

October 2011

Chronicle

He Kupu Whakamahara



Marsden
boost for UC
researchers

Does MMP just need tweaking?

PM praises SVA

Top rating for UC in new international ranking system

The University of Canterbury has become the first New Zealand university to receive a 5-star rating in the newly established international QS Stars rating system.

A 5-star rating is the highest rating available in the new system which evaluates universities against eight criteria including research quality, teaching quality and graduate employability.

The QS Stars rating system is a global rating system for universities and is administered by the same organisation that delivers the QS World University Rankings. Universities must meet minimum thresholds in a variety of areas to earn ratings ranging from one to five.

According to QS Stars, a university that achieves a 5-star rating "will often be world-class in a broad range of areas, has cutting-edge facilities, and is internationally renowned for its research and teaching faculty". The University of Canterbury's 5-Star rating was determined following the 22 February earthquake using data from 2010.

"We are delighted that the University of Canterbury has achieved the highest possible rating in the relatively new QS Stars rating system," said UC Vice-Chancellor Dr Rod Carr. "This affirms the University's position as being amongst the best universities in the world and underlines the fact that UC continues to provide a world-class learning environment."

A key criterion on which universities are judged is what is referred to as their "third mission". QS Stars describes this as "how seriously the university takes its obligations to society by investing in the local community, and providing access through scholarships and bursaries".

"The University of Canterbury takes its 'third mission' responsibilities seriously," said Dr Carr. "This has been reflected in our 5-star rating. We have substantially increased funding for our scholarships offer for next year and I strongly encourage all prospective and existing UC students to find out more about our scholarships for 2012 and beyond."

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Associate Professor Emily Parker is among UC Marsden Fund recipients.

Thanks to everyone else who's played a part making this issue happen.



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Gardens bloom brighter thanks to donation.

\$3 million Marsden funding boost for UC researchers

University of Canterbury researchers have been awarded nearly \$3 million in funding in this year's Marsden Fund round.

The government-funded awards, administered by the Royal Society of New Zealand, are regarded as a hallmark of excellence, allowing New Zealand's best researchers to explore their ideas. The fund supports projects in the sciences, technology, engineering and maths, social sciences and the humanities.

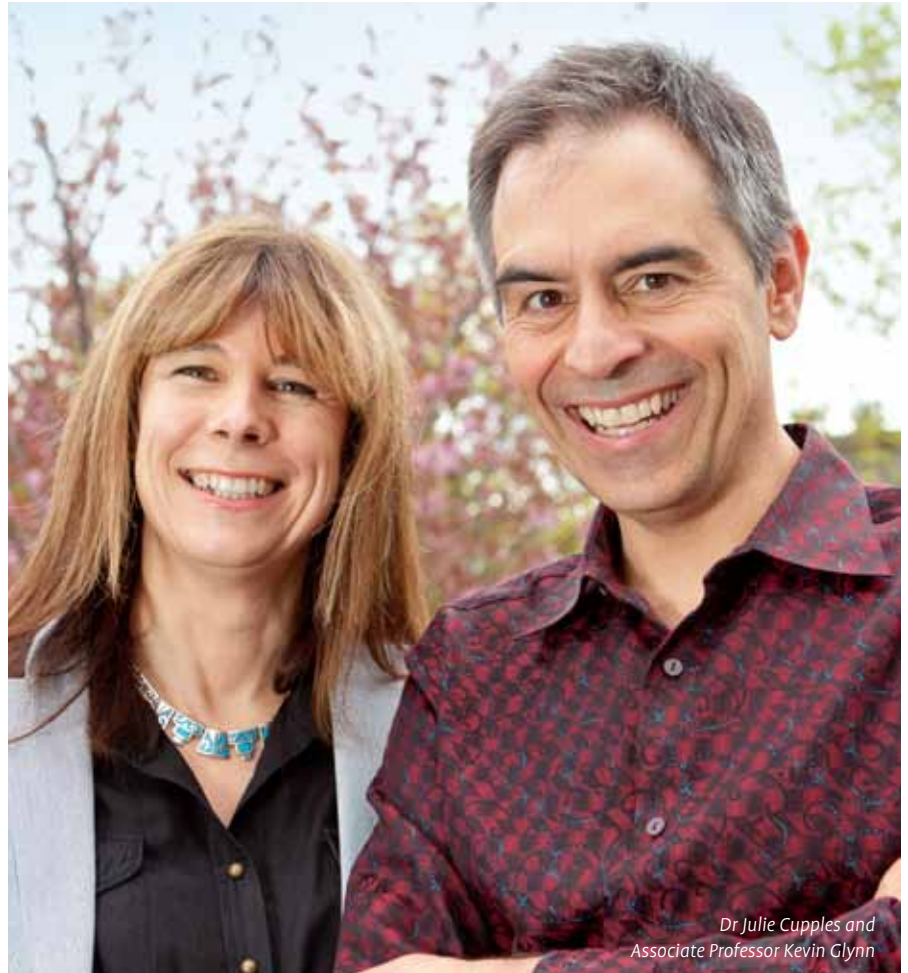
UC received grants for six research projects totalling \$2.9 million over three years.

The largest single fund for a UC project went to American Studies lecturer Associate Professor Kevin Glynn (Humanities) and Dr Julie Cupples (Geography). They will receive \$800,000 over three years for their research, "Geographies of media convergence: Spaces of democracy, connectivity and the reconfiguration of cultural citizenship".

"We are currently living through a period in which centralised forms of media, such as national television and mainstream journalism, are perceived to be in crisis. This crisis is creating new spaces for the development of alternative ways of knowing, watching and making media," said Professor Glynn.

"This project is designed to advance incipient dialogues between human geography and media studies by asking how practices within popular cultures of media convergence can contribute to the construction or renovation of democratic citizenship.

"We are extremely pleased about the Marsden Fund's support for this unique and exciting interdisciplinary research project situated at the cutting edge of our respective fields of expertise: media studies and geography. We believe this project will enable us to learn a great deal about how emergent media ecologies are reshaping the spaces and practices of democracy, cultural contestation and citizenship



Dr Julie Cupples and Associate Professor Kevin Glynn

throughout the world," Professor Glynn added.

Associate Professor Emily Parker (Chemistry/Biomolecular Interaction Centre) will receive \$735,000 over three years for her project titled "Retracing the evolution of enzyme regulation: understanding the molecular mix-and-match that gives rise to sophisticated metabolic control".

Professor Parker said precise control of metabolism was of crucial importance to living organisms but enzymes had evolved a remarkably complex array of strategies to alter their activity in response to chemical signals.

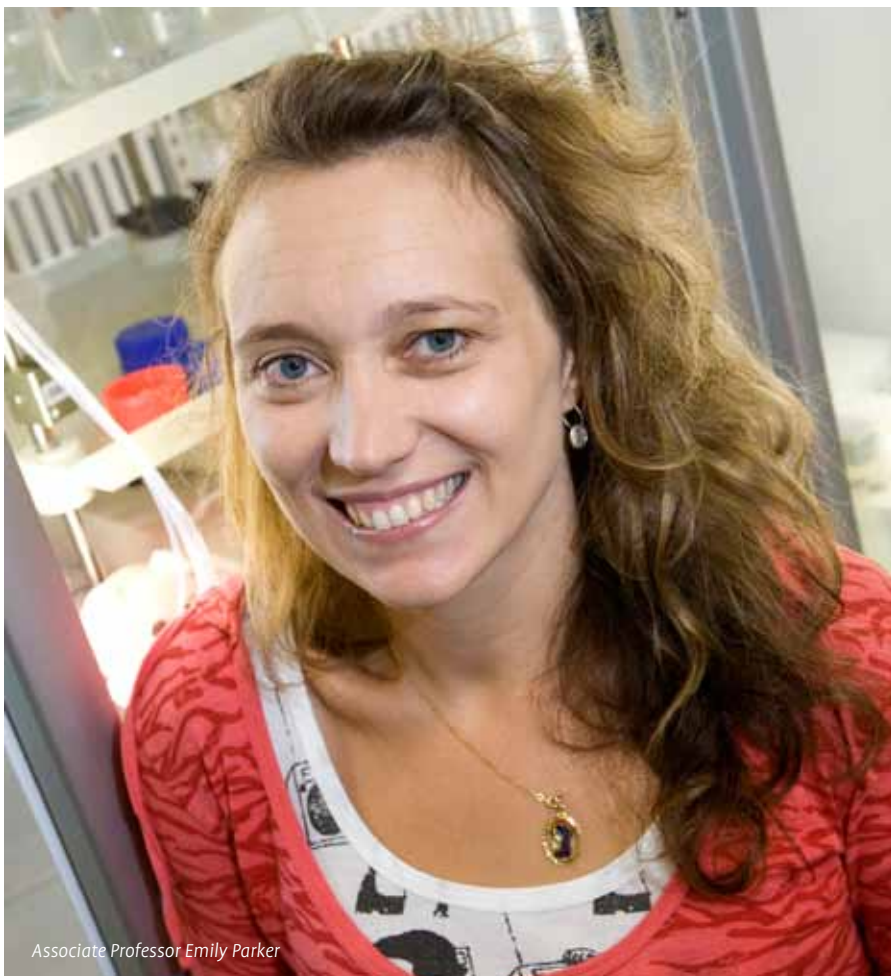
"The research will inform the design of novel biocatalysts and will assist the development of new models for antibiotics

against pathogenic organisms."

Dr Mathieu Sellier (Mechanical Engineering) will receive \$337,696 over three years for his research into the role digital microfluidic devices play in nano and biotechnologies. He is investigating previously unexplored propulsion mechanisms by mixing droplets of different substances.

Three UC academics were each awarded Fast-Start grants worth \$345,000 over three years for early career researchers. They are Dr Daniel Stouffer and Dr Pieter Pelsler (Biological Sciences), and Dr Pedro Lee (Civil and Natural Resources Engineering).

Dr Pelsler, working with UC adjunct fellow Dr Julie Barcelona, will research the topic "Untangling a vine and its parasite: the importance of cospeciation, host-



Associate Professor Emily Parker

switching and geographic isolation in the evolutionary history of *Tetrastigma* and *Rafflesia*". The research aims to identify the factors driving parasitic plant evolution through the study of the Philippine species of the parasitic genus *Rafflesia* and its host plants.

Dr Stouffer will use his funding to investigate the topic "Bringing ecology full circle: Understanding species-level consequences from a community perspective". He will look at how the interactions between species within ecological communities allow us to better understand the importance of different species in ecological networks.

Dr Lee will use his Marsden Grant to research the topic "Can fluid pipeline systems be used for communication?

Fundamental investigation into the distortion and attenuation of fluid transient signals in pressurised liquid conduits".

Dr Lee will investigate the behaviour of fluid transients — high speed compressive waves that transmit through pressurised channels. His findings have the potential to allow fluid conduits to act as a medium for information transfer. One of the applications for this research is a non-intrusive method of locating leaks and blockages in pipelines. Information carried by the fluid transients can be used to rapidly diagnose the condition of piping systems without the need to shut down or drain the pipe.

Scheme guarantees scholarship and accommodation

The University of Canterbury has announced the launch of its 2012 UC Guarantee.

Under the UC Guarantee students who are new to the University and who achieve merit or excellence endorsements at Level 2 or Level 3 in NCEA or its equivalent are guaranteed to be eligible for scholarship funding provided they meet University Entrance requirements. They are also guaranteed an offer of accommodation at UC if they are studying full-time.

Students who receive an endorsement will automatically get a scholarship once their enrolment at UC is confirmed.

"An unlimited number of scholarships are available for new students who meet UC's criteria for its new Undergraduate Entrance Scholarships," said Vice-Chancellor Dr Rod Carr. "The scholarships are valued between \$1000 and \$3000."

The University's halls of residence offer accommodation options from fully catered halls to self-catered apartment-style living.

"The halls of residence offer a safe and supportive environment for living and study and are only a few minutes' walk from our leafy campus. While we cannot guarantee students the hall of their choice we can guarantee them a place in a hall.

"Enrolments at UC opened on Tuesday 4 October. We look forward to welcoming new and returning students to our great learning environment in 2012 and encourage all students who are new to UC to take advantage of the 2012 UC Guarantee."

Visit www.canterbury.ac.nz/scholarships for more information about the UC Undergraduate Entrance Scholarships and other scholarships on offer at UC.



Dr Anthony Poole

UC researchers awarded prestigious fellowships

Two University of Canterbury researchers have been awarded prestigious Rutherford Discovery Fellowships totalling \$1.6 million over five years to help them develop their research careers in New Zealand.

Dr Christopher Hann (Electrical and Computer Engineering) and Dr Anthony Poole (Biological Sciences) are among 10 recipients of the fellowships, which are administered by the Royal Society of New Zealand.

Dr Hann and Dr Poole will each receive \$160,000 per year over a five-year period. The aim of the scheme, set up by the Government in 2010, is to support researchers in the three to 10-year period after they have completed a doctoral degree. The funding will enable the researchers to investigate particular research topics and help them establish their careers in New Zealand.

Dr Hann, a UC alumnus, will use the funding to progress his work in the development of a system to control rockets.

His work will involve building a mathematical model of the rocket as it is travelling through space, including directly

identifying random wind loads to allow prediction and stabilisation of the rocket. This approach will avoid the need for costly trial and error runs currently used to tune the control systems and significantly reduce the long turnaround time required to launch and accurately position a payload.

Dr Hann said he had been given “a fantastic opportunity to pursue exciting research in New Zealand”.

“The Royal Society has had a great history of funding scientific projects and I feel honoured to be part of that.”

Dr Poole, a senior lecturer in genetics, will use the fellowship to use a combination of computational and experimental approaches to test four specific hypotheses relating to the emergence of biological complexity with the aim of elucidating the mechanisms by which complex molecular and cellular systems evolve.

Dr Poole said when looking at the inside

workings of a cell it was easy to think that the enormous complexity we saw reflected a well-honed and well-adapted machine.

“But complex is not necessarily better – sometimes a simple streamlined system is more efficient than a needlessly complex one. What I am hoping to do is to test the conditions under which biological complexity evolves, and to understand how it persists. We want to work out the genetic conditions that are conducive to the emergence of such complexity. I’m excited by the prospect of building a team of talented students and postdocs to work with me on these problems.”

Dr Poole said that as a scientist, UC was a “really exciting place to work”, with new research labs and a talented cohort of local and international students being attracted to the School.

“I’m very pleased to have the opportunity to contribute to a strong research culture at Canterbury and to be working alongside students as they develop



Dr Christopher Hann

into great young scientists.”

The chairperson of the selection panel, Professor Margaret Brimble, said the high calibre of the applicants made choosing the final 10 a difficult decision.

“Those chosen demonstrated exceptional talent and promise. We believe they will be New Zealand’s future research leaders and are worthy of this investment.”

Returning UC students to benefit from post-earthquake generosity

The University of Canterbury is to offer 95 new scholarships of \$2000 each to returning students in 2012, thanks to the generous donations of UC alumni and friends to the UC Foundation’s 2011 Earthquake Scholarships Appeal.

The UC Foundation launched the Earthquake Scholarships Appeal in April as a way for UC alumni and friends to help quake-affected students.

The response was overwhelmingly positive with \$270,000 having been raised, exceeding the original fundraising target by more than a third.

“We are thrilled and delighted by the generous support that has been shown to UC students in response to our appeal,” said UC Foundation Chair, Barry Ramsay.

“The total amount raised is almost eight times more than the amount raised in previous alumni appeals.

“Not all of the funds raised are to be given out as scholarships – a number of donors have specified that their gifts be directed to particular purposes, or colleges, departments or programmes and we will be facilitating those targeted donations.

“We told donors that they had the opportunity to make a huge difference for UC students affected by the earthquakes and help us to keep our best and brightest students at the University of Canterbury and they have responded with a very meaningful show of support for UC students and the University itself.”

Colleges and the School of Law have been asked to nominate students they feel are deserving of the scholarships. Scholarships have been allocated to the colleges and School of Law on a pro rata basis. Both domestic and international students are eligible for the scholarships.

The scholarships will be awarded based on academic merit to high-performing students, with nominators being asked to take into account the whole situation of the student, including any significant impacts suffered or special contributions made by the student in response to the earthquakes this year.

The University has also provided additional financial support to postgraduate students. Existing scholarships have been extended for

students whose research projects were delayed and disrupted by the quakes, and 250 new summer research scholarships of \$5000 each will be awarded to honours and postgraduate students this year.

“These scholarships are an important acknowledgment of our current students and the significant resilience that they have shown this year,” said Vice-Chancellor Dr Rod Carr. “They are our leaders of the future and we need them to stay and help rebuild the new city that Christchurch will become.”

To be eligible for one of the 95 UC Foundation scholarships students must have been enrolled full-time in 2011 in a UC undergraduate programme and must be enrolled in a full-time programme of study in 2012. Preference will be given to students enrolling in their second year in 2012. Other students enrolled full-time during 2011 and continuing with full-time undergraduate study in 2012 are also eligible to receive a scholarship. Nominations must be received by UC’s Scholarships Office by 28 October.



Inventor jumps for joy

The recipient of the UC Innovation Medal for 2010 is Associate Professor Keith Alexander.

Professor Alexander (Mechanical Engineering) is well known for his “spring-free” trampoline, which now sells around the world and has won seven international awards including 2011 Product of the Year USA, 2010 Product of the Year Canada, 2009 International Design Award Australia and the 2009 Parents’ Choice Award, USA.

Professor Alexander said it was an honour to receive the inaugural award.

“This award is part of a culture change within the University that acknowledges commercial outcomes as part of what we do. I am really pleased to be part of the University celebrating innovation as something that it does, alongside its teaching and research.

“I have mixed feelings about the recognition because innovation and commercialisation processes depend on input from many people, not just the initiator.”

Deputy Vice-Chancellor Professor Ian Town said there was very strong competition for the inaugural UC Innovation Medal and he was “delighted to see the breadth and depth of innovation at UC as evidenced by the nominations received”.

Professor Alexander was a very worthy recipient of the inaugural award, said Professor Town.

“Many people may not be aware of his many other ideas which are in various stages on the way to commercialisation. These innovations range from jetboat

UC student wins major scholarship

steering mechanisms, snow probes, 'nifty lifters' through to micro-hydro plants."

Professor Alexander was a major driving force in setting up the University's Product Innovation Centre (PIC) and is its current director. PIC provides capability for academic and industrial partners to assist the transformation of research outcomes into new, innovative products.

"In the case of the Springfree Trampoline his innovation creates both wealth – selling well in a competitive international market – and beneficial value to the community by cutting down on the number of trampoline injuries. It has been estimated that if all the trampolines in the US were spring-free there would be 34,000 fewer children going to emergency departments each year."

Professor Alexander has subsequently been involved in improving the international safety standards for trampolines. He is the secretary of the American Standards ASTM sub-committee "Trampolines and related Equipment" and has the personal goal of making the standards more effective in reducing injuries. His trampoline has become the benchmark against which others are now measured.

"Keith's invention has created many jobs in New Zealand," said Professor Town. "All of the special rods for the trampolines are made by a firm in Gisborne that ships out more than 10 containers of product per year. Furthermore, the Chinese company which makes the trampolines has employed 10 UC graduates to help improve the design and manufacture of the product."

An event to mark Professor Alexander's achievement will be held at the end of October.



Kane O'Donnell

University of Canterbury science student Kane O'Donnell is heading to the United Kingdom next year after receiving a prestigious Woolf Fisher Scholarship.

The 21-year-old honours student is one of three New Zealand tertiary students to be awarded the scholarship, which will see him begin study at the University of Cambridge in October next year.

The scholarships provide recipients with full college and university fees and a living allowance. The annual value of each scholarship is close to \$100,000.

At Cambridge Kane intends to research quantum theory and gravitational physics.

"Current theories dictate that we live in a universe where size matters. Looking at the universe through a telescope, we see our solar system, where the planets orbit around the sun in a way governed by the

laws of gravity. But if we look through a really good microscope, we see things like atoms, where electrons are in a similar orbit around a charged nucleus.

"Even though these electrons orbit the nucleus in a similar way as the planets orbit the sun, the laws that govern how electrons move are completely different – they are the laws of quantum mechanics," Kane said.

Kane hoped that at Cambridge he would be able to help gain insight into why we have these two different sets of laws: general relativity and quantum theory. Ultimately, his goal is to find a theory of quantum gravity that unites the two, though he admits this is a very ambitious task.

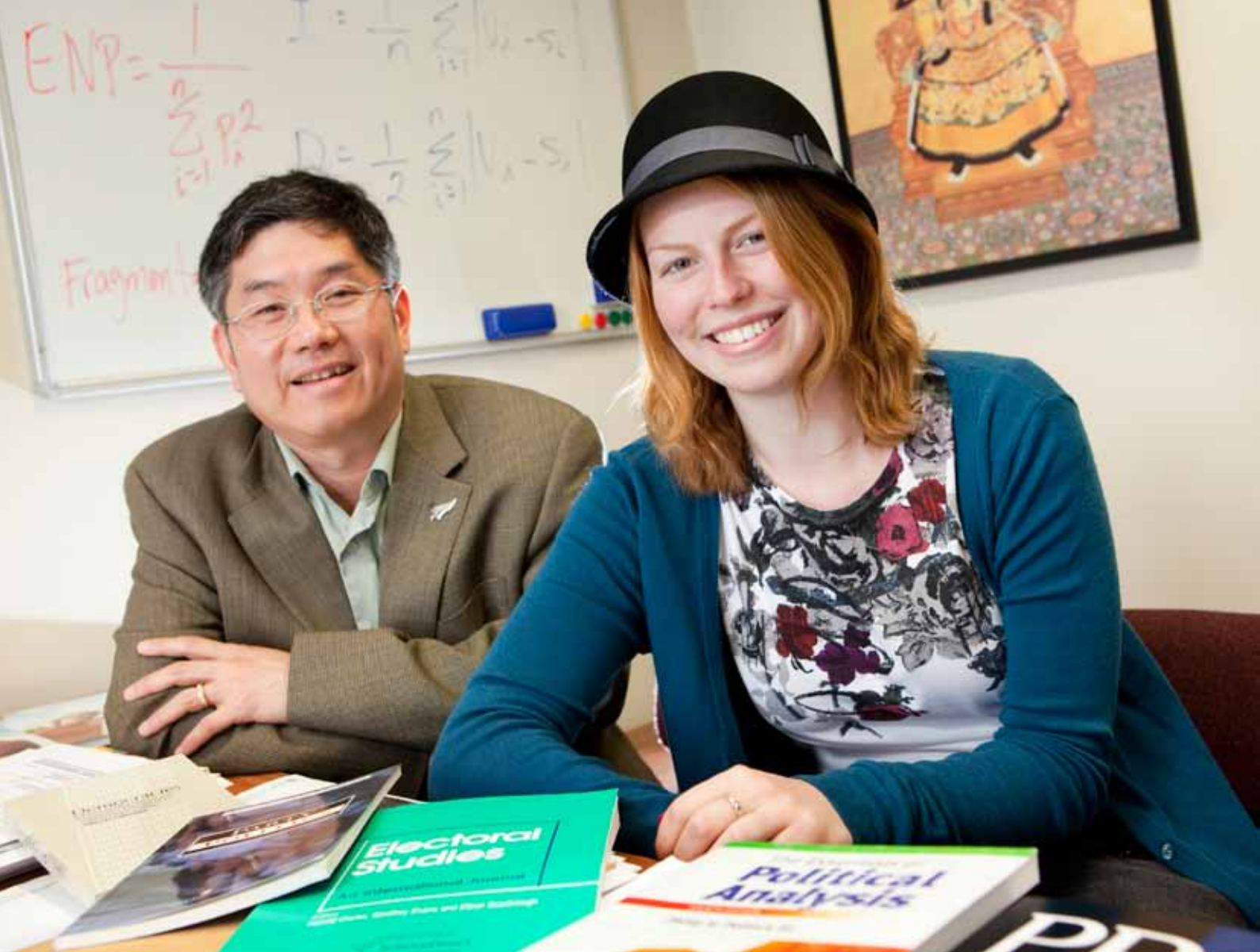
Kane recently returned from studies at the University of Oxford where he spent three months on exchange studying theoretical physics.

The Woolf Fisher Scholarship programme was established nine years ago by the trustees of the Woolf Fisher Trust to honour Woolf Fisher who was co-founder, with Maurice Paykel, of the Fisher & Paykel company and foundation chairman of New Zealand Steel.

Three scholarships, for three or four years of postgraduate research leading to a doctoral degree, are offered each year. Scholars are selected on their outstanding academic abilities and potential leadership.

Trust chairman Sir Noel Robinson said this year's shortlist reflected an outstanding calibre of scholars.

"The quality of our candidates is just so high now. We believe they each have the potential to take up leadership roles in New Zealand and there's no reason why all three students couldn't become world leaders in their own right."



Associate Professor Alex Tan and postgraduate student Stephanie Borthwick have been studying and “tweaking” NZ’s electoral systems.

Does MMP just need tweaking?

A University of Canterbury political scientist is calling on New Zealand politicians not to “throw the baby out with the bath water” when the results come in from November’s voting system referendum. Associate Professor Alex Tan (Social and Political Sciences) has been studying various electoral systems with his postgraduate students and how a few “tweaks” here and there can make a significant difference to election outcomes.

The paper was borne out of discussions in Professor Tan’s honours class last year and his co-authors are postgraduate students from that class – Stephanie Borthwick and Monique Eade.

The researchers conducted a simulation analysis of changes to the New Zealand electoral system, comparing the current MMP (Mixed Member Proportional) and the Supplementary Member system (or SM, also known as Mixed Member Majoritarian overseas) against a few new variables.

One of the scenarios they looked at was to change MMP’s 56-44% split between electorate and list seats to a 70-30 ratio.

The second scenario was to see what changing the threshold would do. Instead of the current 5% minimum threshold in order to gain seat allocation researchers looked at what effect raising the bar to 8% would have.

Using data from the NZ Electoral

Commission website for the 1999, 2002, 2005 and 2008 general elections researchers threw these new numbers into the mix and analysed what happened.

“What we found in this particular study was that tweaking the system can result in certain outcomes both opponents and proponents of MMP want,” said Professor Tan.

“Proponents’ argument is that a diverse New Zealand society needs to be represented while opponents say MMP is too complex and lowers the level of accountability.

“What many people want most from the government is to hold that government accountable but in a coalition who do you actually blame? You’ll have some voters saying ‘I didn’t vote for that small party so how come they have become the kingmaker’, and they see the tail wagging the dog.”

Professor Tan said it was very evident that the MMP system as it currently stood did create more multiparty governments. The study revealed that changing the balance of seats between districts and lists did have some effect on reducing the number of parties in parliament but not substantially.

“You will start to see differences once you change the threshold,” said Professor Tan. “Increase in the threshold level reduces the number of parliamentary parties and increases the likelihood of one-party majority government.”

Professor Tan said looking at the previous four elections, for example, under SM a one-party majority government would have resulted in all but the 2005 elections and with MMP the 2002 and 2008 election could have resulted in some scenarios in a single-party majority.

Professor Tan said one important factor was how close the election was. “The more competitive the election, the less likely a single-party government can win majority. This means that if accountability and single-party majority government is preferred by the electorate, the easiest way to reform the system is to simply increase the minimum threshold level without changing the two-vote MMP system.”

As New Zealand only switched from First Past the Post (FFP) to MMP in 1996, Professor Tan said it was “still young and learning”, compared to veteran MMP countries such as Germany which have had the system since 1957.

“Our conclusion from the study was should we throw the baby out with the bath water or should we just tweak the system instead? We might not necessarily need to make wholesale change.”

Professor Tan said his study might be taken as contentious but it was just “an experiment toying around with scenarios and counterintuitive things such as the assumption that MMP is always multi-party and SM always majority” and he hoped it added to the debate.

“Both sides of the debate – the opponents and proponents – are both right and wrong.

“However, the big question to ask is ‘what do we actually want out of our government?’ Do we want representation or efficient accountable governments? The relationship between representation and accountability is inversely related and you can’t have your cake and eat it too.”

Programme gives Pacific school pupils a boost

UC’s Pacific Development team has launched XL, an “Xtra Learning” outreach programme to improve the academic performance of Pacific youth in two Christchurch high schools.

The programme was rolled out in early September by UC Pacific Development staff to help Pacific Island students at Linwood and Aranui high schools with their studies.

The XL programme employs a squad of eight tutors who offer two-hour tutorials and workshops twice a week to the Pacific students as part of the first phase of the programme.

Coordinator of the scheme Riki Welsh said that the ultimate goal of the scheme was to encourage more Pacific Island students to Canterbury University.

“XL has two main focuses. The first is to build capacity so that more Pacific people are well equipped and ready for university should they choose to come here. The second is to mobilise that capacity. Many of our Pacific high school students are already capable of university study. However, because of the foreign nature of university and the disconnection between the institution and our community, many do not even consider university as an option. Pacific people struggle to picture themselves at university. XL is making huge progress in addressing this.”

The Pacific development team would like to see the XL programme extended to more schools next year.

Mr Welsh said the scheme had been very successful as it had attracted many students and believed that the quality of the tutorials and its “Pacific style” were the main reasons for XL’s success.

“XL is not just another after school homework club. If it was, the kids wouldn’t come. We have never had less than 40 students at a study session and we have to remember that it is completely voluntary. XL is infused with Pacific fun and flavour. It is learning in an environment that we are familiar with. But, nonetheless, it is a quality academic programme that is being delivered. We already have measurable results emerging from the programme.”

While XL had generated interest in the Pacific Island community, it will need further funding to continue next year. Mr Welsh said it would be a shame if the programme was discontinued as it has had been very positive for Pacific Island youth.

“The programme is excellent as it is, but it is constantly improving with regular feedback from students, teachers and tutors being implemented. There is potential for a much more advanced programme to be delivered next year if we are given the chance.”

Finau Fonua



The UC Pacific Development team’s Xtra Learning tutors.

Photo supplied.

PM praises SVA



Prime Minister John Key praised members of the Student Volunteer Army as “very fine young New Zealanders” at the inaugural UC Community Engagement Awards.

The Prime Minister was guest of honour at the awards ceremony which recognised 30 people for their post-earthquake service efforts. Also attending the ceremony on 23 September was Earthquake Minister Gerry Brownlee, Mayor Bob Parker, and Canterbury Earthquake Recovery Authority (CERA) Chief Executive Roger Sutton.

The awards were inspired by the actions of the Student Volunteer Army (SVA) and were established to recognise people who had embodied the University’s goal of being an institution of “people prepared to make a difference”.

Thirty members of the central organising group of the SVA received a Vice-Chancellor’s Certificate of Community Engagement and a share of \$35,000 of scholarship funds.

Sam Johnson, the founder and leader of the SVA, was one of 12 to receive a Gold Award and a \$1500 scholarship. Sam’s citation noted he was “a truly community-minded individual, with a genuine desire to help all those around him. He handles the pressure associated with this very public position with poise and maturity.”

Other Gold Award recipients were Anthony Rohan, Christopher Duncan, Thomas Young, Jonas Bergler, Samuel Gifford, Jade Rutherford, Gina Scandrett, Kohan McNab, Louis Brown, Morgan Perry and Nathan Durkin.

Mr Key likened the Student Volunteer Army to the Tongan rugby team.

“You were a participant in a major event but disproportionately your contribution was above and beyond that of others. You

have demonstrated that young people are very caring. You are very fine young New Zealanders who are going to be great leaders of our country.”

Mr Key asked the SVA to keep up the great work with all the things that they were doing and expressed the hope that Christchurch would not need them to mobilise again in response to a natural disaster.

“Please thank the many thousands who worked with you. It wasn’t just the digging of silt or the knocking on doors to see if people were okay that was wonderful to see, it was the fact that you were there and that you mobilised so quickly. People could see that you cared. No doubt you will go on to achieve great things.”

Vice-Chancellor Dr Rod Carr said that it was not surprising to him that UC had provided the fertile ground for the response seen from the Student Volunteer Army following the September 2010 and February 2011 earthquakes. “But it was amazing to see it happen and take the form that it did.”

He said that UC staff and students contributed to the community in ways that were under-recognised but that the launch of the University’s new service learning programme, CHCH 101 Rebuilding Christchurch: An Introduction to Community Engagement in Tertiary Studies, had now put an academic framework around service learning at UC and at other institutions, including, most recently, the University of Vermont in the United States.

Dr Carr commended the award recipients for their use of new technologies, their organisational abilities and the way in which they had established their own place in history.

“UC students who have been through this experience have been defined by it. They are a resilient crew and I have an enormous respect for those who are here today and those that they represent.”

Pictured above: Prime Minister John Key with Student Volunteer Army founder Sam Johnson.

Building safety focus of new doctoral scholarship

A University of Canterbury scholarship, set up in memory of those who died when their buildings collapsed in the 22 February earthquake, aims to reduce the loss of life in future seismic events.

The Earthquake Safe Buildings Doctoral Scholarship, worth \$21,000 a year for three years, will support doctoral research that focuses on human safety in building design and construction techniques. The research will be supervised by the Civil and Natural Resources Engineering department.

The scholarship was initiated by Associate Professor Maan Alkaisi (Electrical and Computer Engineering), who lost his wife, Dr Maysoon Abbas, in the collapse of the CTV building.

Professor Alkaisi, who contributed a \$1000 grant to the scholarship, said after seeing the city's collapsed buildings he wanted to do something to prevent such events from happening again. One way was to support research that would ensure human safety was paramount in the design of the city's new buildings.

"This is especially relevant now that we have a wealth of new information about the risk of earthquakes here in Christchurch, the nature of the soil under the city, and about the frequency and magnitude of aftershocks," he said.

"All this new information has to be taken into consideration in the rebuilding of Christchurch and one way the University can have input into the rebuilding process is by supporting research that will look into these issues in more detail and produce new ideas that can be put into good use.

"Rebuilding Christchurch is going to be a long-term project so by the time this PhD work is finished it will be timely and useful."

Professor Alkaisi said the scholarship would not have been established without the support of Pro-Vice-Chancellor (Engineering) Professor Jan Evans-Freeman and the Department of Civil and Natural Resources Engineering.

While only one scholarship was available so far, Professor Alkaisi hoped to attract support for future scholarships from the building and construction industry.

"If we can make sure that the human safety factor is taken into consideration in new building design I think that will send a good message to the people of this city, and elsewhere, that we have a safe and much better prepared city."

Applications for the scholarship close at 5pm on 15 November. More information and the application form can be found at www.civil.canterbury.ac.nz/scholarshipsPG.shtml.

Top award for UC educational computing leader



Professor Tanja Mitrovic (Computer Science and Software Engineering) has been awarded a Distinguished Researcher Award by the Asia-Pacific Society for Computers in Education (APSCE).

The APSCE awards two Distinguished Researcher Awards every two years in recognition of an active member who has produced internationally recognised research outputs and demonstrated distinguished academic accomplishments and contributions to the field of computers in education.

Professor Mitrovic (above) is currently Head of the University's Computer Science and Software Engineering department and the research leader of the Intelligent Computer Tutoring Group.

Last year she received a Marsden Grant for leading a research team in a three-year project to explore adaptive computer-based cognitive training for post-stroke rehabilitation. She chaired the 15th International Conference on Artificial Intelligence in Education, a biennial international conference for high-quality research in intelligent systems and cognitive science for educational computing applications, which was held in Auckland in July.

She will formally receive her award at the 19th International Conference on Computers in Education (ICCE 2011) to be held in Thailand in November where she will be presented with an award certificate, US\$1000 prize money and receive nomination for keynote speaker at the next ICCE conference.

Lisa Kulczycki



(From left) Associate Professor Greg MacRae (Civil and Natural Resources Engineering) and Associate Professor Maan Alkaisi (Electrical and Computer Engineering).

Marketer gets big tick from peers and students

Senior lecturer in marketing Dr Ekant Veer is winning accolades for both his research and teaching.

Dr Veer has been awarded the College of Business and Economics' Early Career Researcher Award for 2011, which follows hot on the heels of his UCSA award for Overall Lecturer of the Year for 2011.

Dr Veer joined UC from the University of Bath in 2010. His primary areas of interest are social marketing and transformative consumer research, with much of his work looking at how marketing and advertising can encourage healthy living, citizenship within society, body esteem and self-expression.

Dr Veer said it was "extremely humbling and rewarding" to receive the emerging researcher award judged by his peers.

"It's great to have because it says I'm on the right track. I want to be a world-class researcher and I like the idea that it is an award for researchers at the start of their careers, as I don't feel I've achieved anything yet.

"In 10 years time come and talk to me and see if I've reached my goals. In the meantime this is a good pat on the back to encourage me," he said.



Dr Veer, whose latest research into the voyeuristic behaviour of Facebook users has attracted a lot of interest, believes every bit of research should have a bit of "mesearch" in it – something personal that drives your passion for a topic.

He said both recent awards meant a great deal to him.

"At heart I am a researcher. I'm here to do high-quality research. However, knowing that my teaching, which stems a lot from my research and is research-driven, is having an impact on students is hugely rewarding as well.

"I like the UCSA lecturer of the year system as it is voted for by the people who are sitting there listening to me. It's very humbling to know students enjoy my style. I am not a nice teacher. I will yell at my students if they're not working hard

enough and will push them to the edge of their ability to stretch them to be better. And that works."

Dr Veer said he was not the type of teacher to give students everything on a plate but what he strove to give them was "the ability to learn for themselves".

"I think it's not hard to be a good lecturer when you've got a good topic and I think it's not hard to be a good lecturer when you're passionate about your topic. If you're passionate about what you do then it will show to the people watching you and listening to you."

Pictured above: College of Business and Economics' Early Career Researcher and UCSA Lecturer of the Year recipient Dr Ekant Veer.

UC's fast supercomputing just got faster

Prime Minister and UC alumnus John Key officially welcomed a new era in supercomputing at the University of Canterbury recently. Mr Key was on campus as UC celebrated its BlueFern High Performance Computing (HPC) capacity being boosted tenfold with an upgrade to its computer architecture.

BlueFern HPC Unit Director Professor Tim David said the upgrade consisted of two parts – a new Power 7 system, which increased by 10 times the capacity of the previous Power 5 model and the new IBM BlueGene P.

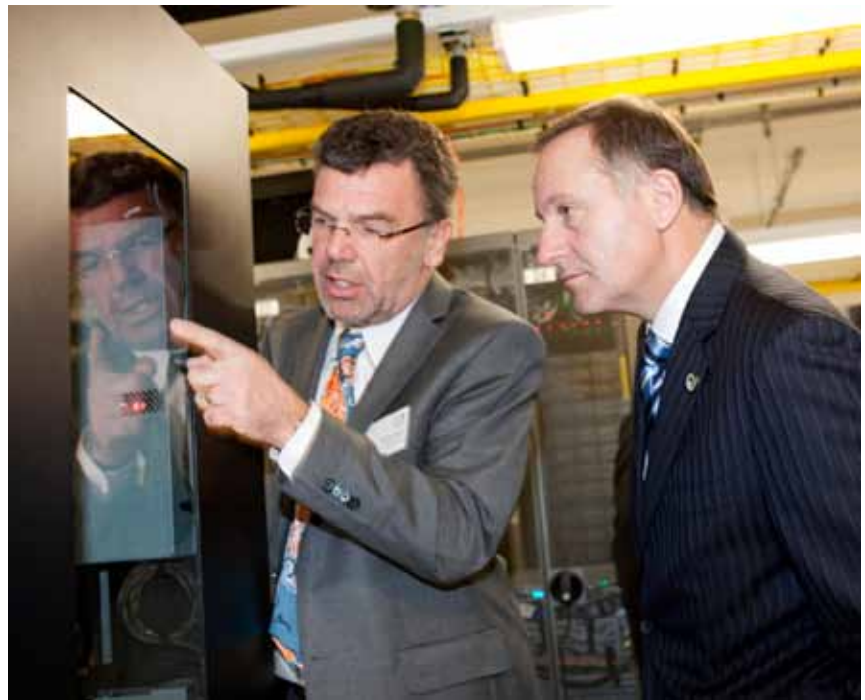
“This new computing architecture allows us to think and do the previously unthinkable,” said Professor David. “It maintains our status in the international research community and, in coming months will provide Canterbury with a resource that helps us get the region back on its feet.”

Professor David said the upgrade provided by corporate partner IBM heralded a “step change” in what New Zealand researchers could do.

“The new architecture gives us more memory and more processing power. It enables us to tackle a big problem and divide it into small but manageable and countable chunks, and scales it. Instead of dividing a problem by 10 it can be divided by tens of thousands.”

Professor David said as a result of the upgrade the BlueGene L, the supercomputer that has been based at the University since 2007, would be redeployed solely for educational purposes along with a smaller Power 7 system.

“This will put UC in the unique position of being the first university or research establishment in the world to provide a



BlueGene supercomputer for student access.”

Since 2009 the University of Canterbury has been offering courses in high performance computing – the first tertiary institution in Australasia to do so – but now as part of these courses students will go beyond a theoretical understanding and have dedicated time on a state-of-the-art supercomputer to expand their skills base.

BlueFern will also be offering block courses to industry utilising the BlueGene L.

This upgrade to UC's High Performance Computing facilities was made possible by the Government's announcement earlier this year that it was making a \$27.4 million investment in National eScience Infrastructure (NeSI) over the next four years with \$21 million in co-investment coming from a consortium including three key partners – UC, the University of Auckland and NIWA.

Of this co-investment UC has pledged to contribute \$8 million over the next four years, building on previous significant investment in high performance computing

and showing the University's commitment to investing in infrastructure that provides a world-class learning environment for students and researchers.

“NeSI will support computational research across the New Zealand science sector, whether it's quantum chemistry, radio astronomy, drug discovery or modelling of fluid flows,” said NeSI Director Nick Jones.

“It's very exciting to begin building an infrastructure and services that New Zealand researchers will be able to depend on over the long term. We have worked with BlueFern for several years now, and recognise its leadership in providing high performance computing services and educational opportunities critical to our ongoing success in science and engineering.”

Pictured above: BlueFern HPC Unit Director Professor Tim David talks Prime Minister John Key through the University's newly upgraded supercomputing architecture.

UC academics honoured for geography work

Six UC academics have been honoured by the New Zealand Geographical Society for their “exceptional” achievements in the field of geography.

The New Zealand Geographical Society Awards recognise academics from around New Zealand for their contributions to geography. This year UC dominated the awards with eight of the nine recipients having UC connections.

At a ceremony held in UC’s Department of Geography, Dr Garth Cant (Geography) and Murray Fastier (Māori, Social and Cultural Studies) received Distinguished Service Awards, as did former UC Education Plus team leader Roger Baldwin.

Presidents’ Awards went to current UC geography doctoral student Woodroe Pattinson for best master’s thesis; former PhD student Tim Appelhans for best doctoral thesis; Dr Greg Breetzke (Geography) for emerging researcher in geography; and Associate Professor Simon Kingham (Geography) for graduate researcher supervision.

Professor Kingham said he “felt humbled to win the award”.

“The most important thing for me is to see my students graduate and become successful.”

Other award recipients on the day were UC alumnus Professor Iain Hay from Flinders University in Adelaide, who was awarded the Distinguished New Zealand Geographer Award and Medal.

Chair of the Canterbury branch of the New Zealand Geographical Society, Dr Vaughan Wood, said Professor Hay “has vigorously sought to advance an ethical standard in research practice”.

“He is one of New Zealand’s most internationally distinguished geographers and his CV is nothing short of stunning.”

Victoria University of Wellington PhD student Edward Challies received a Presidents’ Award for best doctoral thesis.

Finau Fonua

Growing a Heart



An artist's impression of phase two of the Undercroft development.

The heart of the University will beat a little stronger when cafés, food outlets and a wine bar are added to the Undercroft development over the summer.

Phase 1 of the Undercroft development saw an old bicycle park regenerated into a vibrant social space for students. The area is bright and buoyant and attracts a daily congregation of students to meet, talk, plan, study and socialise.

Pro-Vice-Chancellor (Learning Resources) Professor Sue McKnight is delighted with the new atmosphere.

“What is happening in the Undercroft is central to the principles of the Campus Master Plan that promote a student-focused campus and a vibrant heart at the centre of the University. That vitality can already be felt in the new common space and has been so successful that expenditure to undertake Phase 2 of the project has been approved by the University Council.”

Funded by the Student Services Levy, a further \$2.7 million will be spent on introducing food and beverage services into

the Undercroft, improving the use of natural light within the area and completing the surrounding landscape, including additional outside seating. The food outlets will help boost the USCA revenue stream lost when the USCA building was closed.

The new phase will repurpose the former UC Security Office, Café 360, the audiovisual lab and the former Maclab. Construction will take place over the 2011-2012 summer break and will not interfere with the already popular common space.

“The development will also see modern, light-transferring materials attached to the eastern, northern and western walls of the James Hight building, a contemporary touch that will add to the feeling of renaissance emerging from the University’s heart,” said Professor McKnight.

“When the cafés, enhanced food outlets and wine bar come online, the student community will have extremely appealing new options for rest and relaxation from academic pressures. These brilliant new interior and exterior spaces will give students the opportunity to translate the principles of the Campus Master Plan into reality.”

Gift allows Ilam Gardens to bloom

The University's Ilam Gardens have been the envy of rhododendron and azalea enthusiasts throughout the world for decades and will continue to be so thanks to a \$110,000 donation.

The generous donation from Roland Stead, the son of distinguished horticulturalist Edgar Stead (1881-1949) who established and developed the gardens, has seen the establishment of the Roland Stead Ilam Gardens Fund of \$110,000.

The fund's chair, Registrar Jeff Field, said the money would ensure the gardens were maintained and enhanced as per the commitment the University made when it acquired the site in 1950. Specific projects selected by the trustees would be undertaken, supplementing University expenditure on the grounds.

"These gardens are an important part of both our University and city's heritage so

we are delighted to have this financial support to ensure the legacy of Roland's father lives on in our Garden City."

Mr Stead also funded the purchase and installation of seven new garden seats so the University and surrounding community could better enjoy the idyllic spot.

Late last year Mr Stead joined Prime Minister John Key in opening the University of Canterbury's new Biological Sciences Research Building – Pūtaiao Koiora, with its central entrance named the Edgar Stead Atrium and bearing a plaque about the Canterbury alumnus for whom it was named.

Edgar Stead was a distinguished New Zealand ornithologist, horticulturalist and naturalist, who studied electrical engineering at Canterbury College.

In 1914 he bought a 53 acre (21.4 ha) property on which he built the Ilam Homestead by the Avon River. Following his death the property was one of three bought to form the campus of the University of Canterbury. The homestead was used by the University initially as the residence of the

Rector (nowadays Vice-Chancellor) of Canterbury College, but has been home to the University Staff Club since 1971.

It was Edgar Stead who introduced rhododendrons and azaleas to Ilam and successfully experimented with their propagation and hybridisation, which earned the garden and its blooms an international reputation still enjoyed today.

The homestead building has been closed since the 22 February earthquake as it suffered structural damage. The University's earthquake remediation project team has been working with structural engineers and insurers to identify a repair and strengthening design solution for the heritage-listed building. Recovery Manager Peter Molony said it was hoped remedial work would commence in the new year and the building could be reopened by late 2012.

Pictured below: (From left) UC gardener Bryan Lowson, Roland Stead and UC Registrar Jeff Field soak up the surroundings in the Ilam Gardens from one of the new seats Mr Stead donated.





Group ready to assist evacuation of campus

Any time the Incident Management Team calls for a mass evacuation of the UC campus, staff members comprising the UC Community Support group spring into action – the safety and welfare of the UC community their overriding objective.

When the earth first moved in September last year, UC recognised that if such a shake were to occur during a working day at the University, emergency operations would be in need of able-bodied and competent assistance. Recruitment of volunteers as Earthquake Wardens was undertaken by Chris Hawker, Jacqui Lyttle and Sharon Butt, all members of the Incident Management Team (IMT).

Although the group was not quite operational in February, they were able to assist in a successful evacuation of the campus. Ready to fully mobilise when the campus shook again in June, they will be well remembered for the high-viz vests and light wands they sported during the event. Also issued with radios, first aid kits and emergency whistles, they were easily identifiable as Earthquake Wardens. Radio instructions received from the IMT through Security enabled them to manage the situation as it changed and provide up-to-date information to the campus community.

Ironically Rhys Davies began work at UC on 22 February, immediately becoming involved with the emergency response and retrieval process. He then took up the role of Health and Safety Projects Assistant in April. He said that the most difficult thing about the February and June evacuations was keeping people out of the buildings. “Every building responds and feels different in an earthquake.”

Ms Butt agreed: “Because of that, everyone reacted differently to the evacuation, and there was some resistance. People naturally wanted to retrieve personal belongings from buildings, especially things like car keys, wallets and mobile phones, which in many cases were their only link to family members off campus. People did seem better prepared in June though, and many made sure they had these items with them.”

After the February event, the group has consolidated into a force able to assist in a wide range of emergency situations and is now known officially as the UC Community

Support Group (UCCSG).

“We recognised the future focus of the group needed to be more generic, and not just based around earthquake knowledge and events. We need to be able to mobilise any time there is a need for mass evacuation of the campus,” said Ms Butt.

“The UCCSG is one of several groups who can mobilise in such an event, assisting the Strategic Emergency Management Group and IMT. Alongside these groups are the Rescue Team and Security who have roles outside of normal duties in a mass evacuation.”

Because able hands are so essential in an emergency, a decision was made to expand the UCCSG group, which now numbers 38, and offer appropriate training. This has been given in radio communications, basic first aid and evacuation drill. Eight members have just completed a course in pre-hospital emergency care, the highest course a non-medical professional can undertake.

Currently, the group is coordinated by email but will meet again in person in November. Any staff member who is interested in joining or who may want more information about the UCCSG should contact rhys.davies@canterbury.ac.nz.

Pictured above: Members of the UCCSG in their Earthquake Warden gear: (from left) Louise Clark (Literacies and Arts in Education), Kathleen Ell (Educational Studies and Human Development), Rhys Davies (Human Resources), Philippa Drayton (Health Sciences) and Nikki Gibbs (Human Resources).

Community engagement course forges international links

UC's newly launched service learning course, set up in response to the Christchurch earthquakes, has gone international.

CHCH101 - Rebuilding Christchurch: An Introduction to Community Engagement in Tertiary Studies has been adapted by the University of Vermont (UVM) in the United States, where students are helping their community to clean up after Hurricane Irene caused extensive damage on the east coast of the US in late August.

CHCH 101 Course Coordinator Dr Billy O'Steen (Educational Studies and Human Development) said the UVM course was the result of an email he sent to service learning programme co-ordinators at 10 US universities in the path of the hurricane. Included in the email was the course outline for CHCH 101.

"I said that if they had students involved in the clean-up work they might like to use our course as a template for service learning programmes in their university. I heard back immediately from Vermont and the University of Maryland which were both really positive about our course."

The UC course was launched in June, giving students who had service experience related to the Christchurch earthquakes a chance to examine the concept of community engagement.

Dr O'Steen said while Maryland was interested in the course, UVM was able to get their version of CHCH 101 – Rebuilding Vermont: Community Engagement in Disaster Preparation and Relief – up and running with 26 enrolled students within a week.

"It's an awesome connection to have and the fact they gave their course a similar name to ours is pretty cool too."

UVM's Director of Community-University Partnerships and Service-Learning, Carrie Williams Howe, said the Vermont course was created "so that our response would last beyond the initial clean-up, making a commitment to long-term recovery".

"In addition, we wanted to give our students the opportunity to contribute to recovery while also thinking critically about what that engagement means."

Ms Williams Howe co-teaches the course



Photo supplied by Kelly Hamshaw.

with Kelly Hamshaw, a research specialist at UVM who had already been working closely with mobile home communities across the state conducting research on their vulnerability to disasters.

She said students from the UVM course had already spent four days doing direct service with flood-damaged mobile homes in communities with which Ms Hamshaw was connected. As the semester progressed they would be assigned to long-term projects across the state. Their work would include volunteer management support, outreach to mobile home owners regarding deconstruction and recovery options, developing a business recovery database and fundraising for farmers affected by the floods.

Dr O'Steen, who planned to catch up with Ms Williams Howe at a conference on service learning in Chicago in November, said he would like to eventually see the link with Vermont become more tangible.

"We'd like to create a way for our students to link up with each other, either online or maybe by sharing assignments. We could also investigate whether some kind of exchange scholarship could be set up so students from both UC and Vermont can experience service learning and

community engagement in different cultures."

Dr O'Steen said the link between the UC and Vermont courses had already been extended through a student survey connecting UC and UVM with Bond University on the Gold Coast of Australia.

Bond University started a similar service learning course to UC's as part of their management programme in January in response to the Brisbane floods.

"The survey will measure critical thinking of the students taking our courses, the likelihood of them helping their community in the future and the impact the courses have on their values."

Dr O'Steen said the long-term goal for CHCH 101 was "to move beyond the earthquake response".

"We'll still be involved in the rebuild but we need to move in a new direction and, long term, make it part of what students have available to them here at UC."

Pictured above: University of Vermont students taking the Rebuilding Vermont course, based on UC's CHCH101 programme, help remove damaged materials from a mobile home in the Weston Mobile Home Park in Berlin, Vermont.



The South Island's biggest bouncy castle was a popular attraction.

Community Open Day a hit with the public

Nearly 4000 people attended the University of Canterbury's first Community Open Day on 1 October, taking the opportunity to find out what goes on behind the scenes.

Awesome experiments, robot displays, microscopic gold panning, live comedy and music, and the biggest bouncy castle in the South Island were just some of the features of the inaugural event. There were opportunities to get "hands on" with activities such as extracting iron from



Visitors to the School of Law's Moot Court got to dress up as judges.

breakfast cereal and making fake blood, and free classes and climbing wall sessions. Other activities included interactive demonstrations on measuring photosynthesis in trees; the earthquake shake table; mechanical go-karts; unmanned vehicles; Māori bread making and flax weaving; and seeing creepy-crawlies down microscopes.

Vice-Chancellor Dr Rod Carr said the Open Day was an invitation to the people of Christchurch to "come on in and see what we're up to".

"It was good to see so many people on campus enjoying the wide range of activities and displays. It looks like just under 4000 people came along and we received great feedback.

"Thank you to the more than 250 staff who took part in organising the events and hosting on the day."

Dr Paul Broady (Biological Sciences) said he would like to see the Open Day become a regular fixture on the University calendar.

"It was great to see so many young kids dragging their parents and grandparents along."

Dr Allan McInnes (Electrical and Computer Engineering) said plenty of people came through electrical engineering adding there were "lots of excited kids leaving with a very positive view of engineering".



Six-year-old Ezra Sands, from West Melton, has a go at calligraphy in the Confucius Institute.

Eleri Nugent (Academic Quality Assurance Unit) said the enthusiasm, friendliness and approachability of everyone involved was great.

"I was amazed how much was on offer for the kids to get actively involved with. My shy 11-year-old was asking staff and students questions which were answered in thoughtful ways, not patronising but not overwhelming. My non-academic 6-year-old said he wanted to go to university and please could I buy him a microscope. They've both talked about it pretty much non-stop since."