Kristin Brown revealed a pathway these compounds can influence and, in doing so, opens the door to novel treatments for several inflammatory diseases and cancer.

"We wanted to try to find out what human proteins react with isothiocyanates and how such reactions can reduce inflammation and kill cancer cells," she explains. Brown and colleagues in the Free Radical Research Group worked with scientists in Dunedin and Germany to discover that one particular protein – MIF – is very sensitive to isothiocyanates.

MIF is critically involved in diseases such as sepsis, cardiovascular disease, rheumatoid arthritis, inflammatory bowel disease and cancer, and its biological activity is destroyed upon exposure to isothiocyanates.

Kristin Brown and **Associate Professor Mark Hampton**: "Isothiocyanates have the potential to disrupt the pro-inflammatory and tumour-inducing action of the MIF protein."

"The results show that isothiocyanates have the potential to disrupt the pro-inflammatory and tumour-inducing action of the MIF protein," she says.

"This is valuable information for designing specific drugs that interrupt the action of MIF and provides us with an insight into the mechanism underlying the anti-cancer activity of isothiocyanates."

In addition to laboratory experiments, the Christchurch scientists also demonstrated that when people eat watercress, which contains significant amounts of isothiocyanate, the MIF protein circulating within their bloodstream was quickly inhibited.

Brown now has a postdoctoral Fellowship at Harvard Medical School.

Every stitch has a story

They may not be skeletons in the closet, but it seems that a good number of wardrobes are haunted by sartorial symbols of past triumphs and tragedies.

Dr Shelagh Ferguson: "We're finding all this rich, rich stuff about how people attach to and emotionally interact with material."

Department of Marketing consumer behaviourist Dr Shelagh Ferguson is keen to explore people's emotional attachments to clothes and has embarked on what is turning into an ambitious trans-Tasman project with former Otago colleague Dr Alistair Tombs, now based at the University of Queensland.

They started out wanting to understand why people become attached to one item of clothing and not another, but they soon found all sorts of fascinating insights.

"People have wardrobes for stuff they don't wear, but aren't prepared to throw out. When they talk about these clothes, it is this rich personal history that is about how they have used all this clothing to memorialise events.

"This is not clothing they like or necessarily something they think represents themselves, but they still keep it."

Stories have ranged from green PVC trousers – kept for bad taste parties – to an expensive designer outfit a woman wore just once for what she described as "the most awful date ever".

"So we're finding all this rich, rich stuff about how people attach to and emotionally interact with material," says Ferguson.

It is early days, but they have a number of willing interviewees, including a 95-year-old woman with a collection of fur coats.

Aside from learning more about the connection between emotion and purchasing decisions, Ferguson also hopes to be able to make a documentary film using the recorded interviews.

New hope for smokers

Around 21 per cent of New Zealanders still smoke and many of them are desperate to give up, but only 18 per cent are still not smoking a year after trying to do so.

Dr Brent Caldwell, of the Department of Medicine in Wellington, has investigated the acceptability of two new products with positive results. One is a generic Swedish product, snus, and the other is more recent, called Zonnic.

"Our research shows that smokers really liked these products which are packed in a sachet and they reduced cravings for tobacco. They're even more effective than nicotine gum available from pharmacies or GPs."

The study, recently published in *Nicotine and Tobacco Research,* investigated 63 smokers who used the two products and gum for two weeks each. Forty per cent ranked the Zonnic sachet as their favourite, 40 per cent chose snus and 20 per cent gum.

Dr Brent Caldwell: "The thing about snus and Zonnic sachets is that they're very easy to use ... [they] cut the craving for another cigarette."

The study shows that smoking is reduced through the use of all three products. On average, participants reduced smoking by 33 per cent when they used gum, 37 per cent with snus and 42 per cent in their fortnight on Zonnic.

"The thing about snus and Zonnic sachets is that they're very easy to use. You just put the flavoured sachet between the cheek and the gum and it cuts the craving for another cigarette," says Caldwell.

The researchers also found that Zonnic and snus have fewer side-effects than gum, particularly gastrointestinal effects.

Caldwell is now extending this research, by testing whether six months' treatment with a new Zonnic mouth spray improves quit rates one year later.

Past impacts, future clues

In a report published in *Science*, PhD Geology student Felix Marx has shown the evolution of modern whales was driven by a combination of food abundance and climate change.

"We know much about how ancient cetaceans evolved from four-legged 'landlubbers' into sea-going creatures, but many questions have remained about what drove the evolution of whales after their ancestors became aquatic."

Marx says the fossil record clearly shows that diatoms – tiny plants at the bottom of the marine food web – and whales rose and fell in diversity together during most of the last 30 million years.

"When diatoms are dominant in oceans, it creates a shortened food web, enabling more efficient foraging by whales. This allows them to grow larger, more abundant and more diverse."

Oxygen isotope records showed that fossil whale diversity was also linked to changes in climate.

"Both food abundance and climate change were, in turn, probably related to continental drift and changes in the Earth's geography, particularly the isolation of Antarctica from other continents about 30–40 million years ago."

This led to a new current spreading high levels of nutrients into the upper layers of the world's oceans, providing perfect conditions for diatoms to flourish.

"The evolution and diversity of whales may ultimately be the result of geological forces working at the heart of our planet. Discovering the past impacts of these changes will give us new tools to predict how future global changes might affect these animals."

Felix Marx: "The evolution and diversity of whales may ultimately be the result of geological forces working at the heart of our planet."

(The report was co-authored by Dr Mark Uhen, George Mason University, US.)

War babies speak up

In all the discussion and research over the 65 years since World War II, Pacific and Māori children fathered by American servicemen have not been able to tell their story. A project headed by Professor Judy Bennett (Department of History) will change that.

What started as research for a book on the environmental impact of World War II in the Pacific, soon switched focus as it became clear there were many children fathered by the US servicemen who served there, but no meaningful statistics.

"I thought this is a big gap. What has happened to them?

"Did they grow up sort of as orphans or were they accepted into their society?

"Were they stigmatised and how did they feel about themselves?"

Bennett and her associate investigators would also like to know their mothers' stories. Did they have further contact with the father or his family and how that was received?

Professor Judy Bennett: What happened to the Pacific and Māori children fathered by US servicemen during World War II?

"Most of them were fairly naïve young women and these fabulous Americans came with lots of money and lots of life and often became very close to their families."

There could be up to 2,000 children of American servicemen in Samoa and American Samoa alone, with hundreds more on other island groups.

"We would like to quantify it, but the most important thing is the way it's affected them," says Bennett.

"People have mostly been interested in the politics, the economics and the conflict itself, not so much in the human results. We count the dead, but we don't always count the living."

Simple rejection detection test

In a world first, University of Otago researchers have developed a simple urine test to detect kidney transplant rejection.

This is the result of a seven-year study of New Zealand, Australian and Swiss kidney transplant patients. When further testing is completed, it should mean the current test – an invasive biopsy procedure – could be replaced with a simple and accurate urine test, says study co-ordinator Dr Alex McLellan (Microbiology and Immunology).

"The main challenge for transplants is the host's immune system, which sees the graft as foreign and attacks the transplanted organ. Keeping this organ alive requires potent immuno-suppressive drugs," McLellan says.

As four out of every 120 New Zealanders will lose their kidney transplant within the first year, detecting rejection early is essential to enable immediate intervention with additional drugs to preserve kidney function and prevent transplant loss.

Dr Alex McLellan: He hopes the new urine test will improve diagnostic monitoring during post-kidney-transplant hospitalisation.

The new urine test detects one of the molecules – Major Histocompatibility Complex (MHC) – that is released from the kidneys into urine during transplant rejection. The study showed that levels of MHC in the urine soared during transplant rejection and could be detected days before confirmation of rejection using the standard biopsy method. Patients testing positive for MHC had a greater than 90 per cent chance of rejection.

McLellan hopes the test, which is unlikely to become available for some years until further investigation has been done, will improve diagnostic monitoring during post-transplant hospitalisation. It would also be valuable to patients at home as a urine dip-stick test for long-term monitoring of transplant status.

Mysterious and multicultural

The provenance of a heritage collection of harakeke and whaririki (New Zealand flax) plants in the Dunedin Botanic Garden poses a mystery. Are they South Island (Te Waipounamu) varieties, distinct from the National New Zealand Flax Collection housed at Landcare Research in Lincoln?

Drs Debra Carr and Bronwyn Lowe (Clothing and Textile Sciences, University of Otago), Tom Myers (Botanist, Dunedin Botanic Garden) and Rua McCallum (Ruaimoko Productions and Consultancy Ltd) examined the plants in several ways. It is this multilayered approach with its considerable community input that makes the research project unique.

At the outset, a consultation hui was held to discuss how the plants would be investigated. A focus group was established (the Kaimahi Harakeke) comprising Māori weavers, horticulturalists and a kaumatua. Historical records were searched to determine the likely origins of the whole collection. The Kaimahi Harakeke selected 24 plants of particular interest from among the 214 in the collection and these were then investigated using botanical, textile science and Māori weaving techniques.

Weavers prepared fibre from harvested leaves, rating the weaving qualities of both leaf and fibre. Differences among plants were identified using multivariate analysis, comparing botanical, textile science and weaving assessment measures of leaf and fibre.

The combination of historical, botanical, mātauranga (Māori knowledge) and textile science research has developed new methods and insights, as well as highlighting multidisciplinary challenges. While results indicate some plants may be unique to Te Waipounamu, the research has raised new questions yet to be answered.

Tom Myers, Dr Bronwyn Lowe and **Rua McCallum:** They have been looking at the provenance of the Dunedin Botanic Garden flax collection.

Pressure on food processing

A means of food preservation that maintains nutritional benefits, taste, colour and appearance while at the same time keeps the product stable, safe and easy to use is something of a holy grail for food scientists.

Professor Indrawati Oey (Department of Food Science) is championing the development of high hydrostatic pressure (HP) processing as a way of killing bacteria and extending shelf life. Pre-packed food products are put under hydrostatic pressure above 1,000 bar, or 1,000-times the atmospheric pressure.

"The beauty of this technique is that we can extend the shelf life of the product by inactivating micro-organisms and undesirable enzymes while we keep the initial taste, flavour, colour and nutrient content," she explains. "Another feature of HP is that, as well as preserving the food, high pressure can make important changes to its quality, functionality and usability by activating and inactivating different naturally-occurring enzymes and chemical processes in the food."

Professor Indrawati Oey: She is championing the development of high hydrostatic pressure processing as a way of killing bacteria and extending the shelf life of food.

Oey was previously based in Belgium and involved in European projects to develop the technique. It has become more intensively studied for industrial application in food processing and preservation in Europe, Japan and America, and interest in the technique is also significantly growing in Australia and New Zealand.

She is keen to develop industry partnerships here and collaborate with other University departments, as well as Crown Research Institutes such as Plant and Food Research.

"My role is as an industrial advisor – helping them have more profit by producing safe and better quality food product by adopting this new technology."

Physics helps finance

The worlds of physics and finance may appear to lie in different universes, but Accounting and Business Law lecturer Dr Michael Falta believes physical sciences have much to offer accounting.

Falta is using his background as a natural scientist to develop ways of modelling complex economic systems and to analyse the way business performance and failure is predicted.

"The focus must be not on method, in the first place, but on a careful analysis of the environment in which the business enterprise lives and what relevant information can be captured about its inner life."

For example, a construction company operates on a project-by-project basis, whereas a bank has a regular flow of customers.

Current models also lack the ability to incorporate feedback and don't adapt to meet the company's changing circumstances. "Business failure is a process, not a jump from being in to being out of the game."

Falta says we are at the beginning of developing ways to model complex systems that are capable of accommodating the many factors that go into the business process.

For example, producing apples for sale involves diverse factors – from growing, picking and transporting fruit to seasonal price variations driven by supply and demand.

"You have, on one side, the physical world which determines the growth and, on the other side, the financial world. They both interact. But how do you model all that?

"I am developing some possibilities through my research and I plan to present these results in the near future."

Dr Michael Falta: He is using his background as a natural scientist to develop ways of modelling complex economic systems.

Aphid genome uncovered

University of Otago researchers, led by Associate Professor Peter Dearden, are part of an international group of more than 200 researchers from 15 countries that has published the complete genome of the pea aphid. This achievement may lead to new weapons in the fight against a major pest that has significant economic impacts on agriculture.

A genome contains all the hereditary information of an organism and includes its genes and the non-coding sequences of the DNA.

Dearden (Genetics Otago) says aphids are both a pest and a biosecurity risk to New Zealand, with the vast majority of aphids here being introduced species. They also often carry plant viruses that can affect crops.

"This genome sequence will improve the biological understanding of these insects. For instance, it will contribute towards greatly reducing the economic impact these insects currently have on our agricultural economy by enabling us to develop tailor-made insecticides," he says.

Associate Professor Peter Dearden: "This genome sequence will improve the biological understanding of these insects [pea aphid]."

Dearden explains that, biologically, aphids are interesting insects.

"They are capable of both sexual and asexual reproduction and, when reproducing asexually, a female aphid contains within its body its children, which then contain its grandchildren – so-called telescoping generations.

"While it has a smaller genome than humans, the aphid genome is still 464 million base-pairs long, which helps explain why unlocking the genetic secrets of this tiny creature still required a giant international scientific effort."

Dearden's group, which included Drs Elizabeth Duncan, Megan Wilson and James Smith, contributed to annotating genes, particularly focusing on genes involved in the embryonic development of aphids.

The road to 9/11

It is widely believed that the world's current security environment was decisively shaped by 9/11 and America's reaction to that tragedy.

That view is profoundly mistaken, according to Robert Patman, Professor of International Relations and director of the Master of International Studies programme at the University of Otago.

In his new book, *Strategic Shortfall: The Somalia Syndrome and the March to 9/11*, Patman locates the origins of 9/11 in the increasingly globalised security context of the early post-Cold War period.

He argues that the disastrous US-UN humanitarian intervention in Somalia in 1992–1993 was a defining moment for US foreign policy.

It generated the Somalia Syndrome – a risk-averse approach to intervention in civil conflicts, especially if there might be US casualties – which had significant international consequences.

Patman believes the Somali Syndrome emboldened the Osama bin Laden network to gradually escalate its terrorist campaign against the US.

Policy choices made between 1993 and 2001 created a strategic shortfall that enabled al Qaeda to grow to the point where it was capable of mounting the devastating terrorist attacks of 9/11.

"America's post-Somalia approach was supposed to be in the interests of national security," says Patman. "Instead it came back to bite them."

Turning a blind eye to the expansion of Islamic extremism in the 1990s has ultimately made the world a more dangerous place, he says.

Professor Robert Patman: He believes that the Somalia Syndrome emboldened the Osama bin Laden network to gradually escalate its terrorist campaign against the US.

Laws of the future

"Designer babies", robotics, nanotechnology, artificial intelligence … Such emerging technologies present law-makers with enormous challenges and, as Associate Professor Colin Gavaghan acknowledges, generate far more questions than answers.

When Associate Professor Colin Gavaghan first read the job description for Director of Otago's Centre for Law and Policy in Emerging Technologies, he was already worrying about the consequences of bringing fMRI scans into the courtroom. The University had in mind its work on "designer babies" while the Government thought "nanotechnology".

By definition, a centre focusing on the rapid and unpredicted turns of technological progress comes with seriously uncharted territory. And when the issues include "what happens when computer chips become so small they can fit in a blood cell?", the prospect of trying to assert control via the steady-handed rule of law is either heroically ambitious or fundamentally futile.

It's a field, Gavaghan concedes, "that's generating many more questions than answers right now". Which is precisely the kind of rich academic challenge that would make him pack up his office at the University of Glasgow, where he taught ethics and medical law, and forge the next chapter of his career at this southern university.

"Fortunately, my family loves Dunedin," Gavaghan reports. "When we came for our initial visit my partner, Carol, commented, 'well you had better get the job, because I'm moving here anyway'."

The sheer scale of the task at hand is a significant reason for the centre's existence. Established through the Leading Thinkers Initiative, the centre is supported by an endowment from the New Zealand Law Foundation, which had identified a yawning gap in New Zealand's regulatory landscape. In announcing the new centre and position, Law Foundation chair Warren Deuchrass commented that the endowment was made "to establish a framework for the systematic and comprehensive evaluation of emerging technologies, and to build New Zealand's legal and policy capability in these developing areas. Dr Gavaghan and the Centre for Law and Policy in Emerging Technologies will provide that".

In other ways, too, the centre was born from a legacy of lingering questions and loose ends as it picks up, somewhat, from where Otago's Human Genome Research Project (HGRP) left off. That team, led by Faculty of Law Dean Professor Mark Henaghan and including experts in genetics, paediatrics, law, philosophy and Māori, was charged with examining the science, ethics and legal tools surrounding genetic interventions. The meeting of minds is visible. The HGRP report, "Choosing Genes for Future Children", echoes, in many respects, Gavaghan's 2007 book *Defending the Genetic Supermarket: Law and ethics of choosing the next generation*.

Gavaghan, like the Otago scholars, argues for a measured approach towards pre-implantation embryo selection that does not throw the "baby" – the potential to spare families the prospect of raising children with devastating genetic conditions – out with the "bathwater" of blind social panic.

And Gavaghan demands that audiences think very critically about who is being served by pre-implantation genetic technology. "Don't forget that, for the potential life, the difference isn't between being born with a genetic condition or being born without one. It's a difference between being born – having a life at all – or not."

He sympathises with members of the Deaf community who take exception to "deaf embryos" being excluded from implantation. "Does this suggest that being deaf is essentially a life not worth living? Many deaf people see themselves less as disabled as belonging to a linguistic minority." It's an argument that can be applied to many forms of disability and disease, he comments, but one that is little acknowledged in law.

Associate Professor Colin Gavaghan: "Is having no idea about the level of risk a reason to prohibit something?"
Photo: Alan Dove

As an enthusiastically tuned-in commentator and contributor to social debate, Gavaghan's care for placing individual human rights at the centre of ethical debates is an ongoing hallmark of his approach. In acknowledging law's constant tension between enabling maximum human freedoms and protecting society at large, he cautions against the trap of treating people as populations to be managed, rather than free and intelligent individuals whose rights must be guarded.

Indeed, this focus earned him headlines recently when he argued against prevailing medical advice that pregnant women should abstain completely from alcohol. Given the absence of any supporting evidence that light drinking (no more than one to two glasses of wine per week) harms the child, he describes the official advice as unfair to women, paternalistic and a violation of the concept of informed consent in medical care.

And his recent research into the future of neural scanning technology in the pursuit of justice raises similar concerns.

"A body of evidence is amassing that it may become possible to detect not only people's desires, but even their intentions to behave in a particular way through fMRI scanning. If you think through the legal ramifications of this, they are extraordinary.

"Imagine if it were possible to tell whether a paedophile being released into the community still harboured desires to offend. The pressure to use this information to keep that person imprisoned would be overwhelming. But there's a big difference between a paedophile – someone who is sexually attracted to prepubescents – and a child abuser – someone who acts on those desires.

"If we could tell in advance that someone harboured the intention to offend, then that would be quite a different situation to the one where someone was merely attracted or aroused by the idea, but where they might well choose not to act on it. My worry is precisely that this distinction could be eclipsed and the space in which we make moral decisions squeezed out of existence."

But, he warns, there is an important difference between intention and behaviour. Furthermore, morality and laws rest on the idea that, even when you are tempted to do something wrong, you desist.

"Law-makers would start with universally hated figures – paedophiles and terrorists. But once you've established the principle that individual rights can be displaced in the name of a perceived greater good, then you've got the conditions for some pretty serious abuse."

At the Centre for Law and Policy in Emerging Technologies, further exploration in this area will take its

Gavaghan cautions against the trap of treating people as populations to be managed, rather than free and intelligent individuals whose rights must be guarded.

place alongside a research agenda that includes biotechnology, alternative bio-energy, information and communication technologies, robotics and artificial intelligence.

Which all follow after Gavaghan's first assignment: nanotechnology.

New Zealand has been investing heavily in its nanotechnology sector in recent years, generating findings from ways to remove pollutants from the atmosphere to innovations in cancer therapy. Worldwide, new applications for the technology are announced daily, with belief in its health, environmental and commercial benefits reaching fever pitch in some quarters.

So it's little wonder the government was quick to tap into Otago's developing expertise in the legal implications for this field. Within weeks of arriving, Gavaghan had landed a contract to provide a review of the laws that might apply to nanotechnology in New Zealand "and find out how well we're covered".

Some of our laws go some of the way, he believes: the Hazardous Substances and New Organisms Act, for example, provides some parameters for managing new products and risks.

But it's a topic that touches upon bigger questions regarding the role of law in society.

Nanotechnology deals with particles in their tiniest proportions: single atom, or molecule, at a time. In the brain-splitting way the tremendous scale of the universe defies comprehension, nanotechnology requires these mental contortions in reverse. Each manipulable unit may be hundreds of thousands of times smaller than the width of a strand of hair. It can be easily inhaled and absorbed: tiny enough, even, to squeeze between our cells.

By breaking materials down to their smallest fraction, it might become possible to reconstruct them in new ways, as new material. "It's literally alchemy," says Gavaghan. And, at these dimensions, he explains, "particles may behave in quite unpredictable ways".

Without even needing to buy into "grey goo" doomsday scenarios (where self-replicating molecular forms are feared to consume the Earth), the reality, says Gavaghan, "is that we have very little idea what this might mean for human health or the environment".

"But," he asks, "does it automatically follow that we should follow the precautionary principle? Is having no idea about the level of risk a reason to prohibit something?"

The problem with worst-case scenarios – be it Facebook causing delinquency or the Hadron Collider sucking us into a black hole – suggests Gavaghan, is that the mere suggestion of a catastrophic outcome is enough to capture the imagination and generate fears of risks not worth taking.

By comparison, issues around genetic selection are simple. "The technology might be new, but the questions it raises are not.

"They might be about fairness, identity, utility, autonomy, what we owe future generations. We can think of them and list them and come up with a process for working through the ethical issues and make some sort of sense of the conclusions. And we have a pretty good idea what the different outcomes will look like. But with something like nanotechnology – or some of the new neurotechnologies – there's still so much we don't know about the science and it's difficult to come up with the programme of empirical studies that would help quantify the claims and concerns."

One must also be mindful of how we position ourselves in terms of our international peers. "If our regulatory framework is not broadly in line with other countries', our scientists and businesses will simply take their work to the most supportive environment."

Given this, what can the law hope to achieve?

First, suggests Gavaghan, we need to decide how we want to think about the problem. "Do we want protection and control, or do we want information and the freedom to make our own decisions? Do we want to prioritise innovation or err on the side of caution? To some extent, it comes down to the political zeitgeist of New Zealand."

And that, like much else on his to-do list, is something Gavaghan "is very much looking forward to finding out about".

NICOLA MUTCH

Marine Sciences' new vessel *Beryl Brewin* arrives at Portobello.

New boat for Marine Science

An 11-metre alloy boat secured by the University's Department of Marine Science is freeing up its larger boat, the *Polaris II*, for longer, more demanding research expeditions.

The vessel, named for her benefactor, the late Beryl Brewin, arrived in March and is being used to meet the high demand for local, short expeditions to support regular teaching requirements at the University.

Beryl Brewin worked as a zoologist at Otago in the late 1930s and was also a regular visitor to the Portobello Marine Laboratory in her later years. The boat has been fitted out to carry up to 20 people in enclosed waters such as Otago Harbour and up to eight people during coastal work outside the harbour.

Formerly used for mussel industry work around Picton, the *Beryl Brewin* is equipped with a diving platform and hydraulic systems to enable light equipment to be deployed. It is also capable of light dredging work.

Indigenous oral health project funded

University researchers recently gained significant funding for a major intervention study aimed at improving Māori children's oral health.

As part of an international collaboration, Ngāi Tahu Māori Health Research Unit Director Associate Professor John Broughton is leading a $2.35 million, five-year research project trialling an oral health intervention with mothers and children in indigenous communities.

Māori and other indigenous children tend to have higher rates of tooth decay in early childhood, often causing great suffering and frequently requiring treatment under general anaesthesia.

The intervention will run in Australia, Canada and New Zealand, from birth for the first three years of the participating child's life.

The New Zealand arm of the project involves Associate Professor Broughton working in a research partnership with Raukura Hauora O Tainui, a Māori health provider in the Waikato-Tainui tribal area.

In the project, dental care will be provided to mothers during pregnancy, fluoride varnishes will be applied to children's teeth, and mothers will receive ongoing guidance and support for maintaining good oral health in their children.

The initiative is funded through the International Collaborative Indigenous Health Research Partnerships (ICIHRP) scheme, which is a joint initiative of the Health Research Council of New Zealand, the Australian National Health and Medical Research Council, and the Canadian Institutes for Health Research.

Chair in Global Health established

The University's recently established Centre for International Health is to benefit from the addition of a further professorial position, thanks to the generosity of a Dunedin couple.

The McKinlay Chair in Global Health has been established through a gift by Stuart and Marylyn McKinlay and will complement the existing McAuley Chair in International Health held by Professor Philip Hill.

The Centre for International Health's aim is to contribute to improving the health and well-being of people in developing countries through research and postgraduate training.

Announcing the endowment of the new chair, Vice-Chancellor Professor David Skegg said adding another senior academic post to the centre would enhance its capacity to carry out research relevant to the health needs of

less developed countries in the Pacific and in other parts of the world.

"Under the leadership of Professor Hill, the new centre has already made considerable progress. This second position, to which another experienced researcher and teacher will be appointed, will allow the centre to achieve its full potential in discovering ways to improve health in developing countries."

Both the centre and the McAuley Chair were established in 2008 following a donation by the Sisters of Mercy made through Mercy Hospital Dunedin.

Music gains world-class console

A new world-class music console at the Department of Music's Albany Street Studio is helping Dunedin to strengthen its place as a formidable force in music production.

The new console – the only one of its type in New Zealand – significantly increases the studio's capability as a major recording studio for albums and for many types of live performances.

Manufactured by UK company Solid State Logic, the console can record from nearly 100 "inputs", or microphones, in a band or orchestra at once.

Its capability to be linked to high-speed broadband networks will allow "real-time" collaborations by groups of musicians in Dunedin and a film or music studio in any other major city in New Zealand or abroad.

The desk is being used for staff and postgraduate research in performance and, in particular, for the new Doctor of Musical Arts (DMA) in Studio Production. It will also be used in teaching undergraduate students.

In May, members of the Department of Music launched the New Zealand Music Industry Centre (NZMiC) in collaboration with local music company DunedinMusic.Com Ltd. NZMiC's aim is to act as a mechanism through which the Department of Music can engage with the music industry, and foster research outputs and the recording of albums.

The University's new music console is the only one of its kind in New Zealand.

Through the initiative, the studio will be made available for bands or music groups who wish to record there. There will be collaborations with performers and recording artists, and the development of a research-based context for University-industry projects and partnerships.

State-of-the-art dental simulation lab

The School of Dentistry now has a new dental simulation laboratory equipped with the state-of-the-art teaching technology.

Each bench in the 73-chair lab features a mannequin torso with removable jaw, as well as a video screen and fibre-optic cables on each hand-piece.

The screens provide Bachelor of Dental Surgery and Bachelor of Oral Health students with live-stream video and audio to closely follow teaching demonstrations as they occur.

In addition, the lab, which is one of the biggest of its type in the world, will also be used for the continuing education of practising dentists from around the country. It also includes a digital x-ray unit.

Appointments

Professor **John McCall** as the University's first McKenzie Professor of Clinical Science. A leading surgeon and researcher, Professor McCall recently returned to Dunedin after more than a decade as a transplant and hepatobiliary surgeon in the New Zealand Liver Transplant Unit.

Professor **Stephen Duffull** as Dean of the School of Pharmacy. A leading pharmacometrics researcher, Professor Duffull joined the University in 2006 when he was appointed to a new Chair in Clinical Pharmacy. He succeeds Professor Ian Tucker who led the school for more than a decade.

The simulation lab will be of benefit to students and practising dentists.

Professor **Marie Johannesson** to the Chair in Paediatrics and Child Health at the University of Otago, Wellington, and as head of department. Professor Johannesson comes from Sweden's Uppsala University. Her research interests include cystic fibrosis and she is a past president of the European Cystic Fibrosis Association.

Professor **Gareth Jones** as the new director of the University's Bioethics Centre. Professor Jones takes up the position after recently stepping down as the University's Deputy Vice-Chancellor (Academic and International) after five years in that role.

Dunedin School of Medicine Dean Dr **John Adams** as chair of the New Zealand Medical Council. Dr Adams succeeds Professor John Campbell (Medical and Surgical Sciences) who held the position for the previous eight years.

Obituaries

Emeritus Professor **Henry Jeffray (Jeff) Weston** (83). A former Professor of Paediatrics and Child Health at the University of Otago, Wellington, and pioneering defender of children's rights. Appointed to the Chair in Paediatrics at what was then the Wellington Clinical School in 1975, Professor Weston earned a reputation as an excellent teacher and popular and effective head of department. After retiring in 1991 he retained a close association with the school.

Professor **George Davies** (88). An internationally influential champion of preventive oral health care, Professor Davies was Head of Preventive, Public Health and Children's Dentistry at Otago from 1948–1964. During his tenure he introduced several innovative programmes. He went on to become professor and dean of the Faculty of Dentistry at the University of Queensland in 1964 and later its academic deputy vice-chancellor.

Emeritus Professor **Raymond (Ray) Stone** (80). The first and only full Professor of French at the University (1969–85), Professor Stone was also vice-chairman of the University Senate from 1982–84. A scholar and teacher of renown, the French Government in 1982 honoured him with the award of Chevalier des Palmes Académiques.

Achievements

Alexander McMillan Professor of Childhood Studies and Professor of Psychology **Gordon Harold** has been appointed an Honorary Professor in Law at Cardiff University. He will provide guidance to Cardiff's law school on new developments surrounding the family court system and pertaining to children's well-being and mental health.

Geology Emeritus Professor **Rick Sibson** has received the Wollaston Medal for 2010, the Geological Society of London's top award, given to geologists who, through research, have had a significant influence in either or both "pure" and "applied" aspects of the science.

Health Sciences Pro-Vice-Chancellor Professor **Don Roberton** was awarded the Howard Williams Medal by the Paediatrics and Child Health Division of the Royal Australasian College of Physicians. The medal is presented annually for the most outstanding contribution to paediatrics in Australia or New Zealand. [See page 24]

Associate Professor **David Gerrard** received a lifetime achievement award in the 2010 New Zealand Sport and Recreation Sector Awards in recognition of his contributions to sports medicine and leadership in New Zealand's Commonwealth Games and Olympic Games missions.

Fellowships/Scholarships

Five emerging Otago scientists were awarded three-year postdoctoral fellowships by the Foundation for Research, Science and Technology to undertake research projects. They are Dr **Martin Hohmann-Marriott** (Biochemistry), Dr **Daniel Leduc** (Marine Science), Dr **William Rayment** (Marine Science), Dr **Geoffrey Rodgers** (Orthopaedic Surgery and Musculoskeletal Medicine, UOC) and Dr **Miriam Sharpe** (Biochemistry).

Zoology master's candidate **Matthew Wylie** has been awarded a Te Tipu Pātaiao Fellowship from the Foundation for Research, Science and Technology. He will study the reproductive physiology and life cycle of the giant kokopu, a native fish and tāonga species whose juveniles contribute to the annual whitebait run.

Emma Dixon (BSc(Hons) 2009) gained a three-year William Georgetti Scholarship to attend Oxford University, where she plans to study for a doctorate in biochemistry.

Honorary Degrees

In May, the University conferred two honorary doctorates. Emeritus Professor **Jim Flynn** received the honorary degree of Doctor of Science. Professor Flynn headed the Department of Political Studies from 1967–97 and has made hugely influential contributions to the field of intelligence research. Noted New Zealand artist **Marilynn Webb,** who has been active in art and art education for more than half a century, received the honorary degree of Doctor of Laws. Ms Webb has been exhibiting her work nationally and internationally since the 1960s and was Frances Hodgkins Fellow in 1974.

Behind a great man …

Elizabeth Hocken (1848-1933), Photographer unknown, Hocken Collections, Uare Taoka O Hakena, University of Otago (S07-122).

If ever there were a figure long overdue for a thesis to be written about her, it must be Bessie Hocken, the esteemed and beloved second wife of Dr Thomas Hocken. For when Elizabeth Mary Buckland married the widowed surgeon and collector in 1883, he gained his greatest assistant, supporter and friend.

It was Bessie, for example, who translated Abel Tasman's diaries from old Dutch. She was the accomplished artist who meticulously copied early colonial artworks, enabling keys to be added and the details to be enumerated. She was a talented photographer and prolific sketcher, recording botanical specimens, early New Zealand buildings and Māori artefacts, among much else. A regular exhibitor at the Otago Art Society, a watercolour (possibly the framed kowhai flowers held by the Hocken Collections) earned her an award at the South Seas Exhibition.

Bessie was born into a wealthy Auckland family, several members of whom relocated to the south. Landowners and merchants, the family name is preserved for posterity in Buckland's Beach near Auckland and Buckland's Crossing in Otago, while her sister Caroline and niece Jessie Buckland gained renown as prize-winning photographers.

Bessie had travelled widely, having been educated in Europe and listing her normal place of residence on her wedding certificate as London.

Thus Bessie – with her intelligence, talent, interests, connections, social graces, and the fact she bore Hocken his only child, Gladys – was believed to have "made up to him many times over for the humiliations and suffering of his first marriage"[1], to the tragic, distracted and probably alcoholic Julia.

Proficient in French and German, her language skills assisted Dr Hocken's communications with an international network of academics and enthusiasts. As well as translating his letters, her German skills served as the language bridge enabling Hocken to converse with Greek academics in Athens in 1902.

Just as Bessie's contributions feature widely (if mostly unacknowledged) in Hocken's publications, her own comprehensive workbooks were also enriched with Hocken's annotations and comments.

Elizabeth Hocken (née Buckland), Kowhai and perching orchid (Earina autumnalis), c. 1890, watercolour on paper, 353 x 254mm, Acc. No:.73/28. Bequeathed by Mrs G le François, South Africa, 1973, Hocken Collections, Uare Taoka O Hakena, University of Otago.

Although Hocken was scarce in his formal acknowledgement of his debt to Bessie, he appears to have lavished her with praise in private, his affection recorded in letters and cards held in the Hocken Collections. A birthday card, 11 years after their marriage attests, "Another year of happy married life has been given to us. I hope that many another is in store for us in which you will continue to beautify and make our home all that you have made it in the past."[2]

NICOLA MUTCH

References

Facer, A, "Mrs Hocken Requests" in *Mrs Hocken Requests: Women's Contribution to the Hocken Collection*, Hocken Library, University of Otago, 1993.

Hocken, A, *Dr Hocken of Dunedin: A Life*, East Riding Press, Oamaru, 2008.

[1] Hocken, A, Dr Hocken of Dunedin: A Life, East Riding Press, Oamaru, 2008, p154

[2] Hocken, ibid, p154

Elizabeth Hocken (née Buckland), Old mission station at Waikouaiti, 1887, watercolour, 270 x 700 mm, Acc - 12,219 , Hocken Collections, Uare Taoka O Hakena, University of Otago.

HOCKEN GALLERY EXHIBITIONS

Until 17 July

Forever After: Conversations with the Past

An exploration of copying and appropriation in art, including works by Bessie Hocken (originals and copies).

The Labours of Herakles

An exhibition of photographs and etchings by Marion Maguire, casting the archetypal Greek hero as a New Zealand colonist.

31 July – 16 October

100 Up: A Snapshot of Dunedin Life 1910 and 2010

Dunedin of 1910 and the Dunedin of 2010. What has changed and what has stayed the same?

Hauaga

The Art of John Pule

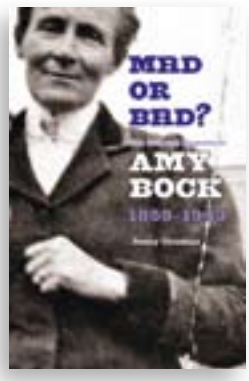
Edited by Nicholas Thomas, June 2010

Born in a tiny village in Niue, John Pule is one of the most significant artists living and working in New Zealand today. From the mid 1990s, his enigmatic paintings attracted great interest and came to be widely shown nationally and internationally.

In his work Pule has been fascinated by the Polynesian past and present, but he ranges far more widely, responding both to ancestral culture and to the global terror and violence of our time.

Hauaga is the first book to deal with John Pule's art. It brings together his drawing, print-making and writing – he is the author of two novels and several volumes of poetry – as well as his painting. Essays by Gregory O'Brien, Peter Brunt and Nicholas Thomas consider his formation as a writer and artist, his meditations on life and loss, and the extraordinary architecture of his visual art. John Pule himself speaks himself through an extended interview and in a series of extracts from his poetry and prose.

Hauaga has been published to coincide with the first major touring survey exhibition of Pule's work, curated by the City Gallery Wellington.



Mad or Bad?

The Life and Exploits of Amy Bock 1859–1943

Jenny Coleman

Amy Bock's life has been the inspiration for plays, books, a television programme, music, poems, exhibitions and more. But *Mad or Bad?* is the first comprehensive biography of Bock, a most daring, duplicitous and talked-about con artist.

Born in Hobart, Tasmania, Bock taught in Victorian schools for six years until she was asked to resign. She migrated to New Zealand in 1884, possibly to attempt a new start. Assuming a dazzling array of personae and remaining conveniently itinerant, she then pursued a consistent course of petty crime for the next 25 years. While she gained notoriety in 1909 for her impersonation of a man and marriage with an unsuspecting woman, the author shows how her whole life was one of fraud and misrepresentation.

In presenting her colourful and chequered life, this biography allows the reader to judge whether Amy Bock was essentially mad, or just bad.

Beyond the Scene

Landscape and Identity in Aotearoa New Zealand

Co-edited by Janet Stephenson, Mick Abbott, Jacinta Ruru

What contribution does landscape make to our sense of identity?

In this volume well-known writers, from a range of disciplines, explore the many meanings of landscape. Each chapter focuses on a different part of the country, from a different point of view – including farmer, poet, lawyer, landscape architect, planner, film critic; ranging from Auckland's southern suburbs to a Waikato farm, from Taranaki's iconic volcano to films of Otago. Together, they investigate the relationship landscape has to identity, community and psyche.

The co-editors of *Beyond the Scene* are all based at the University of Otago. Janet Stephenson is a senior research fellow at the Centre for the Study of Agriculture, Food and Environment; Mick Abbott is senior lecturer and environmental designer at the Department of Design Studies; Jacinta Ruru is a senior lecturer in the Faculty of Law.

Doing Well and Doing Good

Ross & Glendining: Scottish Enterprise in New Zealand

S R H Jones, February 2010

At one time New Zealand's largest manufacturer and home of many popular brands – Aotea knitting wools, Roslyn knitwear and swimsuits, Tasman blankets – Ross & Glendining was initially a drapery importing business founded by two Scotsmen in Dunedin during the gold rushes.

It opened branches throughout the country, with warehouses in all the main centres, and operated for more than a century.

Business historian S R H Jones has written the company's history, drawing on the business archives of the Hocken Collections at the University of Otago.

This is very much a story for today, charting the development, expansion, decline and demise of a manufacturing behemoth. Throughout its transition from small importer to large manufacturer, the superb management team of John Ross, Robert Glendining and George Hercus coped with the vicissitudes of change, from global depression in the 1880s to World War I. By the time they had passed away, the firm was well set up and able to survive the 1930s depression, the flattening of a branch during the 1931 Napier earthquake, and the harsh post-World War II trading environment.

Sadly, the empire fell in the 1960s just as it had modernised and restructured – there was an aggressive takeover bid, asset stripping and closure. This is but one aspect of a fascinating book, which also traces the journey from importing colony to self-reliance based on wool.

For further information:
Otago University Press
Email *university.press@otago.ac.nz* or visit *www.otago.ac.nz/press*

Books by Otago alumni

The Earl is in ... 25 Years of the Earl of Seacliff, edited by Mark Pirie, Earl of Seacliff Art Workshop, Paekakariki, 2009.

Jandal Prints on the Globe: Capturing the Overseas Experience, edited by Jane Gilkison and Rachel Pether, Stead and Daughters Ltd, October 2009.

Containment, by Vanda Symon, Penguin New Zealand, December 2009.

Mothers Raising Sons, by Nigel Latta, HarperCollins Publishers, New Zealand, 2009.

Coming Back to Earth: From Gods to God to Gaia, by Lloyd Geering, Polebridge Press, Oregon, USA, 2009.

Sizing Up the City: Urban Form and Transport in New Zealand, edited by Philippa Howden-Chapman, Keriata Stuart and Ralph Chapman, Steele Roberts, February 2010.

International Consumer Behaviour in E-Commerce: Online Auction Web Site Acceptance in New Zealand and Germany, by Stefan Bodenburg, Tectum Wissenschaftsverlag, Marburg, Germany, January 2010.

Moa Sightings Vol I, II, III, by Bruce Spittle, Paua Press, January 2010.

Such is Life: A Close Encounter with Ecclesiastes, by Lloyd Geering, Steele Roberts, Wellington, 2010.

Yusi 'Upu Samoa: The First Samoan-English Dictionary Written by a Samoan, by Papa'ali'i Dr Semisi Ma'ai'i, Little Island Press, 2010.

From the Other End of the World: Memories of Post-War Immigrants to New Zealand from Great Britain, edited by R K Dean, GWW Services, April 2010.

Tug of War: The Tension Concept and the Art of International Negotiation, by Tony English, Common Ground Publishing: Melbourne, May 2010.

Taking the Crime Out of Sex Work: New Zealand Sex Workers' Fight for Decriminalisation, edited by Gillian Abel with Lisa Fitzgerald, Catherine Healy and Aline Taylor, Policy Press, UK, May 2010.

Past Perfect, by Karen Zelas, Wily Publications Ltd, Christchurch, May 2010.

The Sheep on the Fourth Floor, by Leonie Thorpe, HarperCollins NZ, April 2010.

Alumni:

if you have published a book lately email the editor at **mag.editor@otago.ac.nz**

Alison Finigan:
Head of Alumni Relations

A word from the Head

I am often approached by alumni at functions in New Zealand and abroad with questions about how to purchase Otago memorabilia.

It seems there is a growing interest amongst alumni of all ages in wearing their hearts on their sleeves – or, more literally, their chests – when it comes to showing their affection for their alma mater. University-branded clothing, ties, cufflinks and other items with an Otago connection have never been more popular and, in response to the growing demand, we have been working closely with the University Shop to produce a range of memorabilia that we hope will satisfy the most ardent Otago fan.

We're looking at introducing some new items along with the old favourites and have made a start with a striking concept in high quality jewellery, worked around the motif of the college style "O" form.

The first release in the collection is the Otago charm bracelet, a unique piece designed and hand-crafted by a Dunedin artisan goldsmith. The bracelet can be customised by the addition of charms, each of which illustrates recognisable elements of the University's culture, history, environment and atmosphere, so you can create a unique piece that reflects your own Otago story.

All Otago memorabilia, including the bracelet and charms, can be viewed and purchased though the Otago Online Shop, at *www.otago.ac.nz/onlineshop* Items will be shipped to you wherever you live around the world.

Tribute

Dr Sulaiman Daud

The University community was saddened to hear of the death of YB Tan Sri Datuk Amar Dr Sulaiman bin Haji Daud on March 23. Dr Sulaiman, who graduated BDS in 1962, was one of the first Malayan students to study at Otago under the Colombo Plan.

After returning to his homeland he practised as a dentist before entering politics in the 1970s. He was appointed federal territory minister in 1981 and quickly rose to prominence, holding a number of ministerial posts throughout the 1980s and 1990s.

Throughout his political career, Dr Sulaiman never forgot his alma mater and remained a loyal and active Otago alumnus, with a record of long service to the University as a member of the University of Otago Alumni Association of Malaysia and the University of Otago Foundation for Malaysia. He also helped the University extend its academic links in Malaysia by brokering a Memorandum of Understanding with the International Medical University, of which he was Chancellor.

In recognition of his distinguished services to his country and to the University, he was awarded an Honorary Doctor of Laws degree from Otago in 1993. The establishment in 1994 of the University of Otago Dr Sulaiman Daud 125th Jubilee International Postgraduate Scholarships, awarded annually to students from Malaysia for study at master's or PhD level, was a further recognition of Dr Sulaiman's outstanding commitment to education and public life.

In 1997 the University held a graduation ceremony in Kuala Lumpur, the first to be held outside Dunedin, and the graduation address was delivered by Dr Sulaiman. The message at the heart of his address – that the value of an education lies not merely in the acquisition of knowledge, but in the opportunities it affords for a greater understanding between peoples – was characteristic of his humanity and concern for others.

Upcoming University celebrations

2010 Emeritus Professor John Mackie's 100th birthday celebrations, Nelson, 16–19 September

Māori Centre 21st anniversary, 26–27 November

2011 St Margaret's College centenary

Home Science and Consumer and Applied Sciences centenary

Department of Preventive and Social Medicine celebrates 125 years

Aquinas College jubilee

50 years since the University of Otago became autonomous from the University of New Zealand.

2012 Hayward College 21st anniversary

University of Otago, Christchurch 40th anniversary

Māori Centre celebrates 21 years, 26-27 November 2010

The Māori Centre Te Huka Mātauraka turns 21 this year and a reunion will be held to celebrate this event. The programme will include the inaugural Māori alumni function, to be held on Saturday evening, 27 November.

Court of Convocation

Representatives to be elected to Council

Later this year the University of Otago's Court of Convocation will be invited to vote for its representatives to the University's Council. Nominations will be sought by public advertisement in September and voting papers will be sent out in the October issue of the *University of Otago Magazine*, in time for the November election.

The Court of Convocation comprises all those who hold a degree from the University of Otago, as well as those who hold three-year diplomas (the Diploma in Home Science, the Diploma in Physical Education and the Diploma in Land Surveying). However, the Court as such never meets: its sole purpose is to elect three of its members to the University Council. All Court members are encouraged to vote.

These representatives will have an active role on Council, being part of a team of up to 20 members working together in the interests of the University.

The University of Otago is a substantial organisation, with assets exceeding $1.4 billion. It plays an enormously important role in Dunedin, not only as an education provider to more than 21,000 students, but also as the city's largest employer and a major contributor to the local economy. The University is also a significant national organisation, with campuses in Wellington and Christchurch, as well as a presence in both Auckland and Invercargill.

Court of Convocation elections are held every four years and are run under statutory requirements set down in the Election of Members of the Council Statute 2009. The requirements are published in the University Calendar and on the University website *www.otago.ac.nz*

The weekend will provide an opportunity to bring together people who have assisted the Māori Centre Te Huka Mātauraka from its beginnings in 1989, and who worked and studied with the centre over the years. Please register your interest by email to *functions.alumni@otago.ac.nz* or by post to the Alumni Relations Office, University of Otago, PO Box 56, Dunedin 9054.

E kore e taea e te whenu kotahi kite raranga i te whāriki kia mōhio tātou ki ā tātou.
Mā te mahi tahi ō ngā whenu, mā te mahi tahi ō ngā kairaranga,
ka oti tēnei whāriki

A strand of flax is nothing in itself, but woven together is strong and enduring. Collective efforts often result in more meaningful and sustainable outcomes.

Professor Piri Sciascia, Manu Ao, National Inter-University Māori Academy for Academic and Professional Advancement.

St Margaret's centenary reunion, 28–30 January 2011

Please register your interest at *www.otago.ac.nz/alumni/reunions/stmargarets* or by post to the Alumni Director, St Margaret's College, PO Box 56, Dunedin, 9054.

Preventive and Social Medicine, 125 years, March 2011

Since lectures began in 1886, Otago's Department of Preventive and Social Medicine has been enormously influential in public health through its local, national and international networks, undergraduate and postgraduate teaching in public health and industrial health, and research-based degrees in all aspects of public health.

The department is now the largest in the University and will celebrate its 125th anniversary in Dunedin 4–6 March 2011 with a comprehensive and varied weekend of celebrations, including an academic symposium, dinner, film festival and book launch. For further information, please email *functions.alumni@otago.ac.nz*

A history of the department is being written by senior teaching fellow, Dr Warwick Brunton. To share recollections, photographs or other memorabilia, please contact *DeptPSM100@otago.ac.nz*

Aquinas College jubilee, 23–25 September 2011

A group of Aquinas alumni are planning a celebration to mark six decades of the history of this college, to be held in Dunedin the weekend of the England/playoff winner World Cup rugby match. Please register your interest at 03 479 8487 or by email to *lizzy.lukeman@otago.ac.nz*

Hayward College 21st anniversary, 27–29 January 2012

Please register your interest by email to *functions.alumni@otago.ac.nz* or by post to the Alumni Relations Office, University of Otago, PO Box 56, Dunedin 9054.

Alumni events 2010

Melbourne




Parliament




Queenstown




University of Otago, Christchurch 40th anniversary, February 2012

Forty years of research and teaching on the University's Christchurch campus will be celebrated with a series of social functions, a jubilee publication and the establishment of the University of Otago, Christchurch Fellowships and Scholarships Fund. For further information contact Virginia Irvine at 03 364 0038 or by email to *virginia.irvine@otago.ac.nz*

Upcoming alumni events 2010

Events have been confirmed for the following cities:

Christchurch	Friday 18 June
Wellington	Friday 23 July
Sydney	Thursday 26 August
Auckland	Friday 10 September
Washington	Saturday 23 October
Cologne	Saturday 30 October
London	Friday 5 November
Māori (Dunedin)	Saturday 27 November

For further information please email *functions.alumni @otago.ac.nz* or visit the Alumni and Friends web page *www.alumni.otago.ac.nz/events*

Reunions

BDS Class of 1960
18–21 August 2010, Christchurch
Contact Kerry Sullivan at
kerrysullivan@xtra.co.nz

MB ChB Class of 1975
29 November 2010, Milford Track
Contact Louise Buhrmann at
BBuhrmann@aol.com

MBA 14 1990
22–24 October (Labour weekend) 2010, Dunedin
Contact Tony Johnston at
tony@millerstudios.co.nz

MB ChB Class of 1997
October 2012, Dunedin
Contact Rochelle Phipps at
rochelle.phipps@gmail.com

For assistance in organising reunions contact Lizzy Lukeman at 64 3 479 8487 or email to *lizzy.lukeman@otago.ac.nz*

Otago University Dental Graduation Anniversary 1969–70

A number of UK-based dental graduates from 1969 and 1970 held a reunion on 4 December 2009 in the House of Commons, London, to celebrate 40 years of post-university life. From left to right: Alison and John Zinzan, Paul Richardson, John Crisp, Brian Small, Lynda Crisp, Sir Paul and Julie Beresford, Kevin Jones and Mike Taffs.

University of Otago In America Inc

The University of Otago in America Inc is run by a group of volunteer Otago alumni who work to raise the profile of the University among alumni living in the United States.

Board members are involved in affinity activities and seek to make connections with US-based alumni to promote Otago projects and events. One such event is the annual US alumni reception. This year's function is being held at the New Zealand Embassy in Washington DC on 23 October.

The University of Otago in America Inc also acts as a fundraising body dedicated to supporting approved research and scholarship projects. 2009 was a most successful year, with $US119,000 being raised to support cutting-edge research projects and scholarships in health-related areas. Board members hope that alumni generosity will help them surpass this in 2010 so more projects can be funded.

For further information or to make a contribution to the work of the University of Otago in America, Inc please contact Jennifer Schreiber (secretary) on 310.859.1203.

The University of Otago in America, Inc (UOA) is a tax exempt organisation under Section 501(c)(3) of the Internal Revenue Code of the United States of America. The tax ID number of UOA is 30-0110891.

Keep in touch

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Physical address
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Dunedin

Tel 64 3 479 8487
Fax 64 3 479 6522
Email alumni@otago.ac.nz
Web www.alumni.otago.ac.nz

The Alumni and Friends website contains information on what's happening for alumni around the globe. Via the website you can:

- update your contact details so you continue to receive Otago publications
- register for alumni events
- receive updates about what's on for alumni
- view information on how to contact other Otago alumni
- find out how you can support the University.

Annual Appeal

The University congratulates the 10 University of Otago students who received Alumni Scholarships in 2010, funded by donations to the Alumni Appeal They are (left to right): Adrian Paterson, Georgina Beasley, Anna Scadden, Edward Linscott, Dylan Gaffney, Thomas Manning, Natalie Watkin-Ward, Hannah Laws, William Blackburn, Nicola Crawford.

Piping scholar performs

A function was held recently to mark the 92nd anniversary of the death of David A Grant, who was killed in 1918 during the battle of the Somme. A descendant, Toronto-based alumnus Dr Peter Grant and his wife Ruth, established the David A Grant Memorial Scholarships in Scottish Piping and Scottish Drumming in 2008 in memory of David. A special condition of the scholarship is that the recipient should play two Scottish airs, the *Road to the Isles* and *Amazing Grace*, every year on April 7, the anniversary of David's death.

Liam Kernaghan (pictured left), the first recipient of the scholarship, attended the function and his rendition of the two airs was much appreciated by guests.

A second Scottish piping and drumming scholarship, the Alexander Leith Memorial Scholarship, was also established in 2008 by the descendants of Alexander and Margery Leith.

Wall of Fame inductees

Six new members have been inducted to the School of Physical Education's Wall of Fame.

They are: Pat Barwick, Dr Rex Billington, Sally Clark, Professor Roger Enoko, Trevor Garrett and Arthur Parkin.

Your Otago Link

www.alumni.otago.ac.nz

The popularity of Your Otago Link, a new website feature helping alumni to communicate with the University and each other, continues to grow. From 100 hits a day earlier in the year, the site is now averaging 200 visitors each day.

Networks within the site are also growing, with the addition of the Faculty of Law's alumni pages. Law alumni join those from the School of Business, the School of Physical Education, Chemistry, History and Art History, Selwyn College and the Melbourne, UK and Europe chapters in taking advantage of the features of the site. With Your Otago Link you can:

- Activate your own *@otagoalumni.ac.nz* address which forwards mail to an email address you specify
- Find your old classmates and friends and, if they have opted to publicise their contact details, you can get in touch with them
- Link with other Otago graduates for assistance and introductions
- Receive news, event information and general updates from your former department, residential college or local alumni group
- Post your own news, ideas or thoughts on the discussion board
- Discover some of the many benefits of being an Otago alumna/alumnus.

Other features include access to University podcasts, RSS feeds on items of interest elsewhere on the site and links to the Careers Office and other university services.

Memorial window

A stained glass window depicting Queen Margaret of Scotland was recently installed in the dining room of St Margaret's College. The window, created by Peter Mackenzie, was generously donated by the van Wijngaarden family, in memory of Dr Paul van Wijngaarden, a former member of the college. A ceremony to bless the window was held in March, conducted by family friend Bishop Richard Ellena. Pictured in front of the new window are: Alex, Gerry and Karyn van Wijngaarden.

Magazine delivery

The *University of Otago Magazine* can be sent to you – by post or by email – wherever you are in the world. If you would prefer to read the magazine and other alumni communications online rather than in hard copy, or if more than one magazine is being sent to your address and you need only one "household" copy, please email *database.alumni@otago.ac.nz* so the mailing list can be amended.

Alumni story

Encounter with a con man: an introduction to Otago

In late January 1943 I travelled from Frankton Junction to Dunedin to begin medical studies at the University of Otago. The train was crowded, sleep was almost impossible and I was very tired on arriving in Wellington. As it was wartime, the ferry crossing was made in daylight so that submarines might be spotted. It was very tedious, with little to do but walk the deck and, while doing so, I noticed a lone man of average height, well-dressed and wearing horn-rimmed glasses.

From Lyttleton I travelled to Christchurch to catch the midnight train to Dunedin. A few minutes out of Oamaru I was tapped on the shoulder by the same man I had noticed on the ferry. It seemed I was in his seat: I moved over and conversation began.

In a rather cultured voice, he asked me if I was going to university and was I planning to study medicine? I replied, yes, I hoped to and that I had booked into the YMCA for a few days while I found digs. He told me that he too had studied medicine in Dunedin, later travelling overseas to specialise in neurosurgery, before returning to work at Dunedin Hospital. He was very helpful, saying his former landlady at 357 Great King Street might help me with accommodation and offering to take me to dinner at Wains Hotel the following evening. In my address book he wrote "T C Shearsby Wains Hotel 6.30pm".

I duly appeared at Wains Hotel, but there was no Dr Shearsby and no reservation in his name. I was a little nonplussed, but the following day went to the hospital only to be told there was no Dr Shearsby on staff. I then went to the Medical School to find out if he was working there. The kind person in the office obligingly went through the past 20 years of student records and, again, no such name appeared. I also checked the Great King Street address he had given me to find no such number existed.

Something made me persist and I returned to the hospital reception the next day. No joy there, but then who should I see coming down the stairs in a white coat with a stethoscope around his neck but Dr Shearsby! He explained that the staff in reception were new and did not know him. He then offered to sell me a microscope – for £25, which was about all that I had! He said to think about it and come back tomorrow.

So, I again presented myself at reception and was – again – told there was no Dr Shearsby. When I explained that I had seen him the previous day and described what he looked like, the manager exclaimed: "My God, that must be Murray Roberts!"

That meant nothing to me then, but, about two years later, I found a note on the notice board in the medical students' common room: "Ever heard of Dr Shearsby?" from a fellow student who knew of this encounter. The note was accompanied by a newspaper cutting about a certain Murray Roberts accused of impersonating a doctor!

DR ROSS SMITH MB ChB 1949

Murray Beresford Roberts began medical studies at the University of Otago, but, while he never completed his degree, he went on to impersonate doctors and teachers both in New Zealand and Australia. He was imprisoned on several occasions for offences including fraud, theft and impersonation. Roberts' autobiography, *A King of Con Men*, was printed posthumously in 1975.

The Otago University Medical Company?

It may be just over 100 years since its genesis, but the Otago University Medical Company (OUMC) has packed much into that century.

Thousands of young men and women have served with the volunteer unit, learning the skills needed in times of peace and, of course, war. World War I, World War II, Korea, Vietnam and many peace-keeping operations have seen lives saved and suffering eased.

Originally launched as the medical section of the Otago University Officers' Training Corps, early members readily put up their hands for King and country. Otago supplied many of the 385 New Zealand medical officers that served in the 1914–18 conflict.

Such was their contribution that the Governor-General, working through the Ministry of Defence, released money left from the Hospital Ships Fund to build a permanent base for training medical students in the "medical sciences of war". The new building, opened in 1923, was initially named the Maheno and Marama Memorial Hall, commemorating the two New Zealand hospital ships, but is now known simply as Marama Hall – an integral part of the Department of Music.

Even by then, support for the Officers' Training Corps had waned to the point, in 1921, where future Medical School Dean (Lt Col) Charles Hercus, who served with distinction in World War I, stepped in to take command.

Under his direction the OUMC's fortunes steadily improved so that, by the outbreak of World War II, the company was in a healthy state – ready to supply well-trained medical professionals to serve overseas with the expeditionary force.

During the 1950s the OUMC boasted more than 300 officers and other ranks, including Brian McMahon who, after graduating, would eventually become a Brigadier and Director of Defence Medical Services, retiring in 1983.

"It was one of the most popular and influential University clubs in its heyday," says Brigadier (Rtd) McMahon, reflecting on the post-World War II period.

"There was a strong core of blokes who had been NCOs or officers during the war. Many of them reverted to being NCOs so they could become members of OUMC when they returned."

Since then, the fortunes of the OUMC have varied, hitting low points during the Vietnam War, when sentiment was against military service, and when the opening of clinical schools in Christchurch and Wellington meant the loss of a portion of the Medical School's senior students.

Other moves such as making the OUMC a sub-unit of 3 Field Ambulance, and changes this decade to the structure of Territorial Forces and the training of medical personnel have also affected numbers.

"It was a great error of judgment by the military to disband the OUMC. It was a bit of an aberration," says McMahon.

Lt Col Dr David McBride, from the Department of Preventive and Social Medicine, also believes the dissolution of the old OUMC structure and training changes contributed to a fall-off in recruitment levels.

Currently a medical officer with the 3rd Health Support Company and a former commanding officer, he has been deployed twice in East Timor and once in Afghanistan.

He would like to see more young health professionals involved because of the skills they can develop clinically and in leadership and teamwork.

"Officer training selects for the ability to lead a team, the ability to think on your feet, to express yourself clearly, to formulate a plan quickly and communicate it to other people. It is a good way to train your mind to think logically, clearly and quickly through problems."

Structural changes are on the way, with the army and University representatives, such as maxillofacial surgeon Lt Col Dr Darryl Tong, developing plans to reinvigorate military medical officer training.

Proposals include an umbrella University Health Unit, which includes a new OUMC with some of the facets of

the former company and, eventually, a similar unit in Auckland, all designed to involve doctors and other allied health professionals in the army.

Lt Col Dr Andrew Dunn, director of Army Health at Trentham, says the old OUMC model worked well as a conduit to get medical professionals involved in military medicine.

He began as a Territorial Force recruit when he was a student, and he has about 25 part-time and three full-time staff in his own command who started out in university units.

"The military is a sub-set of New Zealand society so we also need a slice of the health-care services."

The current Otago units in Dunedin and Christchurch have 25–30 personnel each, including doctors, dentists and nurses, as well as radiographers and anaesthetic technicians.

Much of the focus is on peace-time deployments and the army is working with NZAID, deploying to the Pacific Islands, providing opportunities to adapt to different environments.

"A lot of lessons are being learned about delivering health care in overseas environments," says Dunn.

"The army believes that the proposed health units are mutually beneficial. They get well-trained and paid and, in the end, we get young people who are passionate about military medicine."

A recruitment push will begin at the end of this year.

MARK WRIGHT

Otago University Medical Company recruits in the 1970s.

"It was one of the most popular and influential University clubs in its heyday."