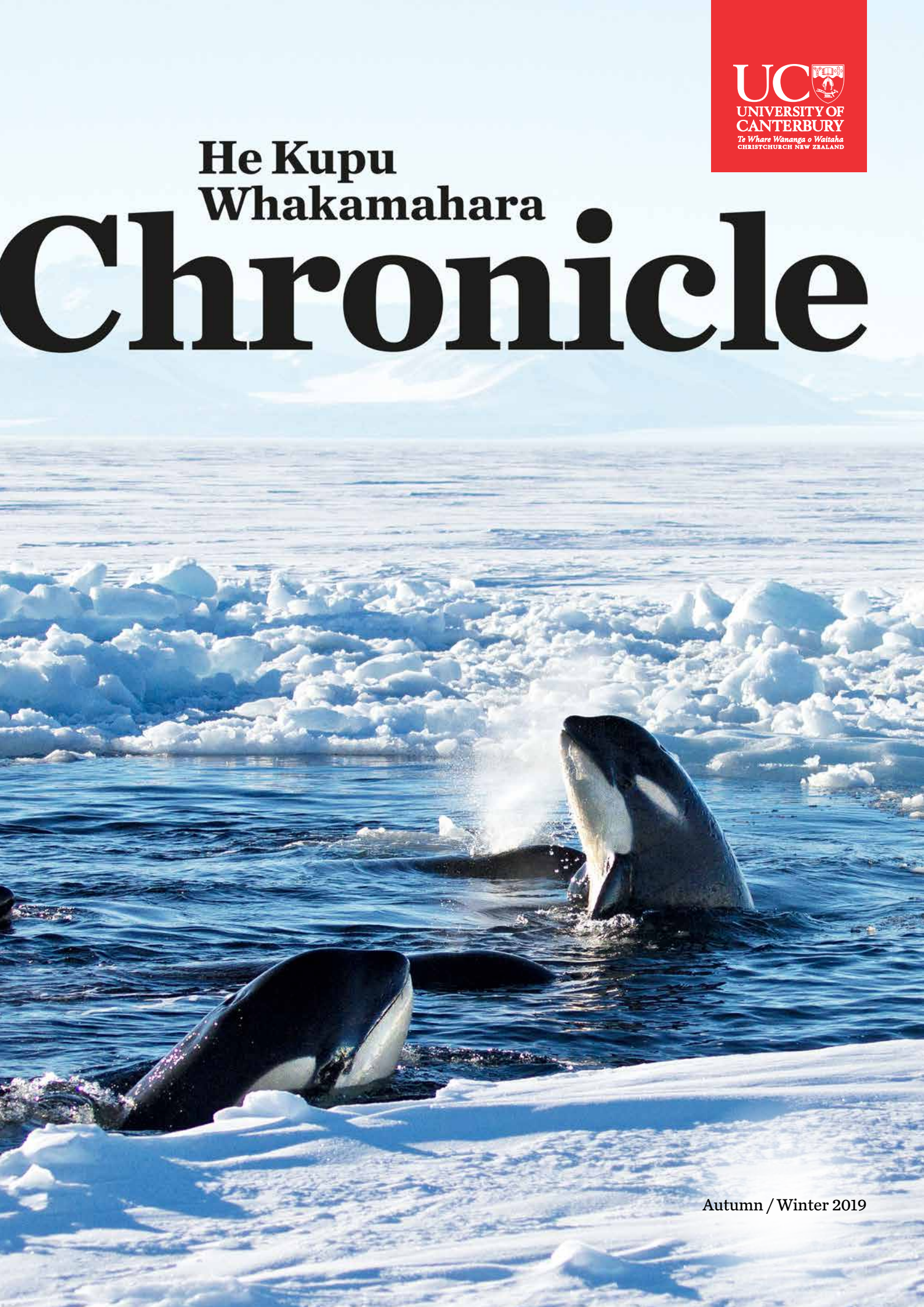
UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

# He Kupu Whakamahara Chronicle



Autumn / Winter 2019

He Kupu Whakamahara
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# Message from the Vice-Chancellor Tumu Whakarae

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**Cover:** Gateway Antarctica at UC researcher Dr Regina Eisert captured a group of Antarctic Type-C killer whales frolicking in the icebreaker channel in the sea ice of McMurdo Sound, Ross Sea, Antarctica. Type-C killer whales are a focal species for the Ross Sea region Marine Protected Area. The TPA research programme at UC studies top predators including killer whales and Weddell seals to support the Ross Sea MPA. Photo credit: Regina Eisert/@TPAonIce with support from Antarctica NZ.

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**Welcome to the latest edition of Chronicle, which captures recent highlights and developments at UC's campuses in Ilam and in the city.**

It is very exciting to join the University at this time and to make my contribution to the wonderful work that has been done so far to deliver UC beyond recovery and very much into growth and further development.

We begin 2019 with vibrant student numbers (up 7% on last year), exciting new facilities for learning, internationally leading research and a pleasing balance sheet as well.

I'd also like to share some good news from the recent Performance-Based Research Fund (PBRF) results. These results showed that UC continues to produce top quality research and improve our overall research performance despite challenges resulting from the Waitaha Canterbury earthquakes. UC received an overall ranking of third in Aotearoa New Zealand, and distinguished itself in four subject areas, ranking first in ecology, evolution and behaviour; marketing and tourism; political science, international relations and public policy; and public health.

Our mission is to contribute to society through knowledge by promoting a world-class learning environment known for attracting people with the greatest potential to make a difference. We will continue to improve and innovate the ways in which we create and share outstanding research, inspire future generations, develop our global connections and of course contribute to our city and region in many significant ways.

In this edition we share some of our recent successes and latest news on a range of fascinating subjects, from motorsport and immersive gaming, to the Prime Minister's visit to launch new Forestry scholarships and the Teece Museum exhibition, Fantastic Feasts. I hope you enjoy Chronicle!

**Professor Cheryl de la Rey**
**Tumu Whakarae | Vice-Chancellor**

# Contents

# Enrolments increasing as UC builds for the future

**"UC is on a trajectory to success across all the areas of achievement expected from a world-class institution," UC's new Tumu Whakarae | Vice-Chancellor Professor Cheryl de la Rey says.**

Newly released enrolment figures for 2019 show student numbers continue to rise at UC.

Enrolment numbers have been increasing steadily year on year since 2017 across domestic, international and postgraduate students. UC now has a total of 16,382 students – and this number will grow with enrolments for Semester 2, summer school, postgraduate courses and other opportunities on offer.

## Enrolment highlights

- UC student enrolments are 7% ahead of this time last year.
- Domestic students are up 6%.
- International students are up 11%.
- Māori students are up 9%.
- Pasifika students are up 5%.

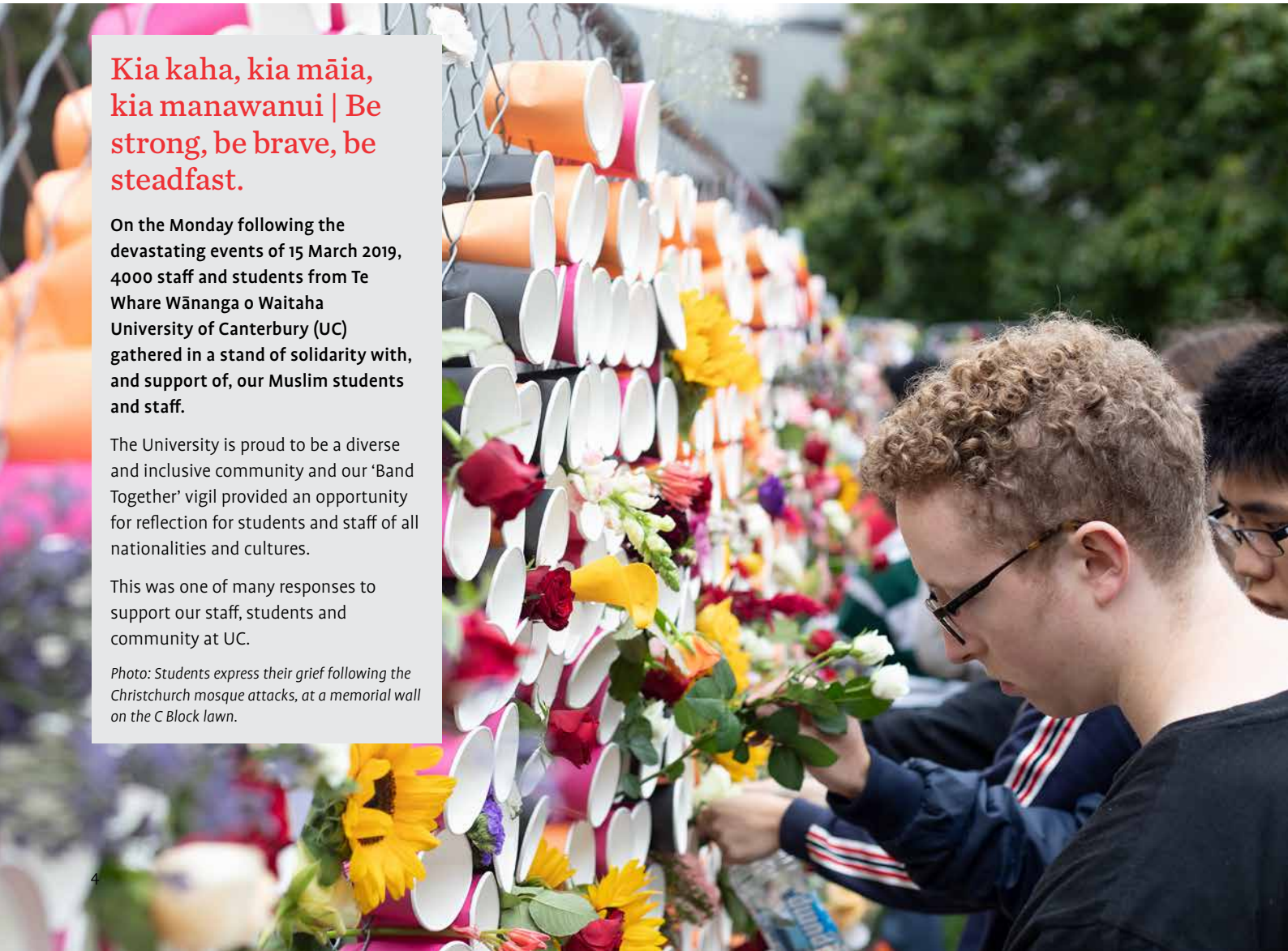
## New facilities:

### Ernest Rutherford building

Stage 1 of the $220 million Rutherford Regional Science and Innovation Centre – the Ernest Rutherford building – was opened by Prime Minister Rt Hon Jacinda Ardern in 2018. It features specialist teaching and research laboratories for Physics, Astronomy, Chemistry, Geology, Geography and Biological Sciences.

### Rehua

Rehua opened at the start of 2019 for Te Rāngai Ako me te Hauora | College of Education, Health and Human Development, Te Pokapū Rakahinonga me ngā Hōtaka Ngaiotanga | Centre for Entrepreneurship, and the Executive Development Programme of Te Rāngai Umanga me te Ture | College of Business and Law.



## Kia kaha, kia māia, kia manawanui | Be strong, be brave, be steadfast.

**On the Monday following the devastating events of 15 March 2019, 4000 staff and students from Te Whare Wānanga o Waitaha University of Canterbury (UC) gathered in a stand of solidarity with, and support of, our Muslim students and staff.**

The University is proud to be a diverse and inclusive community and our 'Band Together' vigil provided an opportunity for reflection for students and staff of all nationalities and cultures.

This was one of many responses to support our staff, students and community at UC.

*Photo: Students express their grief following the Christchurch mosque attacks, at a memorial wall on the C Block lawn.*

# Canterbury Distinguished Professor's black hole theory proven right

**A halo of dust and gas appears in the first image of the black hole that astronomers have captured at the heart of the Messier 87 galaxy, 55 million light-years from Earth.**

It is an incredible occasion for Aotearoa New Zealand science, especially because it confirms UC Canterbury Distinguished Professor Roy Kerr's theory of rotating black holes.

Professor Kerr says he set his alarm for 1am for the reveal of the photo, which he believes is just the beginning point in gaining understanding of our universe.

"The visual evidence will continue to get more and more sophisticated," he says.

In 1963, armed only with pen and paper, Professor Kerr achieved what had eluded others for nearly 50 years. He found the exact solution of Albert Einstein's equations, describing rotating black holes.

Professor Kerr's discovery sparked a revolution in physics at a time when there was no consensus that such objects even existed; the term 'black hole' itself was not coined until 1967.

The Royal Society of London has described his work as of particular importance to general relativistic astrophysics, and all subsequent detailed work on black holes has fundamentally depended on it.

Stephen Hawking, one of the world's foremost theoretical physicists and famous for his work on black holes, described Kerr's discovery in his celebrated book, A Brief History of Time.

"... Roy Kerr ... found a set of solutions of the equations of general relativity that described rotating black holes. These 'Kerr' black holes rotate at a constant rate, their size and shape depending only on their mass and rate of rotation. ... In 1970 ... Brandon Carter, took the first step toward proving this conjecture. Then, in 1971, I proved that any stationary rotating black hole would indeed have such an axis of symmetry. Finally, in 1973, David Robinson at Kings College, London, used Carter's and my results to show that the conjecture had been correct: such a black hole had indeed to be the Kerr solution."

*UC Canterbury Distinguished Professor Roy Kerr.*

*(Pictured from left to right) Grace Elliot, Dr Debbie Munro and Ella Guy.*

# Engineering better health in Africa

**While their peers were at the beach, two UC engineering students spent their summer improving health in Africa.**

"We sent two students to Uganda this past summer as part of a nine-week volunteer opportunity where students learnt how to repair hospital equipment and then work at regional hospitals, teaching technical staff how to repair and maintain the equipment going forward," explains Mechanical Engineering Senior Lecturer Dr Debbie Munro.

"Many developing nations receive donated hospital equipment, but it rarely arrives with any support for training personnel on how to use, calibrate, clean or repair the equipment and thus ends up stored in a warehouse for 'someday'."

UC Mechanical Engineering students Grace Elliot and Ella Guy left for Uganda in mid-December as part of an Engineering World Health (EWH) programme. They spent four weeks completing training on medical equipment repair, working with local biomedical engineering students, learning Swahili and studying design.

"The goal of EWH is to improve healthcare around the world by using a resource that already exists. Students gain a real-world understanding of the health challenges abroad, in addition to valuable hands-on technical skills. They are also immersed in a cultural experience where they can learn the language and relate to people in an environment unique from their own. As the world becomes more global, these kinds of opportunities are essential for our future engineering leaders," Dr Munro says.

UC plans to develop its own EWH programme, which will allow more of UC's engineering students to participate in this opportunity, starting in summer 2020.

'Many developing nations receive donated hospital equipment, but it rarely arrives with any support for training personnel on how to use, calibrate, clean or repair the equipment.'

Global awareness is a key characteristic of UC's Graduate Attributes, ensuring our students comprehend the influence of global conditions on their discipline and will be competent in engaging with global and multicultural contexts.

# Prime Minister awards inaugural Te Uru Rākau Forestry Scholarships

**Pirimia | Prime Minister Rt Hon Jacinda Ardern presented Ngā Karahipi Uru Rākau | Te Uru Rākau Forestry Scholarships to eight outstanding new students at a ceremony at UC in March.**

Developed to encourage young and talented individuals into Aotearoa New Zealand's growing forestry industry, Te Uru Rākau scholarships will see more Māori and/or female students enrolling in the University's Bachelor of Forestry Science or Bachelor of Engineering (Hons) in Forest Engineering.

"We're delighted to see the government supporting professional forestry education, and very pleased to welcome greater numbers of Māori and women students at the University and ultimately joining the forestry sector through these scholarships," says UC Tumu Whakarae Vice-Chancellor Professor Cheryl de la Rey.

The 2019 recipients are: Robyn Patient from Waikuku Beach; Jessica Stock from Tasman; Cole Grace from Gisborne; George Fanning-Ihaka from Dargaville; Nicholas Melvin from Winton; Thomas Brown from Matamata; Max Gomez from Dunedin; and Hannah Humphreys from Wanaka.

Robyn Patient (Te Arawa and Ngāi Te Rangi) was thrilled to be one of the first UC students to receive Te Uru Rākau Forestry scholarship.

"I was so excited. It was something I absolutely wanted to do and getting the support from MPI [Ministry for Primary Industries] and the University was so relieving. My family and extended whānau were really excited."

Ngā Karahipi Uru Rākau | Te Uru Rākau Forestry Scholarships Awards Ceremony was attended by Pirimia | Prime Minister Rt Hon Jacinda Ardern, Minister of Forestry Hon Shane Jones, Tumu Whakarae | Vice-Chancellor Professor Cheryl de la Rey, Tumu Kaunihera | Chancellor Sue McCormack, Ministry for Primary Industries Director-General Ray Smith and Head of Te Uru Rākau Julie Collins.


*Prime Minister Rt Hon Jacinda Ardern with scholarship recipient Robyn Patient.*

# Is 'sex ed' failing the #metoo generation?

**Navigating contemporary gender issues is complicated for young people and Aotearoa New Zealand's traditional sexuality education is not keeping up, according to UC Associate Professor Kathleen Quinlivan.**

In her book *Exploring Contemporary Issues in Sexuality Education with Young People* (Palgrave), Associate Professor Quinlivan takes a closer look at gender fluidity, consent, exposure to pornography, sexual violence and the power dynamics behind the #metoo movement.

"One of the main issues is what young people need and what they are getting. We are in the era of #metoo, sexual harassment, sex and gender politics – and those are things that young people really want to know about, but they are often not areas that teachers and parents are comfortable going into," Associate Professor Quinlivan says.

The internationally recognised researcher of school-based sexuality education says that, although sexuality education's limited focus on health and risk lingers, she believes these gaps can be bridged. She advocates for teachers to listen to young people's lived experiences and venture beyond traditional boundaries.

"It is not easy teaching these things [but], policies aside, the relationship with students is the most important thing for teachers to develop and that takes time. You have to be someone who is really interested in exploring the issues that young people are dealing with."

The possibilities for change are exciting, Associate Professor Quinlivan says.

"The rise of the #metoo movement has been huge – there has been a tidal shift. There is a new feminism where younger women are starting to stand up and talk about the things they experience. Through popular culture, in response to gender-based harassment, sexual diversity and the rise of #metoo, there is a renewed interest in gender activism – it is a bit of [a] moment really!"

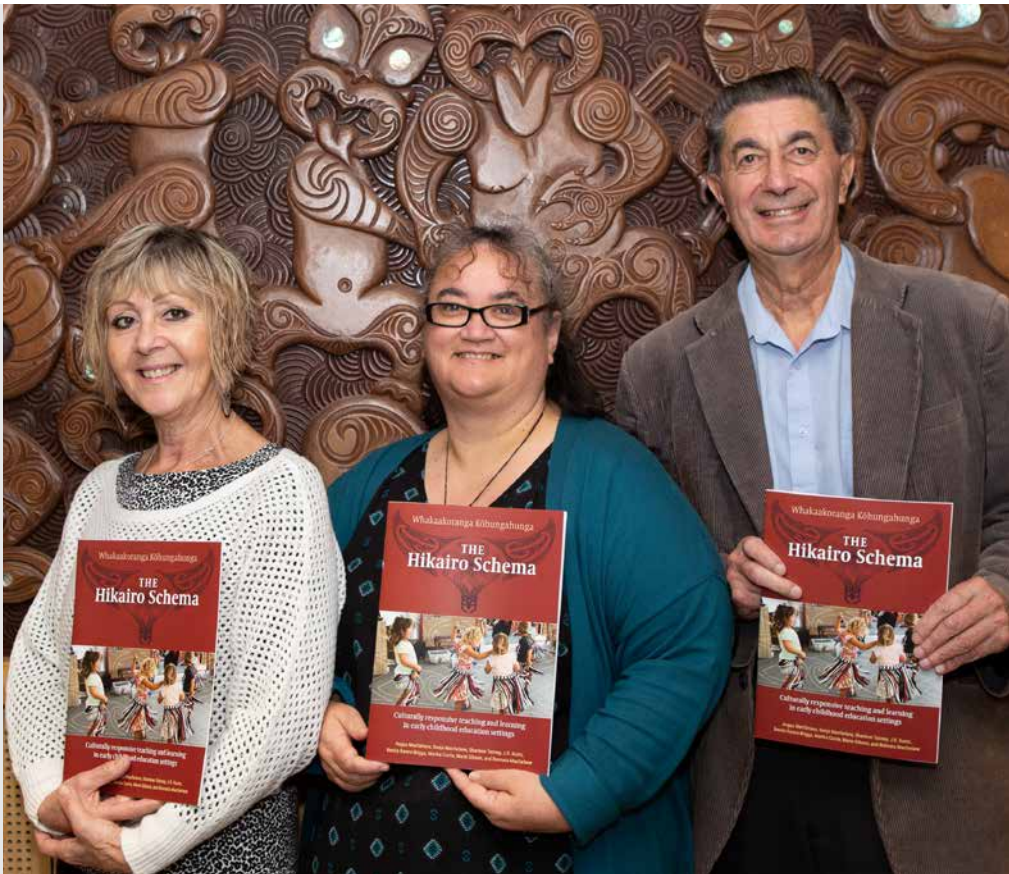
*UC Associate Professor Kathleen Quinlivan is internationally recognised in the field of school- based sexuality education.*

> 'We are in the era of #metoo, sexual harassment, sex and gender politics – and those are things that young people really want to know about.'

## New teaching guide helps early years educators embrace cultural differences

Three UC academics are leading the way in early years education with a new guidebook focusing on culturally responsive learning and teaching.

*From left: Associate Professor Sonja Macfarlane, Early Childhood lecturer Benita Rarere-Briggs and Māori Research Professor Angus Macfarlane contributed to The Hikairo Schema, an adaptable guide for teachers.*



# Brexit is not gender neutral

**The United Kingdom's exit from the European Union (EU) will have legal effects on women, including some New Zealanders.**

Few studies have considered the impact of Brexit on women and none has considered the gendered impact outside Europe. This is an area of concern that UC Professor Annick Masselot, of Te Rāngai Umanga me te Ture | College of Business and Law, is researching.

Her research focuses on the EU and comparative law concerning gender equality, social and employment law, reconciliation between work and family life, pregnancy and maternity rights. She sees legal problems ahead for women who have followed their partners to live in the UK. In particular, with Brexit they may no longer have legal status if they cannot fulfil the requirements for a visa, which include the requirement to provide evidence of employment. A concern is the UK could go back to pre-EU discrimination in hiring or firing pregnant women or denying maternity leave because it might be less expensive for businesses.

A change in EU membership could affect the way the EU acts in areas such as trade negotiation, delivery of aid and humanitarian relief, global policy and cooperation on climate change, immigration and security. These impacts would be felt by women in the Asia–Pacific region, including in Aotearoa New Zealand.

"The EU referendum campaign in the UK was characterised by the absence of women on discussion panels, as well as gender and equality issues from the public debates until just before the vote," says Professor Masselot. "Brexit discussions have tended to focus on business interests."

Professor Masselot suggests we use a 'gender lens' when considering law and policies. We should ask ourselves, "How does this affect women?" because laws are not gender neutral – they impact women and men differently.

*European Union and comparative law expert Professor Annick Masselot.*

# Shape-changing element holds key to antibacterial coating

**A UC research team is another step closer to developing germ-proof surface coatings for environments such as hospitals after an unexpected development in the lab.**

Research lead UC Professor Susan Krumdieck had been working with titanium oxide ($TiO_2$), a well-known ceramic compound, for over a decade when the element suddenly changed form.

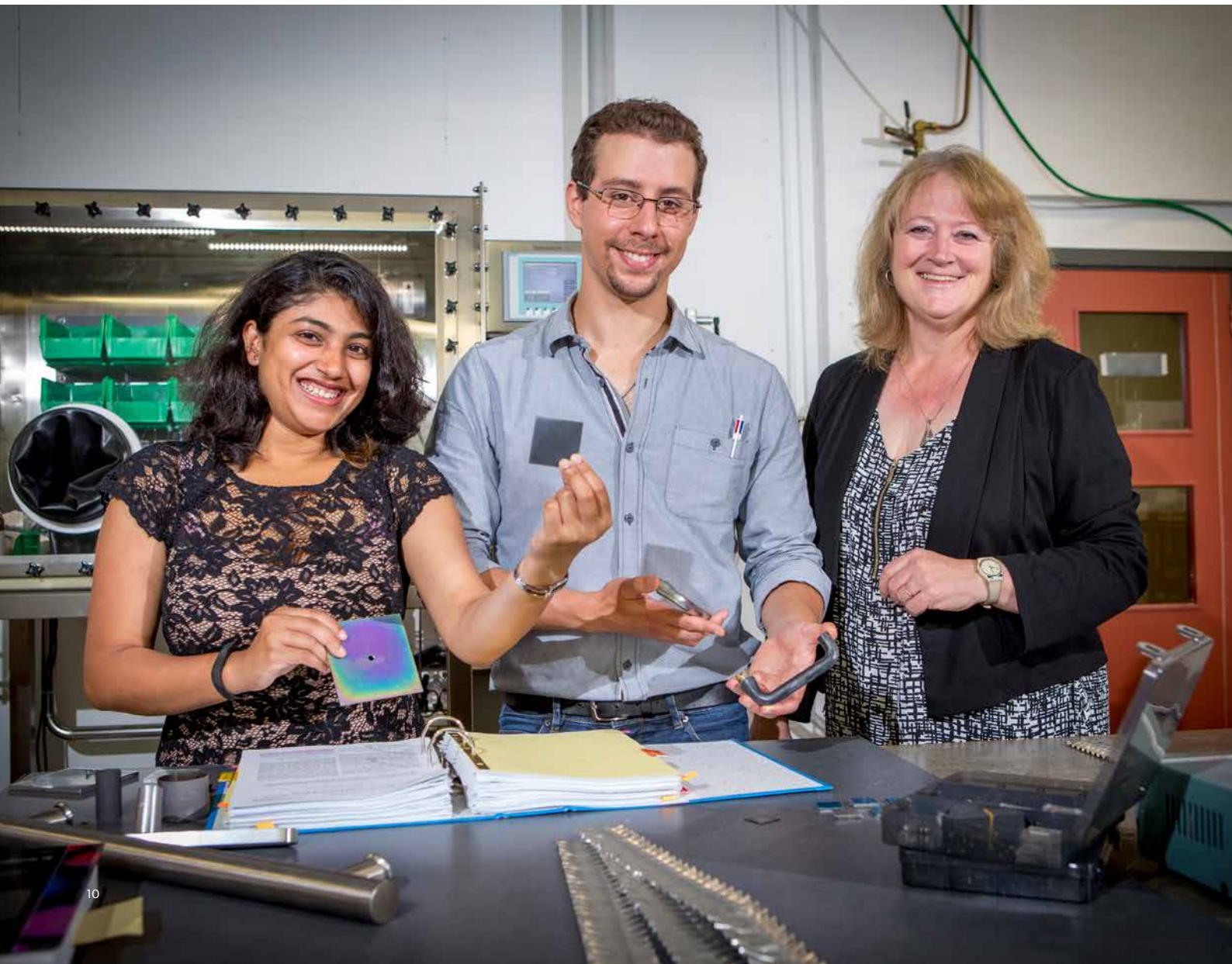
"$TiO_2$ is famously bright white or transparent, but one day the coating came out all black," she says. "Some undergraduate project students tested it for self-cleaning performance, and it was so photo-catalytically active without any UV [ultraviolet] radiation that we knew we had discovered something new," says Professor Krumdieck.

However, Professor Krumdieck and her team of 14 interdisciplinary UC researchers still had two challenges to overcome: how to fix a $TiO_2$ coating onto a surface such as a door handle and how to activate it without a natural light source. She took some black coating samples with her on a trip to Université Grenoble Alpes in France. Researchers there, led by Professor Raphaël Boichot, found that the crystals had no need for UV radiation to energise the new form of $TiO_2$.

In testing back at UC, the team found that the nanostructure of the black compound could be fixed in coatings. The conditions are now right for the team to move ahead to developing commercial applications.

White $TiO_2$ is used in sunscreens because it can absorb radiation. This action creates energy, which is expressed as oxygen ions – and oxygen ions are deadly to bacteria. $TiO_2$ is therefore ideal for use on surfaces such as door handles and in environments that must be kept sterile.

*PhD students Rukmini Gorthy and Johann Land and research lead Mechanical and Materials Engineering Professor Susan Krumdieck (right).*



# UC creates Ōtautahi Christchurch's first lava flow in 6 million years

**While Ōtautahi Christchurch has had its share of natural disaster hazards, it has been relatively lava-free … until now.**

At UC's Te Kura Kōwaiwai | School of Fine Arts, real lava has been pouring out of a new research facility – the Lava Laboratory – which may help researchers monitor lava flows in Hawai'i and the rest of the world.

A team of Waitaha Canterbury and Hawai'i volcanologists, engineers, mathematicians and artists combined forces to supersize a bronze casting furnace. With this, they melted rock at a temperature of 1,350 degrees Celsius, creating the University's manufactured lava.

US Geological Survey scientists helping monitor eruptions in Hawai'i formed part of the lava laboratory team, and are very interested in the results.

"This project will help us better understand how lava flows behave, which will improve our ability to predict how they will affect communities all over the world. For New Zealand it will help us prepare for future lava flow events that will one day affect Auckland," US Geological Survey Research Geologist Ms Elise Rumpf says.

*Photo: Canterbury scientists wearing Kevlar protective gear create lava at 1350degC in the new Lava Laboratory at UC.*

*Associate Professor Nik Taylor's new book features images from a photography exhibition of women, children and companion animals by The Northern Domestic Violence Service.*

# A woman's best friend – dogs and domestic violence

**A new book from UC Associate Professor Nik Taylor, *Companion Animals and Domestic Violence: Rescuing You, Rescuing Me*, explores the role dogs and other companion animals play in women's recovery from abuse, and the impacts of an abusive relationship on the animals themselves.**

A dog (or another companion animal) is often a woman's best friend when it comes to escaping and recovering from domestic violence. Women interviewed by Associate Professor Taylor and co-author QUT Associate Professor Heather Fraser spoke of companion animals as being part of the whānau family and playing an important role in helping them heal.

The link between domestic violence and animal abuse is well documented, so the authors focused instead on the loving connections between human and animal survivors.

"It is clear these woman have a deep and profound relationship with their animals that helps them get through their experiences of abuse," Associate Professor Taylor says.

"These relationships can literally provide victims/survivors with the will to live, eat, sleep, keep caring for others and, in the process, maintain the will to rebuild their lives."

Mistreatment of animals can also be the catalyst for women to leave.

"Women who say they can take the abuse themselves cannot see their animals suffer abuse, and that is ultimately good because it gets everyone out of the abusive situation," Associate Professor Taylor says.

Professor Annie Potts, co-director of UC's Centre for Human-Animal Studies, has called the book a "compelling landmark text".

'These relationships can literally provide victims/survivors with the will to live, eat, sleep, keep caring for others and, in the process, maintain the will to rebuild their lives.'

"[It] is a comprehensive, honest, compassionate and respectful study of a difficult and disturbing subject," Professor Potts says.

The book will inform various academic disciplines including social work, anthropology, sociology, philosophy and geography, as well as professionals working in domestic violence or animal welfare service provision.

# Uncovering Waitaha Canterbury's hidden women

**A new crowdsourcing project aims to harness UC Te Rāngai Toi Tangata | College of Arts technology to make the women of nineteenth-century Waitaha Canterbury more visible in the history of the province.**

UC and Canterbury Museum are looking for computer-savvy volunteers to tag names that appear in the GR Macdonald Dictionary of Canterbury Biographies, to make them computer-searchable.

The Macdonald Dictionary comprises more than 12,000 handwritten index cards of biographical information on 22,000 nineteenth-century Cantabrians. However, so far only the heads of each household, mainly men, are digitally searchable.

The project aims to tag and transcribe the hundreds or possibly thousands of other names mentioned in the biographies, including wives, children, business partners and occasionally neighbours.

Joanna Szczepanski, Canterbury Museum's associate curator of human history, says one of the project's major benefits is that it will improve access to information about the women of nineteenth-century Canterbury.

"Only 64 women have their own entries, mostly because they were high profile and had a public life, but many other women are hidden in their husband's or father's biography. This project will give them much more visibility in Canterbury's historical record."

The index cards have been uploaded to the crowdsourcing platform Zooniverse where volunteers interested in family history – or the history of Waitaha Canterbury – can tag and transcribe the names they see.

To take part, users need only sign up for a free Zooniverse account, watch the tutorial and start tagging.

For more, visit ***www.zooniverse.org/projects/christopherthomson/macdonald-dictionary***

'Only 64 women have their own entries, mostly because they were high profile and had a public life, but many other women are hidden in their husband's or father's biography.'

*Photo: Joanna Szczepanski, Canterbury Museum Associate Curator Human History, holds one of the 12,000 index cards from the Macdonald Dictionary.*

## Ōtautahi Christchurch lawyer elected UC's new Chancellor

**UC is led by two women for the first time, following the election of Ms Sue McCormack as its new Tumu Kaunihera Chancellor. Ms McCormack started in the role on 1 January 2019.**

A UC alumna, Ms McCormack has been a member of the UC Council since 2009 and Tumu Tuarua Kaunihera | Pro-Chancellor since 2013.

As chair of the Vice-Chancellor Employment Committee, Ms McCormack led the search process for UC's next Tumu Whakarae | Vice-Chancellor. That process resulted in the appointment of Professor Cheryl de la Rey, who started at the University on 1 February.

Former Tumu Kaunihera | Chancellor Dr John Wood believes Ms McCormack's expertise and experience in governance will be vital at the UC Council table.

"Her professional background in commercial law and close knowledge of the Christchurch construction industry has been invaluable as UC worked through its $1.2 billion post-earthquake construction programme," Dr Wood says.

Ms McCormack is a chartered member of the Institute of Directors and is a director of KiwiRail. She has previously been a director of the Lyttelton Port Company, Te Tira Pūoro o Aotearoa| New Zealand Symphony Orchestra and the Public Trust.

She retired from law firm Mortlock McCormack Law at the end of March 2019.

# Musical connections strike a drum in 2019

**A celebration of Ōtautahi Christchurch musical talent – past and present – will be showcased this year.**

UC's Te Kura Puoro | School of Music, the Christchurch Symphony Orchestra (CSO) and The Christchurch Town Hall have a strong relationship going back decades. That relationship will be proudly on public display this year, as UC staff produce a music commission, take part in performances and provide musical direction.

CSO announced the new commission as a celebration of achieving its 60th year in 2018 and of the recent reopening of the Town Hall. The world première is set to be performed in September.

Adjunct Senior Fellow James Gardner of Te Rāngai Toi Tangata | UC College of Arts will compose the piece, a percussion concerto. The Los Angeles Percussion Quartet (LAPQ) will perform it along with Justin DeHart, senior lecturer in performance/percussion at UC's Te Kura Puoro | School of Music and a member of the Grammy-nominated LAPQ.

In May 2019, UC's Head of Performance Professor Mark Menzies conducted a pair of CSO concerts, featuring his own arrangements and compositions, in the Christchurch Art Gallery. Professor Menzies will also play solo violin with the orchestra in a new work that Aotearoa New Zealand composer Chris Gendall has written specifically for him.

## A rich heritage

Te Kura Puoro | School of Music has a strong connection with the CSO. After Professor John Ritchie was appointed Head of Music at UC in 1962, he went on to found and conduct the John Ritchie String Orchestra, which in turn became the Christchurch Symphony Orchestra.

"We have a focus on works by living New Zealand composers and it's very collaborative, demonstrating a really open spirit here," Associate Professor Glenda Keam, Head of Te Kura Puoro | School of Music, says.

*Adjunct Senior Fellow Mr James Gardner of Te Rāngai Toi Tangata | UC College of Arts.*

*DG 319, Attic black-figure column krater, ca. 530 - 520 BCE. On loan from the collection of Doug and Anemarie Gold*

# Dining Greek and Roman-style at the Teece Museum

**The ancient Greeks and Romans were obsessed with kai. For most, food was a matter of daily survival. For the fortunate few however, food was a status symbol and a way of expressing superior tastes.**

A new exhibition at UC's Teece Museum of Classical Antiquities, *Fantastic Feasts*, takes visitors on a culinary tour of the ancient world through precious artefacts, hands-on activities for all ages and free educational outreach.

*Fantastic Feasts* explores what the ancient Greeks and Romans ate, the feasting and dining traditions that brought their communities together, and the connections they believed existed between food and the gods. Fascinating artefacts from museums around Aotearoa New Zealand, a private collection and the University's James Logie Memorial Collection include silver gilt cups and bowls, exquisitely decorated ceramic drinking cups and delicate glass dishes that demonstrate the extravagance of the wealthy elite.

Contrasting these luxury items is a selection of crockery and utensils used by average households. The everyday bowls, plates and cooking pots are nonetheless carefully decorated and beautifully formed – a testament to the artisans who produced them.

For more on the *Fantastic Feasts* exhibition, visit ***www.facebook.com/teecemuseum***.

***Fantastic Feasts*: Teece Museum, Arts Centre, until 23 February 2020, supported by Tūāpapa Hononga o Te Whare Wānanga o Waitaha | UC Foundation.**

# Teece Museum acquires rare Roman artefacts

**A Roman-era spoon and a patera, a shallow metal libation bowl, from the early period of the Roman Empire have been gifted to UC's Teece Museum and Logie Collection.**

The artefacts will be used for teaching and research related to Roman social culture, cultural belief systems, food consumption and ancient craftsmanship and construction techniques.

The large bronze spoon dates back to the second century CE, probably made in Roman Britain. It was likely used by an elite Roman family to eat shellfish and other small foodstuffs.

*(Pictured left to right) Professor Peter Field, Associate Professor Alison Griffith and Dr Gary Morrison, holding the two new artefacts donated to UC's Logie Collection.*

Dating back to between the first century BCE and first century CE, the patera is a high-quality piece primarily used for serving food or drink at dinner parties or for pouring libations (drinks at religious ceremonies to honour gods or ancestors).

With almost no other comparative examples in other museums around Aotearoa New Zealand, the patera, donated by Doug and Anemarie Gold, will be an inimitable addition to the Museum's *Fantastic Feasts* exhibition, which focuses on food and feasting in the ancient world.

The large bronze spoon, donated by UC's PhiloLogie Society, will be used for hands-on teaching with visiting school classes.

We are grateful for the ongoing support of our donors, without whom the Teece Museum and Logie Collection would not be possible.

For more on the *Fantastic Feasts* exhibition, visit ***www.facebook.com/teecemuseum***.

# Celebrating honoris causa for two exceptional UC alumnae

**At graduation ceremonies in December 2018 and April 2019, Te Rāngai Toi Tangata College of Arts was proud to present honorary Doctor of Letters (honoris causa) to alumnae Jenny Harper and Elizabeth Calder.**

Aotearoa New Zealand art writer, academic, curator and art gallery director Jenny Harper received her honorary doctorate in December 2018. Former Tumu Kaunihera | Chancellor Dr John Wood praised Harper for her highly respected and influential contribution to the art world.

"Ms Harper is an academic and museum professional who has left an indelible mark on the New Zealand cultural and artistic landscape and whose legacy will continue well into the future. She is a graduate we are proud to be identified with and who richly deserves [this] award."

Elizabeth Calder is an English editor and publisher who discovered some of the greatest writers of our times. She received her honorary Doctor of Letters at the University's 18 April graduation ceremony this year.

Tumu Kaunihera | Chancellor Sue McCormack says the UC Council was delighted to recognise Calder's immense contribution.

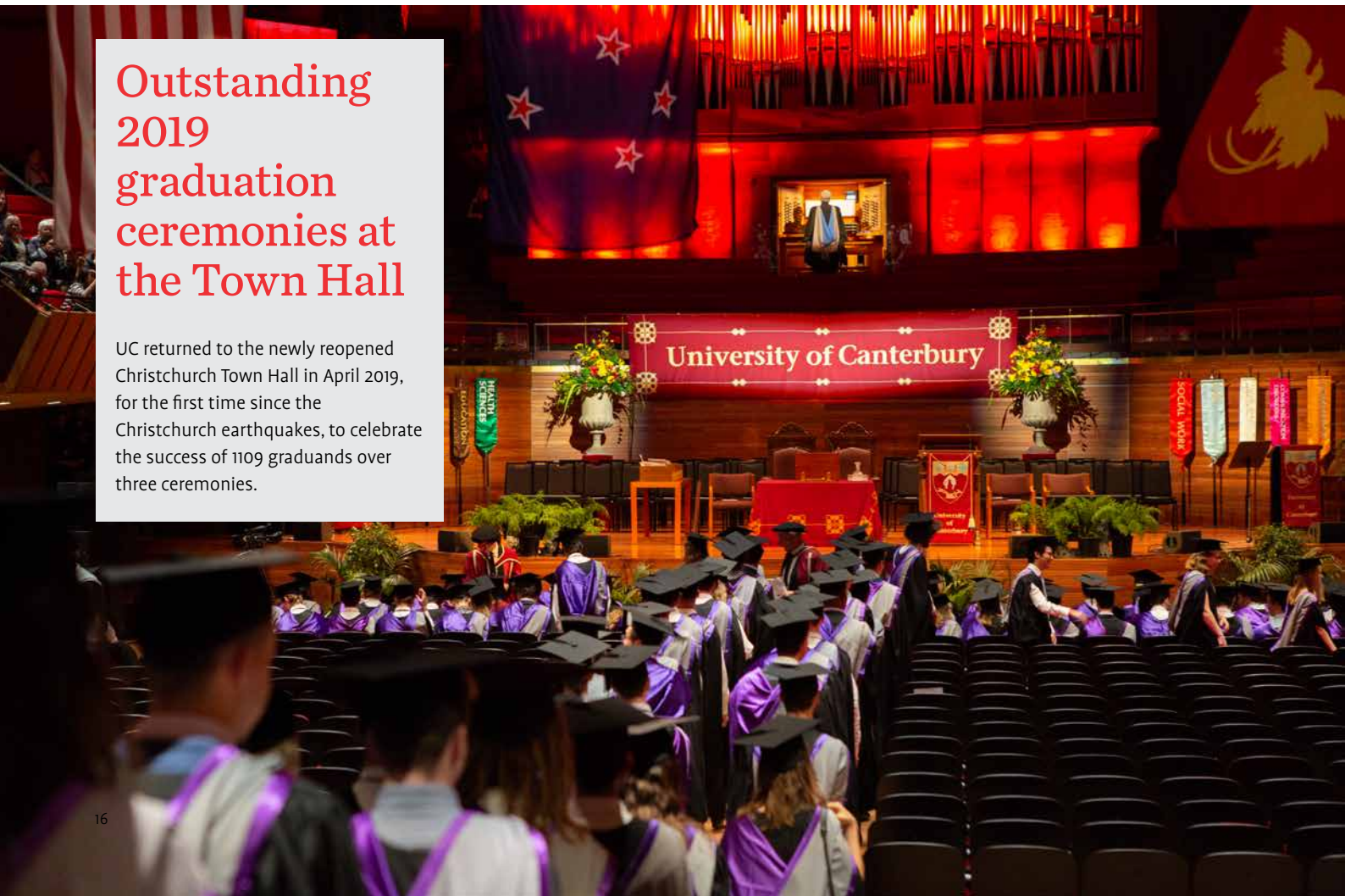
"Liz has been so influential in the publishing world that it is almost impossible not to have read an author she discovered and nurtured during her career. Books like *The Handmaid's Tale*, *The English Patient* and *Midnight's Children* have inspired, delighted and challenged generations of readers."

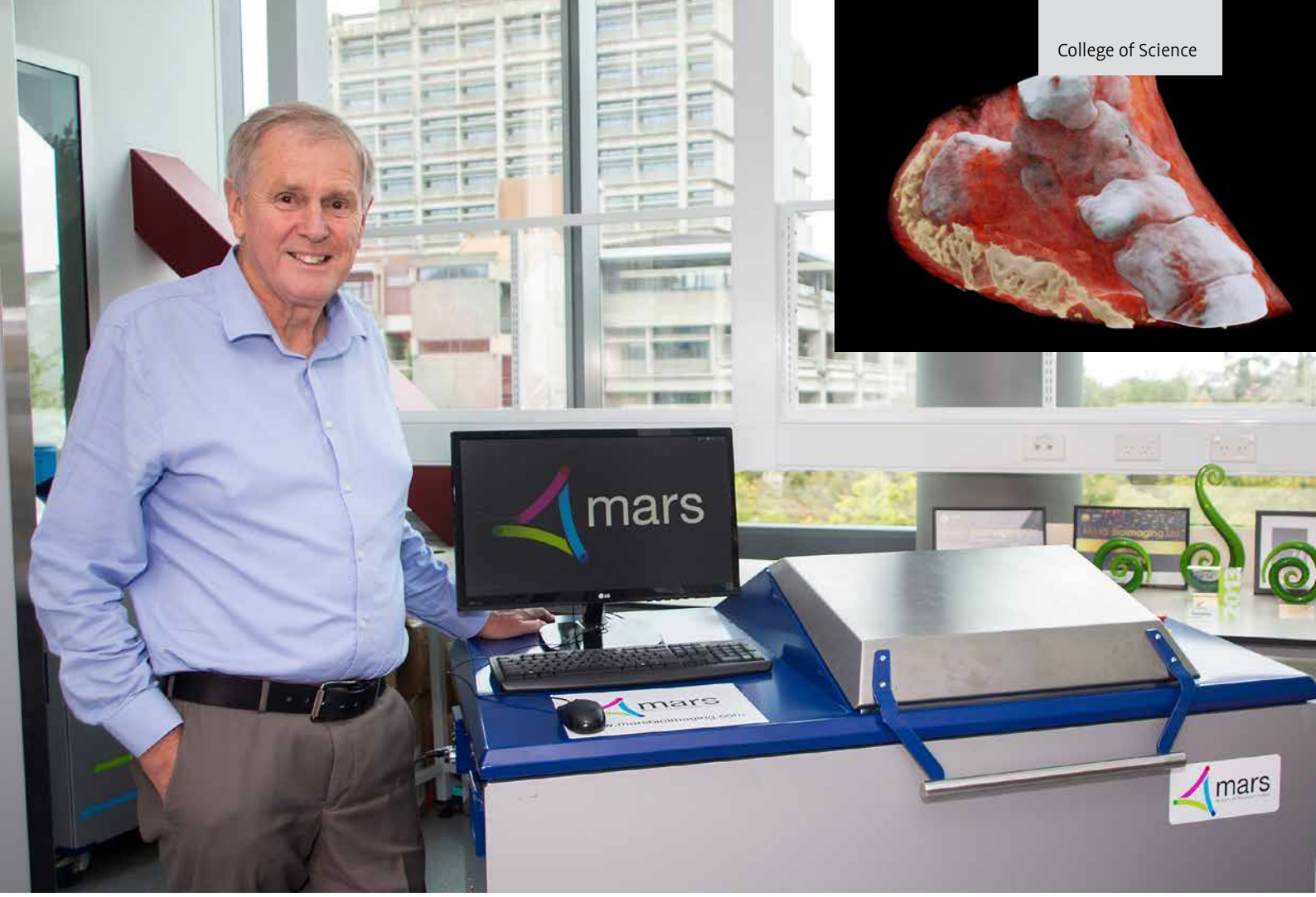
'The UC Council awards honorary doctorates annually, in recognition of noteworthy contributions to society by alumni and alumnae.'

Every year the UC Council considers awarding honorary doctorates in recognition of noteworthy contributions to society by alumni and alumnae, as well as by other members of the community with whom the University has a substantial association.

## Outstanding 2019 graduation ceremonies at the Town Hall

UC returned to the newly reopened Christchurch Town Hall in April 2019, for the first time since the Christchurch earthquakes, to celebrate the success of 1109 graduands over three ceremonies.






*Professor Phil Butler is a world leader in the development and commercialisation of medical imaging and laser-based treatment. Inset photo: Ōtautahi Christchurch orthopaedic and rheumatology patients will soon be scanned by the revolutionary new 3D colour medical scanner in a world-first clinical trial.*

# World-leading physicist wins UC Innovation Medal

**The UC Innovation Medal is the highest award the University can bestow on an outstanding innovator, and the recipient of the 2018 medal was Professor Phil Butler.**

A professor of Medical and Theoretical Physics in UC's Te Rāngai Pūtaiao | College of Science, Professor Butler is a world leader in the development and commercialisation of medical imaging and laser-based treatment. His work on the MARS spectral x-ray scanner, developed in collaboration with his son, Professor Anthony Butler, is of particular note.

Producing images with significantly improved diagnostic information, the MARS scanner also measures the x-ray spectrum to produce colour images instead of black-and-white and shows different components of body parts such as fat, water, calcium and disease markers. For reasons such as these, it is widely considered to be a breakthrough in x-ray imaging.

The scanner has the potential to revolutionise medical imaging within Aotearoa New Zealand and overseas, particularly in the diagnosis and treatment of diseases such as cancer and heart disease.

"Professor Butler's work has opened up a new world of medical imaging and diagnostic capabilities," former UC Tumu Kaunihera | Chancellor Dr John Wood says.

Since graduating from UC to teach the next generation of undergraduate and postgraduate students, Professor Butler has published over 800 research publications. He has also spent eight years as Head of the Physics and Astronomy Department and three years as Te Amorangi | Pro-Vice-Chancellor (Resources), and was named a Fellow of the New Zealand Institute of Physics.

The Innovation Medal is awarded by Te Kaunihera o Te Whare Wānanga o Waitaha UC Council for excellence in transforming knowledge or ideas so they are adopted by the wider community in ways that contribute beneficial value.

# Close encounters or visions from space: Antarctic mammals delight scientists

**UC scientists researching environmental impacts in the Antarctic region have one special connection across their work – the local wildlife.**

Gateway Antarctica scientific researcher and Lecturer Dr Michelle LaRue is using high-resolution satellite imagery and volunteers from around the world to analyse crabeater seal populations across the Weddell Sea – one of Earth's last wildernesses. For her part, Dr Regina Eisert is capturing extraordinary footage of killer whales and Weddell seals on the edge of the sea ice.

"The exciting aspect for me is that people can be directly involved with my research. Anyone in the world with internet can research alongside me by reviewing the satellite images and telling me what they see," says Dr LaRue.

Results and insights from the research will help relevant policy makers, industry experts and non-governmental organisations to protect the biodiversity of this unique habitat.

In the final few hours of her seasonal research in the Ross Sea region Marine Protected Area, Dr Eisert was standing on the edge of the sea ice collecting biopsy samples from adult whales when a juvenile type-C killer whale made its approach.

"It … bumped the camera with its nose, opened its mouth and showed me a piece of toothfish inside, as though it was trying to get me to take it. It was really special," Dr Eisert says.

Dr Eisert's research, which receives funding from donations through Tūāpapa Hononga o Te Whare Wānanga o Waitaha|UC Foundation, focuses on the Ross Sea region Marine Protected Area, and how the whales would be affected if fisheries impacted the availability of toothfish.

Dr Eisert's research is supported by Antarctica New Zealand and the Pew Charitable Trust through a Marine Conservation Fellowship.

*Dr Michelle LaRue with a crabeater seal. Photo credit: Jesse Hiatt*

## Gateway Antarctica

Gateway Antarctica is the Centre for Antarctic Studies and Research at UC. The centre plays a leading role in national and international Antarctic research projects. This includes areas such as engineering in extreme environments, Antarctica's role in climate change, connections between Antarctica and Aotearoa New Zealand, and human influences in and on Antarctica.

The centre offers three postgraduate programmes, including the Postgraduate Certificate in Antarctic Studies, which incorporates a field trip to the frozen continent.

*Photo credit Regina Eisert/@TPAonIce with support from Antarctica NZ*


*The UC students behind the rocket, are (left to right) Robbie Grove, Jack Davies, Matthew Furkert and Thomas Bell.*

# Waitaha Canterbury researchers rocket into astrobiology

**In early February, a rocket blasted off from the Waikato countryside, firing up through the clouds to an altitude of 31,000 feet [or 9,448 metres] – carrying with it the first biological experiments to be launched and recovered from a rocket in Aotearoa New Zealand.**

Named Into the Blue, the rocket was designed and built by a team of students from the UC Aerospace Club, including Matthew Furkert, Jack Davies, Robbie Grove and Thomas Bell. It boasted cutting-edge technology in the form of an active air-braking system and real-time data transmission.

Held in the rocket's payload bay was a chassis containing two biological experiments that featured plant and microbial cultures. The team hoped to test the feasibility of biological or biochemical experiments on domestic rocket launches, explains UC biochemistry researcher Dr Sarah Kessans.

Two experiments were trialled for the inaugural launch. The first, in collaboration with biotechnologist UC Associate Professor David Leung, involved cell cultures (in solid nutrient media) of Pinus radiata (pine).

"As we progress from these initial feasibility studies, culturing wood-forming Pinus radiata cells in low Earth orbit will give us an understanding of cell physiology in microgravity, leading to the future in situ production of building materials on the moon and Mars," Dr Kessans says.

The second experiment, in collaboration with Waitaha Canterbury brewers Mr Damien Treacher and Mr Mark Waller of brewpub The Laboratory, saw Saccharomyces cerevisiae (brewer's yeast) in the payload to determine effects of rocket flight on microbial production of valuable secondary metabolites during the fermentation process.

*Biochemist Dr Sarah Kessans with the biological payload for Into the Blue.*

"The initial launch was a great success, with many lessons learnt which will help us to optimise biological payloads on subsequent rocket launches," says Dr Kessans.

The experiments were well received by both rocket enthusiasts and members of the public, attracting hundreds of spectators.

# UC's custom-built race cars dazzle judges

**Formula Student is an international engineering-design competition where more than 600 racing teams from around the world design, construct and race single-seat race cars.**

The competition presents students with the opportunity to develop their skills in design, management, manufacturing, communication and business operations in a real-world environment.

Made up entirely of UC students, the University of Canterbury Motorsport team (UCM) was proud to showcase the two combustion and electric race cars it designed and built at the four-day Formula Student competition near Melbourne, Australia in December 2018.

Their combustion and electric race cars took home multiple awards at the hotly contested international competition. The electric car – which impressed both on and off the track – was the first four-wheel electric race car to be built in Aotearoa New Zealand.

Faculty advisor to the UCM team, UC Design Engineer Bruce Robertson, was extremely proud of the team's showing.

"We had students involved from across the University, including Mechanical Engineering, CAPE [Chemical and Process Engineering], Civil [and Natural Resources Engineering], Electrical [and Computer] Engineering, Commerce, and Product Design – every one of whom is an outstanding ambassador for UC," he says.

> 'The electric car – which impressed both on and off the track – was the first four-wheel electric race car to be built in Aotearoa New Zealand.'

*Photo: The UC Motorsport team, made up entirely of UC students.*


*Education Minister Hon Chris Hipkins (left) and Health Minister Hon Dr David Clark opening the Manawa facility.*

# Ministers open healthcare training facility of the future

**Education Minister Hon Chris Hipkins and Health Minister Hon Dr David Clark officially opened the Manawa health research and education facility in Te Papa Hauora Christchurch Health Precinct on Thursday 31 January.**

A collaborative partnership between Waitaha Canterbury's health and education sectors, Manawa brings together UC's health research, Ara Institute of Canterbury's nursing, midwifery and medical imaging programmes and Canterbury District Health Board's (Canterbury DHB's) professional development training, in one state-of-the-art facility.

Manawa, meaning heart, patience and breath, is the name Te Pākura Ltd and local iwi bestowed on the facility, along with designs of cultural significance. Manawa also refers to the proverb "Manawa whenua, manawa tangata", which makes the intimate connection between human health and the health of our environment.

"UC's partnership with Canterbury DHB and Ara in the Manawa building is an exciting opportunity for staff and students," says Professor Gail Gillon, director of the Child Well-being Research Institute at UC.

"They now benefit from connecting with health leaders, influencers and peers by being part of the Health Precinct, and the new research and development opportunities will expand our students' experience."

Located next to Christchurch hospital, Manawa is a flagship facility of the Health Precinct – a creative and inspiring hub that integrates world-class healthcare, research and innovation, education and industry.

The facility was blessed by local hapū in a cultural ceremony prior to occupation in July 2018.

## Manawa

Manawa is a collaborative healthcare research and education facility that brings together:

- UC's postgraduate health research
- Ara Institute of Canterbury's nursing, midwifery and medical imaging programmes
- Canterbury District Health Board's professional development training

# Waiata–Psalm 121 unveiled to commemorate the Waitaha Canterbury earthquakes

**A painting by senior Māori artist and UC graduate Darryn George serves as a marker of the earthquakes.**

George has gone back to his Christian-Māori roots with his commission for the University. Waiata-Psalm 121 is the final work in his Karakia series, which is a personal response to the Waitaha Canterbury earthquake of 2011.

Te Tari o te Amokapua Māori | Office of the Assistant Vice-Chancellor Māori commissioned George to produce the painting. It also funded the work, along with the UC Art Acquisition Committee and Te Tūāpapa Hononga o Te Whare Wānanga o Waitaha | UC Foundation.

George has a strong exhibition profile, having won many awards and scholarships, and his work is held in all major Aotearoa New Zealand public art collections and in collections around the world.

“I like to play with paint, to see what you can do with it,” says George. “I use a spray gun, a roller, and paintbrushes thick and thin; [and] masking tape to control the paint, so I can vary the effects of the tools I use. This artwork uses all of those elements.”

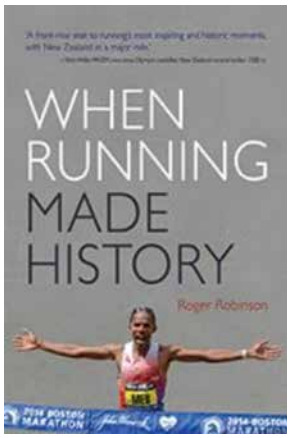
Unveiled on 19 January in Te Ao Mārama building, the work is displayed on the ground floor foyer of Te Tari o te Amokapua Māori Office of the Assistant Vice-Chancellor Māori.

George has a strong exhibition profile, having won many awards and scholarships.

# A superb depiction of the modern running movement

**Emeritus Professor Roger Robinson has been witness to many great moments in the history of running, along with moments when running made history in ways beyond sport.**

Through a unique cross-over of literature, history and autobiography, Emeritus Professor Robinson brings to life the days when running shaped the world. He tells of running in Berlin at the moment of German reunification and in New York's Central Park on the day the Twin Towers fell. He also relates how he helped a stadium crowd mourn for the lives lost in the 2011 Ōtautahi Christchurch earthquake.



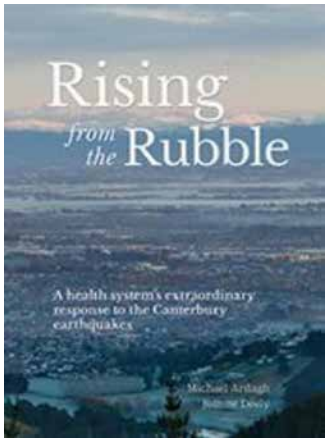

*When Running Made History, published by Canterbury University Press. RRP $39.99.*

# How do healthcare workers manage disaster on an unprecedented scale?

**The 2011 Waitaha Canterbury earthquakes were more challenging to the region's health system than anyone could have expected.**

Yet many apparently ordinary people – hospital and laboratory staff, general practitioners, pharmacists and more – accomplished extraordinary things in the aftermath of such devastation.

Based on interviews with those who lived and worked through the earthquakes, as well as the lived experiences of authors Dr Michael Ardagh and Dr Joanne Deely, Rising from the Rubble is an inspiring testament to commitment and recovery.




*Rising from the Rubble, published by Canterbury University Press. RRP $39.99*

## Canterbury University Press

Established as a publications committee in 1964, Canterbury University Press (CUP) has operated as a full-time publisher since 1991, producing about six new books each year. CUP publishes a wide range of titles about Aotearoa New Zealand and the Pacific for both the academic and the general market, and has recognised expertise in history, biography, natural history and the environment.

# International climate and peace experts' workshop with student leaders

**In February 2019, the Student Volunteer Army Foundation and Te Pokapū Pāhekoheko Hapori |UC Community Engagement Hub hosted an international team of leading education experts, whose specialities included climate resilience, multiculturalism and peace education.**

While in Ōtautahi Christchurch, the team visited inspirational post-quake sites including Gap Filler's Dance-o-Mat, Tūranga central library, the Transitional Cathedral and the Margaret Mahy Playground.

*International peace educator and co-founder of the Institute of Climate and Peace Dr Maya Soetoro-Ng and Chair of the Student Volunteer Army Foundation Sam Johnson.*

After exploring the city's changing context, Dr Maya Soetoro-Ng – author, peace educator and co-founder of the Institute for Climate and Peace – facilitated a roundtable discussion on leadership for social change with young leaders from the University and local high schools.

Sam Johnson, chair of the Student Volunteer Army Foundation, was thrilled the team asked to have an event so closely aligned with the Foundation's priorities.

Also enthusiastic was Associate Professor Billy Osteen, director of the Te Pokapū Pāhekoheko Hapori |UC Community Engagement Hub, who saw the visit as an opportunity to both showcase the innovation and creativity of post-quake Ōtautahi Christchurch, and learn what more can be done through education to advance climate resilience, peace and social change.

# Student Volunteer Army reconnects with Parkland students in Florida

*2018 Student Volunteer Army President Josh Blackmore (left) and SVA Vice-President Emma Pratt.*

**Twelve youth leaders from UC's Te Hunga Tūao | Student Volunteer Army (SVA) were recognised by the cities of Parkland and Coral Springs during a visit to the state of Florida in the United States of America in late 2018.**

The presentations honoured the UC students for reaching out across the world to Marjory Stoneman Douglas High School students with an invitation to visit Ōtautahi Christchurch for a Youth Leadership Summit in July 2018.

The outcome of the UC-hosted summit was a white paper – or 'how to' guide – on organising youth movements titled "10 Essential Lessons: Sustaining a Youth Movement".

SVA President Josh Blackmore enjoyed the opportunity to re-engage with SVA's new Floridian friends.

"[They] have done such incredible work connecting people to an issue which has affected their lives so profoundly. It is incredible to witness young people across the world stepping up and leading movements of change," he says.

UC's visiting students were accompanied by Associate Professor Billy Osteen, an SVA Foundation trustee, who believes the visits would be transformative for both American and Aotearoa New Zealand students.

"[That transformation comes from the] shared experiences and common interests in learning and emerging from tragedy with a purpose and a passion to empower and influence others," Associate Professor Osteen says.

> 'It is incredible to witness young people across the world stepping up and leading movements of change.'

The trip was made possible thanks to SVA student fundraising, together with support from the University, Tūāpapa Hononga o Te Whare Wānanga o Waitaha | UC Foundation, Air New Zealand and the hosting parties.

## Te Hunga Tūao Student Volunteer Army

Following the Waitoha Canterbury earthquakes the Student Volunteer Army (SVA) captured the imagination of New Zealanders as UC students, their studies temporarily suspended, hit the streets of Ōtautahi Christchurch to shovel silt and provide assistance to communities in distress. SVA is now UC's largest student club at over 2,000 members and continues to volunteer in various community projects.

# Ngāi Tūāhuriri and UC formalise long-standing relationship

**In early March 2019, representatives from Ngāi Tūāhuriri and Te Whare Wānanga o Waitaha | University of Canterbury (UC) met at Tuahiwi marae to formalise and extend the longstanding relationships between the hapū, including the relationship between Te Rūnanga of Ngāi Tahu, and the University.**

The agreement, which outlines the principles and mechanisms for working together into the future, is consistent with Te Tiriti o Waitangi and its principles. This includes supporting the use of te reo and tikanga Māori at UC, as well as supporting Ngāi Tūāhuriri and Ngāi Tahu students and aspirations for Ngāi Tahu development in the Waitaha Canterbury region and beyond.

"Ngāi Tahu takes academic achievement in all disciplines seriously. We are excited about this partnership because it will help contribute to the relevance of the University to the regional economy and to Māori," says Ngāi Tūāhuriri representative Gabrielle Huria.

UC Tumu Kaunihera | Chancellor Ms Sue McCormack says, "This is a journey UC began a long time ago in developing a greater understanding of cultural inclusiveness and the principles of Te Tiriti o Waitangi in action."

> 'We are excited about this partnership because it will help contribute to the relevance of the University to the regional economy and to Māori.'

*UC Tumu Kaunihera | Chancellor Ms Sue McCormack and Chair of Te Ngāi Tūāhuriri Rūnanga Arapata Reuben after signing the agreement at Tuahiwi marae.*

## Todd on Torts

**With the latest edition of Aotearoa New Zealand's leading torts reference work, publishers Thompson Reuters New Zealand have honoured Professor Stephen Todd from Te Rāngai Umanga me te Ture College of Business and Law.**

In recognition of his contribution to this area of law both in this country and overseas, the book title of the Aotearoa New Zealand edition has been changed from *The Law of Torts* to *Todd on Torts*.

Published in April 2019, the book has reached its eighth edition. It is co-authored by UC Professor Ursula Cheer, UC Associate Professor Cynthia Hawes and Professor Bill Atkin from Victoria University of Wellington, all specialists in the particular areas of the law where torts can occur.

Torts are civil wrongs in which someone harms another person in a way that allows them to bring an action against that.

Professor Todd describes the law of torts as "a large sprawling subject", within which the most significant focus is liability for negligence. It covers diverse situations such as causing damage in a car accident, noisy neighbours disturbing the lives of others, wrongfully arresting a shopper, defaming or maliciously suing a person and wrongfully taking someone's property.

Professor Todd explains that in the three years since the previous edition was published, a lot has changed.

"New areas emerge, such as the tort of invasion of privacy. Torts being part of the common law, inherited from England, means new decisions of common law courts from around the world are influential here," he says.

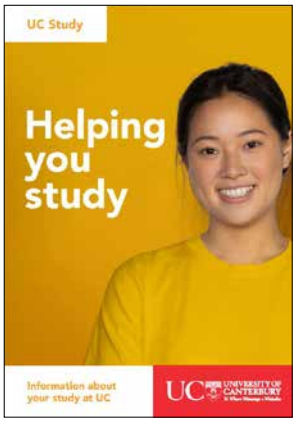
The book is considered the definitive text for law students and lawyers and is the most cited reference work in decisions by Aotearoa New Zealand courts.

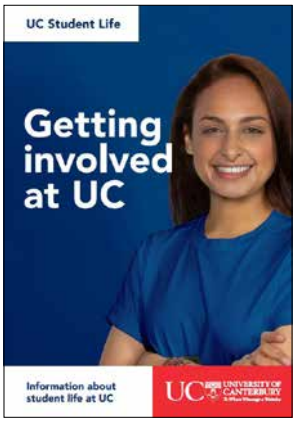
# New initiatives enhance student experience

**UC is working hard to ensure new students have the best experience possible at the University, with easy access to everything they need to succeed in their studies.**

Three new handbooks focusing on study, wellbeing and student life were launched at the start of Semester 1, 2019. Each handbook holds essential information on its topic in one place, including about related support services, programmes and facilities on campus.

> 'For each of their first seven weeks at UC, new students received an email addressing some of the issues they may face when starting university, such as homesickness and fear of failure.'


The UC Study handbook gives tips to help students develop the skills they need to succeed academically, while UC Wellbeing outlines how to access support on campus, encouraging students to ask for help when they need it. The third handbook, UC Student Life, encourages students to make the most of their time at UC by getting involved in a range of activities.

A virtual toolkit was also introduced to give new UC students the information they need at the right time. For each of their first seven weeks at UC, new students received an email addressing some of the issues they may face when starting university, such as homesickness and fear of failure. Content provided was created following student surveys and feedback, and included information and advice to students, based on when they needed it.

March saw the launch of UCGo. This mobile app is aimed at making it easier for students to organise and manage their study by giving them access to the tools they use every day – such as student email, LEARN and their class timetable. UCGo also provides easy access to student support services, the latest student news and UC RecCentre timetables.

Continuous improvements will be made to the app where possible and students can provide feedback and ideas for future functionality.

Momentum also continues to build with the Ākonga ki Mua | Student First programme, which is preparing UC for the future and putting students at the heart of our work. Dedicated to transforming the student administration experience, Student First aims to make processes like enrolment simpler, faster and more certain for students.

# Events

## Open Day Rā Tōmene 2019

**Thursday 11 July 2019**

UC's annual Open Day | Rā Tōmene is an opportunity to find out everything you and your whanau want to know about UC:

- Attend information sessions to find out about our world-class degrees.
- Tour departments, accommodation options and state-of-the-art campus facilities
- Talk with lecturers and students one-on-one
- Find out how to apply to UC and what scholarships and support are on offer to you
- Experience what life as a UC student is really like by taking part in student activities at Open Day | Rā Tōmene.

Registrations for the event are open now. For more information about the day, please visit: ***www.canterbury.ac.nz/openday***.

## UC Connect

**Wednesday 31 July**
Amy Fletcher – (POLS/Arts)
*Never Say Die – Silicon Valley and the pursuit of immortality*

## Ekea! Year 12 Pathways for Māori

**9.30am – 1.30pm, Friday 2 August 2019**
**UC Undercroft, Puaka James Hight building**

Ekea! is an opportunity to inspire rangatahi Māori about their futures and how a tertiary education can help them achieve their goals. This exciting day provides a fun and interactive way for rangatahi to get to know the campus and discover how their interests and NCEA subject selections can lead to future opportunities at UC.

Enquiries: liaison@canterbury.ac.nz

## UC Connect

**Thursday 8 August**
Philippa Martin (Electrical Eng)
*Women on the bleeding edge of engineering*

## Alumni and UC Foundation events

**Alumni Speaker Series**

- August – in Dunedin with guest speaker, Sandra Clair

**Wellington**

- July – Alumni chapter function at the Wellington Club

**Tekapo**

- September – Mt John alumni Weekend with the Stars

**Ōtautahi Christchurch**

- October – Golden Graduates afternoon tea

Further details on alumni events can be found from www.canterbury.ac.nz/alumni/alumni-events/.

Invitations are sent via email, if you do not receive emails from the alumni office please contact us to update your details.

Email: alumni@canterbury.ac.nz
Phone: +64 3 369 3839

## UC Journalism 50th

**7.00 – 11.00pm, Saturday 7 September**

Join us for a cocktail event with guest speaker, alumni and broadcaster Kim Hill, as we celebrate 50 years of postgraduate journalism at UC.

Email: journalism@canterbury.ac.nz
Phone: +64 3 3695846 ext. 95846



## Keep in touch

**News –** for a regular email update on the latest UC news email communications@canterbury.ac.nz "UC News"

**Social –** Facebook@universitycanterbury, Twitter @ucnz or LinkedIn "University of Canterbury" and specific colleges.

# GROWING PRIDE IN TE AO MĀORI

RUBY. NGĀTI POROU
SCIENCE & ARTS

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UNIVERSITY OF CANTERBURY
*Te Whare Wānanga o Waitaha*
CHRISTCHURCH NEW ZEALAND