

ANUreporter

THE AUSTRALIAN NATIONAL UNIVERSITY

WINTER 2010

Facing up to failure

Why students
underachieve

The future of
Asia Pacific security | Australia's
first diplomats

40^{years}
1970-2010:
ANU Reporter



ANU

THE AUSTRALIAN NATIONAL UNIVERSITY

TREVOR NICKOLLS: OTHER SIDE ART

15 April – 23 May



Image: Trevor Nickolls, *The end of a dream*, 2004, synthetic polymer paint on canvas. (detail) Private collection, Perth. CRICOS #00120C



In brief 6

News and views from Australia's national university.

Meet the Chancellor 9

Gareth Evans takes up the role.

Securing the future 10

Michael L'Estrange on the new National Security College.

Savouring Korea 11

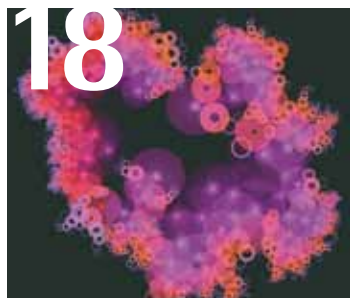
Language scholar Elizabeth Yoo on studying in country.

Facing up to failure 12

Why don't some students don't reach their potential?

States of flux 14

Shining the spotlight on the future of security and international ties in the region.



Folio: Pop programming 18

From code to colourful creation.

Found in translation 20

Meet Julio Licinio, a medical researcher who thrives on difference.

Peace and conflict in Norway 23

Postgraduate student Sinead Clifford on northern exposure.

Cosmic time machine 24

Space rocks open a window to the early solar system.

Philosophies of water and land 26

Learning from Indigenous people about living with nature.

Meeting place 28

Uncovering more about Australia's first diplomats.

Reap what you sow 30

Kellogg global leader John Bryant on corporate social responsibility.

In Darwin's wake 32

Following in a great thinker's footsteps.

Alter Ego 33

Meet an auto leader who's not a car buff.

Last words 34

Catch up on ANU lectures, videos and publications.



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Cover: Cover: Krista Clews De Castella,
Facing up to failure p12.
Photo: Martyn Pearce

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Celebrating our students

This year is the 40th anniversary of *ANU Reporter*, but it also marks another milestone worthy of celebration.

In 1960 ANU enrolled its first undergraduate students.

For 50 years now, this University has been enriched by generations of young scholars, who have gone on to important careers in politics, public service, business, diplomacy and, of course, research and education.

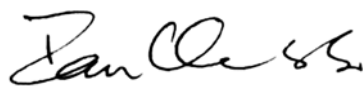
Our students come from all over Australia and the world to study as undergraduates, pursue postgraduate research or coursework, take part in one of the University's professional short courses or develop their abilities at our Centre for Continuing Education.

The diversity of people, study options and subjects is the focus for this edition of *ANU Reporter*.

The cover story on PhD student and Fulbright scholar Krista Clews De Castella shows that research and undergraduate learning can have concrete results for students struggling with internal demons. Her work on fear of failure, and the reasons students handicap themselves, will prove highly useful for educators and students.

Also featured in this edition are stories on undergraduate language learning in Korea, honours-level exploration of drought resistance crops, postgraduate coursework on conflict and peace in Norway and PhD research on Indigenous resource management issues.

I hope you enjoy the stories in this edition, and can see why we are proud of our students and their achievements.



Professor Ian Chubb AC
Vice-Chancellor and President





Former Prime Minister Bob Hawke delivers the inaugural ANU commencement address at Llewellyn Hall. The address is an initiative of the ANU Students Association to kick off the academic year.
Photo: Stuart Hay

then and now

Who said that news goes stale as soon as the ink hits the page? In this column we open the vault on past editions of *ANU Reporter* and compare the coverage with campus today.

In 1971 the Assistant Registrar thought that the apartments would foster interdisciplinary conversations, given that the residents would be studying in diverse areas. Yet for the head of the research students groups, the residence was more exciting as a development in self-determination.

ANU Reporter for 12 March 1971 tells of the opening of a new "postgraduate motel-type residence in Northbourne Avenue", consisting of "100 single and eight double self-contained flats". The building at the corner of north Canberra's main thoroughfare and Barry Drive was given the working title of Northbourne Hall but would eventually be christened Graduate House. The article reports that Assistant Registrar G E Dicker, thought the "new postgraduate hall would be an interesting place to live in" as "[t]here would be cross-fertilisation of academic interests and ideas because the residents would come from an extremely wide range of interests."

The President of the Research Students' Association, on the other hand, was promoting governance by the students, for the students. Mr M H Worthington "told the Reporter that postgraduate students were happy with the way the new hall had developed. He said the concept of a self-controlling residence had been achieved despite the wishes of some that it should have been a master-student establishment of the University House type. Mr Worthington said it was desirable that a committee



THEN: Prospective residents inspect the accommodation being offered in what was to become the first Graduate House at ANU, opened in 1971.



NOW: The Laurus Wing at Ursula Hall takes postgraduate accommodation into the modular age.

composed mainly of residents should decide on rules and then have responsibility for enforcing them."

The original Graduate House was sold by the University in the late 1990s. Today, new private apartments stand at the site. The name Graduate House now applies to a postgraduate residence built downhill from University House and opened in 1998 – yet this is not the latest in postgraduate accommodation on campus. That honour belongs to the Laurus Wing, part of

Ursula College that was opened for business at the start of semester one this year.

The Laurus Wing is Australia's first university student residence built from modular apartments. The shipping container apartment units are purpose built in China, where their interiors are furnished ready for occupation. This allows for speedier construction, minimising impact on the University campus and hastening the addition of extra student accommodation spaces at ANU. ■

Student access increased through partnerships

ANU has established two new important partnerships as part of its National Access Alliance Strategy.

The University has signed Memorandums of Understanding with the University of Southern Queensland and Charles Darwin University. The alliances will offer staff and students a broader range of collaborative and study options, and open up great opportunities for disadvantaged students from outside the ACT.

Professor Chubb said both alliances were a practical example of the Federal Government's 'hubs and spokes' model for higher education. "To be a truly national university we have to contribute to the national agenda – and what better way to do this than by providing leadership and initiative in helping the Government achieve its targets for higher education," he said.



Indigenous students visit campus

Sixty-five Indigenous high school students from NSW recently spent a day at ANU as part of the University's effort to increase access to education.

The 2010 Explore, Dream, Discover Day was attended by a range of Year 7 to Year 12 students from schools in the ANU Regional Partnership Program as well as students from Yass High School. The students were given an introduction to ANU, experiencing different aspects of university life and enjoying a taste of tertiary studies first-hand.

In 2010 ANU has recorded a record intake of Indigenous students with 30 undergraduates and 23 graduate coursework students starting in semester one.



Imaging of the water courses under the Simpson Desert.

Riddle of the sands unlocked

Researchers have helped to uncover the courses of some of the world's oldest rivers and streams, buried for millions of years under the Simpson Desert in central Australia.

The research project peered beneath the desert sands to map the underlying landscape thanks to software that models how water moves across the surface of the continent.

The Digital Elevation Model (ANUDEM) software was developed at ANU by Professor Michael Hutchinson from the Fenner School of Environment and Society.

Professor Hutchinson designed the original ANUDEM software and was instrumental in this latest research on ancient watercourses, working with John and Janet Stein from the Fenner School and Dr Robert Craddock from the Smithsonian Institution.

Professor Hutchinson said the network of rivers and streams, now buried up to 35 metres below the surface of the Simpson Desert, originated around 50 million years ago.

word watch

The Australian National Dictionary Centre is a joint venture between Oxford University Press and ANU. Director **Bruce Moore** takes a look at our lingua franca.

The Australian word *rort* means 'a fraud, a dishonest practice'. The term is often applied to people in positions of power and privilege who 'work' a system to gain the greatest benefit for themselves. Politicians are typically accused of *rorting* the system. A *rorter* is a person who indulges in *rorts*. Most Australians will be surprised to learn that from the 1940s to the 1970s a *rort* was also 'a wild party'. By the 1980s, this 'wild party' sense had disappeared.

What is the origin of *rort*? Dictionaries assume, in spite of the seemingly very different meanings at play here (a fraud on the one hand, and a wild party on the other), that all the meanings come from the one word *rorty*, first appearing in London in the mid-nineteenth century, and meaning: 'splendid; boisterous, noisy; (of drinks) intoxicating; (of behaviour, speech, etc.) coarse, earthy, of dubious propriety; crudely comic.' (*Oxford English Dictionary*). This *rorty* certainly fits the Australian 'wild party' sense, but it does not quite explain the fraud sense. There is a potential hint of fraud in 'of dubious propriety', but when we look at the historical evidence it is clear that the 'dubious propriety'

alludes to coarse jokes and the like. There is not a hint of fraud and swindling in the historical evidence for *rorty*.

Is it possible that the dictionaries are wrong about this word, and that we have in fact two quite different words with two quite different origins? When we look more closely at the Australian evidence for the fraud sense, it becomes clear that two spellings alternate—our present *rort*, but also *wrought*. The earliest evidence for *rorter* is spelt *wrougter* in a 1917 poem that describes gambling shysters as 'racecourse wrougters'. *Wrought* is the spelling in the earliest appearance (1926) of the noun in the fraud sense. A story in the *Argus* newspaper in 1938, headed "'Wroughting" and How to "Wrought"', tells of a *wrougter* who engages in *wroughts* and *wroughtings*. The *wrougter* explains some of his tricks, including selling a 'cockroach exterminator' made of ground-down house bricks, and a razor sharpener: 'The razor sharpener wrought's a good one, too. You melts a pile of soap down in a dish, then yer mixes it with lamp-black and lets it set. Then you cuts it up into cubes about one inch square, wrap, label, and sell.'

Australian *rort* in the swindling sense is therefore probably a later spelling of *wrought*, the archaic past participle of the verb *work*, now existing mainly in compounds such as *finely-wrought*, *hard-wrought*, or *wrought iron*. The primary sense of *wrought* is 'worked into shape or condition', and the early uses of *wrought* and *rort* in Australian English have this notion of a swindler or fraudster 'working on' his victims. In criminal slang in the nineteenth century *to work* could mean 'to steal', and this sense is listed in the *Sydney Slang Dictionary* of 1882. There is no doubt that our Australian *rort* is from *wrought*. ■



definition: Rort (n) A fraud, or a dishonest practice.



Professor John McMillan

Photo: ombudsman.gov.au

ANU professor named Information Commissioner

Professor John McMillan from the ANU College of Law has been named by the Federal Government as Australia's first Information Commissioner.

Professor McMillan will oversee the Office of the Information Commissioner, implementing information policy reforms and leading a pro-disclosure culture across government.

The Office of the Information Commissioner will be an independent agency with oversight of freedom of information and privacy matters.

Professor McMillan has taken leave from his role as the Commonwealth Ombudsman to work as the Information Commissioner Designate. He is also currently on leave from the ANU College of Law.

New climate governance network launched

The Climate and Environmental Governance Network was launched at ANU this semester.

The new grouping of researchers sits under the existing Regulatory Institutions Network (RegNet), part of the ANU College of Asia and the Pacific.

Headed by Professor Neil Gunningham, the network will foster work that looks at the institutions of regulation and governance around the environment and climate change.

"We're interested in the way that things like property rights, markets, trade regimes, treaties, and national laws both empower and circumscribe action on sustainability," Professor Gunningham said.

Researchers will also study how the relationships between states, governments, international organisations, corporations, and NGOs affect how societies respond to environmental change and crisis.



Humans behind new geological age: Research

Humans have wrought such vast changes to our world that we are entering a new geological age – one which may include the sixth largest mass extinction in the Earth's history, according to an international team of scientists.

The scientists, including Professor Will Steffen, Executive Director of the ANU Climate Change Institute, propose that in just two centuries, humans have ushered in a new geological time interval, altering the planet for millions of years to come.

The research team includes University of Leicester geologists Dr Jan Zalasiewicz and Dr Mark Williams, and Nobel Prize-winning atmospheric chemist Professor Paul Crutzen of Mainz University. Their study, '*The new world of the Anthropocene*' is published in *Environmental Science and Technology*.

The researchers say that recent human activity, including stunning population growth, sprawling cities and ever-increasing use of fossil fuels has changed the planet to such an extent that we are entering what they call the Anthropocene Epoch.

life sentences

The Australian Dictionary of Biography (ADB) sits in the History Program at the Research School of Social Sciences. Online Manager **Christine Fernon** takes a look at the bounty of bookish benefactors who appear among the 11,500 biographies in the ADB.

This year the State Library of New South Wales is celebrating the centenary of the opening of the Mitchell Library, home of one of the world's great national collections. Reclusive, sensitive and with an independent income, David Scott Mitchell (1836-1907) devoted much of his life to book collecting. He aimed to gather a copy of every document that related to Australia, the Pacific, the East Indies and Antarctica. In poor health by 1898, Mitchell offered his collection – amounting to over 60,000 documents – to the State Library on the condition that it be housed in its own wing.

The State Library of New South Wales also holds the Dixon collection, bequeathed by Sir William Dixon (1870-1952). The businessman focused his collecting on early navigation and geography, exploration of the Pacific, early Australian settlement and, above all, pictures. He also paid for the library's spectacular bronze entrance doors, its Chaucer stained-glass windows and left it a substantial endowment to establish the William Dixon Foundation.

When bookseller Edward Augustus Petherick (1847-1917) offered his great collection of Australiana to the Commonwealth National Library (now National Library of Australia) in 1908 he included himself – as its custodian – as part of the deal. His other great work was to write a bibliography of Australia and Polynesia.

Consisting of over 100,000 cards, the bibliography remains unfinished, in 92 boxes, in the National Library.

Like Petherick, Sir John Ferguson (1881-1969) was both a passionate Australiana collector and bibliographer, who also found time to serve as a judge with the Industrial Commission. In 1918 he began work on his seven-volume Bibliography of Australia in which he aimed to include an accurate description of every book, pamphlet, broadsheet, periodical and newspaper relating in any way to Australia pre-1900. The first volume was published in 1941 and the last in 1969, shortly after his death. He began depositing his collection of 34,000 items of Australiana in the National Library in 1939.

The National Library of Australia also holds the Rex Nan Kivell (1898 - 1977) collection. A New Zealand-born art dealer who adopted the style of a bon vivant, Nan Kivell amassed over 15,000 pictures, manuscripts and printed material relating to Australia, New Zealand and the Pacific. It was said that he donated his collection to the library in exchange for a knighthood.

Thomas Fisher (1820 - 1884) is, perhaps, the most unlikely of all the great library benefactors. The son of convicts, Fisher was orphaned at 12. He was apprenticed as a bootmaker and soon owned the building that housed his shop. Further property speculation saw him buying cottages, ships and hotels. In his retirement he liked to stroll through the grounds of the University of



E A Petherick.
Photo: nla.pic-an23480896,
courtesy of National Library of Australia

Sydney and attend commemoration addresses. Stirred by the Chancellor's address in 1879, for a man of great wealth and public spirit to 'earn the gratitude of their country by erecting for the University a library worthy of comparison with like edifices', Fisher left the bulk of his estate to the university. The library building, opened in 1909, was named in his honour. ■

More: <http://www.adb.online.anu.edu.au>



Professor Jon Altman.
Photo: Belinda Pratten

Altman reflects on 20-year legacy at CAEPR

The directorship of Australia's leading centre for Aboriginal economic policy research has changed hands, 20 years after the centre was founded.

Professor Jon Altman has stepped aside as Director of the Centre for Aboriginal Economic Policy Research (CAEPR) at ANU.

A prominent commentator on Indigenous policy in Australia, Professor Altman said he was looking forward to spending more time focusing on his research at ANU on remote development and natural resource management as part of an ARC Discovery project on the 'hybrid' economy and a Sidney Myer Fund project called People on Country.

The incoming Director, Professor John Taylor, said he was looking forward to leading the centre in the next phase of its history.



The victorious ANU Jessup Moot team (left to right): Sneha Rangnath, Sam Thorpe, Ellen Chapple, Sarah Lynch and Rohan Kapur.

Law students win international competition

Law students from The Australian National University have taken out first place in an international legal competition held in Washington.

One hundred and twenty-seven teams from 76 countries met in the US capital for the world final of the Jessup International Law Moot Court Competition.

The students presented oral and written arguments on a hypothetical international law case to a simulated International Court of Justice.

The ANU team members were Ellen Chapple, Rohan Kapur, Sarah Lynch, Sneha Rangnath and Sam Thorpe. The group was coached by Senior Lecturer from the ANU College of Law, Wayne Morgan, and was supported in Washington by Faculty Adviser Jon Lovell.

Privileges for ANU graduates

Are you an ANU graduate? Update your contact details at www.anu.edu.au/alumni to receive invitations to special events, regular news and alumni privileges, including:

- ongoing email accounts
- library access
- privileged membership of University House with its reciprocal club memberships worldwide
- discounts with the Centre for Continuing Education
- alumni exchanges with universities such as Yale and Cambridge
- membership of a growing number of special interest groups and social networks.

Meet the Chancellor

Professor Gareth Evans was installed as ANU Chancellor in February. Evans is bringing to the role credentials in humanitarian issues and international affairs attained in his long career, which includes nearly eight years as Australia's Foreign Minister and ten years in Europe as head of the International Crisis Group. He talks to *ANU Reporter* about the value of human dignity, the importance of continued research and learning throughout life, and his desire to sit in the back of a few philosophy lectures.

What do you hope to achieve as Chancellor?

I'd like to help maintain the ANU status as the gold standard university for the whole of Australia. We have a huge national and international reputation based on the tradition and quality of the research that's done here, and also the excellence of the teaching. It's not a matter of any big u-turns or new directions needing to be forged; it's a matter of continuing that tradition of excellence that has been well and truly consolidated in recent years.

Would you describe yourself as a humanitarian?

What matters to me is human dignity, and the alleviation of human suffering and misery in every relevant context, but especially in the area that I've been focused on for so many years: that of conflict and mass atrocities. Nothing is more important than that people be able to get on with their lives without being in peril of murder, rape, ethnic cleansing and all the other horrors associated with war between countries and civil conflict.

I've devoted a large proportion of my life to addressing those concerns. Some early experiences were pretty formative. For example, travelling in my youth and experiencing, among other things, the joys of student life in Cambodia, and realising that, just half a dozen years later, none of the people I then met and shared meals with were alive. They'd all been slaughtered by a genocidal regime. That concentrates your mind when you are thinking about how to focus your professional life.

How do you see universities, such as ANU, contributing to civic and humanitarian efforts?

It's important that universities have a role in generating good public policy. I'd put it in those general terms rather than specifically

focusing on humanitarian objectives, although that's part of good public policy, and I think a university like ANU, with a very strong internationalist tradition and a commitment to that public policy focus, can play a major role here.

Your career has blended leadership and scholarship, action and research. Do you think it is important for Australia's leaders to take time to think deeply and broadly about their fields of activity?

It's tremendously important that anyone in public or political life have as broad a perspective, as broad a moral and intellectual frame of reference, as possible. Universities are a fantastic way of incubating that in the early stages of people's careers, but they can also play an important role in reinforcing and developing people's skills and perspectives later in life.

If you had time today to sit in the back of any lecture theatre at ANU, which subjects would you be most interested in sampling?

Rather than just focus on my own comfort zone of international relations and political science and internal law and so on, and without being pretentious enough to think I could benefit much from sitting in on higher mathematics or engineering lectures, I think the areas that I would be most intrigued by would be history, philosophy, art and music – cultural broadening activities generally. Far too much of my professional life has been devoted to one or other fairly sharply defined treadmill. The opportunity to read and to think and to stretch one's mental horizons is something you should grasp at all stages of your life, however geriatric you're getting. ■

Securing the future

The changing nature of national security requires a new approach to training and education. Professor Michael L'Estrange is a man at home in the halls of power – from Parliament House to the top of the public service and the world's great universities. He will lead the new National Security College at ANU and tells MARTYN PEARCE what it will achieve.

Perhaps it was the events of 9/11 that threw the issue of national security into sharp focus.

That terrible moment, where terrorists attacked from the skies using hijacked civilian aircraft, highlighted the reality that national security wasn't just about protecting borders or sovereign independence. National security involves more than the traditional agencies of state. It means coordination across government, non-government and businesses.

Michael L'Estrange, the Director of the new National Security College at ANU, is no stranger to the complexities of national security, after an illustrious career where he served as Secretary of the Department of Foreign Affairs and Trade, Australian High Commissioner to the United Kingdom and Secretary of Cabinet.

"The nature of national security is that it now covers a range of interconnected issues," L'Estrange says. "It is, as ever, about safeguarding territorial integrity, it's also about transnational issues – terrorism, weapons proliferation, economic globalisation, resource security and criminal networks and other realities operating across borders. All of these things, in their modern form, are changing the nature of national security," he says.

"The way to get coherence to a national approach is to bring the groups together to give them a shared sense of the strategic environment Australia faces and the challenges coming down the track to help to build this collaborative leadership among themselves."

The National Security College was announced by the Prime Minister in December last year as part of a reinvigorated relationship between government and ANU. It will open mid-year, bringing various elements of the national security community together, L'Estrange explains.

"Our aim is to build up the skills and cooperative leadership among the members of the national security community in government and to provide a range of courses which will be accessible for people inside and outside government.

"The goal is to build collaborative leadership, to build trusted networks between areas of government expertise and non-government expertise – to break down the walls between different areas of expertise. We also hope to develop a new generation of strategic analysts, some of whom may go into the national security community," he says.

Although the college is only a few months old, plans for what it will offer when it opens for business are advanced.

"The program will operate on a number of levels. Firstly, we'll be providing executive development and professional development programs for officers in the national security community in government. The executive development programs will be intensive and wide-ranging, while the professional development courses will be much shorter and built around particular skills and emerging issues.

"Secondly, we aim to provide a range of postgraduate programs, including a Masters Program in National Security



Michael L'Estrange says he's enjoying the move from public service to campus life.
Photo: Belinda Pratten

Studies and, further down the track, doctoral programs as well.

"Third, we aim to conduct and commission relevant research projects," he says. "Finally, we aim to interact productively with State and Territory governments, with the business community and with community organisations involved in issues related to national security."

ANU, he says, is the perfect home for the National Security College.

"ANU has always been a strategic endowment of the nation. This sort of initiative is really going to strengthen that concept. I think the synergy between government and ANU has been part of the university since the start, and the area of national security is a logical one to develop it further. ANU is at the cutting edge of these issues." ■



Savouring Korea

Elizabeth Yoo is enjoying the snow and snacks in South Korea.
Photo: Elizabeth Yoo

Undergraduate student Elizabeth Yoo is relishing the chance to enrich her Korean language skills in country, and expand her appreciation of Korean culture too.

BY KATE WALTON

"The food here is so cheap," says Elizabeth Yoo down the phone from Seoul. "You can get a set lunch for around 2500-3000 KRW (AU\$2.50-\$3) at the school cafeteria, and it's very filling. Wherever I go, I almost certainly find myself staring at several restaurants on the one street, so I find deciding where I go to eat usually takes time and effort."

Culinary crises aren't the only thing on her mind. The third-year Bachelor of Asian Studies (Specialist)/ Bachelor of Laws student will be living in Seoul for the next year while undertaking her Graduate Diploma in

Asia-Pacific Studies, a program commonly referred to as the 'Year in Asia-Pacific'. Yoo will spend 2010 studying at Seoul National University (SNU), South Korea's oldest and best-ranked university.

"The university campus feels bigger than ANU," she says. "And there are a lot more student clubs at SNU – more than 200. [But] the assessment is similar to ANU: mid-term [exam], final exam, class participation. However, the lecturers don't record their lectures! You have to attend all your classes."

Originally from Korea, Yoo left when she was three years old. "I grew up in an English-speaking country," she says. "I was ignorant of the Korean culture and was reluctant to embrace [it]. As I felt caught between two ethnic identities and somewhat isolated from the Korean community, I decided to major in Korean Studies at ANU.

"I chose to study at ANU mainly because I wanted to study at a university that has a good reputation for both Asian Studies and Law," she explains. "I'm enjoying my studies so far. I've learnt quite a lot along the way and have become more confident in speaking Korean. I feel that I know more about Korea's history and culture, thanks to my Korean teachers."

After deciding to take the Year in Korea as part of her Bachelor of Asian Studies, Yoo applied for and won a \$5,000 Australia-Korea Foundation Scholarship, which has helped pay for airfares, living expenses, and textbooks.

"I chose to undertake the Year in Asia-Pacific because I felt this would be an excellent opportunity to immerse myself in the Korean culture and language," Yoo says. "I would definitely recommend students studying Korean spend a year in Korea – it is invaluable, especially if you want to ... understand the lifestyle of the Korean people."

An average day in Seoul for Yoo starts with her "rushing off to make it in time for my 9 o'clock class ... I have Korean language classes every weekday from 9am-1pm, so I feel I am learning a lot of Korean language all at once, which is good because although it may be somewhat intensive, I know I can use the language skills learnt in class outside the classroom."

Yoo hopes her language and cultural knowledge will help her get a job in a government department once she graduates. "I plan to further my studies with a Masters or Honours degree, and then hopefully I will find a job where I can use both my Asian Studies and Law degrees," she muses. "Maybe something related to diplomacy."

But for now, Yoo is focused on her studies and getting the most out of her time in Korea, including getting to know the place where she was born. ■

Facing up to failure



Krista Clews De Castella is bound for the US as a Fulbright scholar. Photo: Martyn Pearce

ANU psychology student Krista Clews De Castella will take up a Fulbright Postgraduate Scholarship to spend a year in the United States researching fear of failure and academic underachievement amongst high school students.

BY JAMES GIGGACHER

The expectations of parents, teachers, friends, society – and even oneself – can be daunting for many young high school students. The notion of success can easily become a swirling sea of anxiety and uncertainty.

Compounding this pressure is the fact that for many young students, high school is also a time when they take their first steps into the wider world. It is often hoped, and almost always expected, that we commence such journeys by putting 'our best foot forward'.

But what happens when a young person's fear of failure is so great that it leads to total inertia? How does a fear of underachievement prevent young people from pursuing their potential to the fullest?

Krista Clews De Castella wants to find out why students underachieve and will take up a Fulbright Postgraduate Scholarship in the United States to do just that.

The psychology PhD student from the ANU College of Medicine, Biology and Environment will explore the way fears and false beliefs lead to negative self-fulfilling

prophecies and student disengagement. She's particularly interested in what can be done to promote resilience.

Clews De Castella says self-handicapping is a protection or self-defence mechanism that enables an individual to attribute their failures to something else, rather than their own input or ability.

"Self-handicapping is a really interesting problem, especially in the West," she says. "Failure is always frightening but I think that for a lot of students it is easier to swallow if you have brought it on yourself – not studying for a test, being sick, not putting in enough preparation or just giving up altogether.

"Self-handicapping strategies offer some short-term benefits like buffering self-esteem and mood, but in the long run they're a sure way to bring failure about, which can then lead to a kind of vicious cycle."

One aim of Clews De Castella's PhD thesis will be to identify strategies and interventions aimed at breaking

The chance to undertake research in the US is a logical and seamless progression from the Bachelor of Philosophy (Honours) she is about to complete at ANU, a rigorous, research-intensive undergraduate degree for high achieving students. Prior to undertaking these studies, Clews De Castella graduated from the University of Canberra with a Bachelor of Communications.

Success is also something that runs in the family. Clews De Castella is the daughter of 1985 World Champion Triathlete Gaylene Clews and former Australian of the Year and World Champion marathon runner Robert De Castella. Both her parents have imparted important advice to her about the nature of achievement that has served as inspiration throughout her own life and research career.

"I think research in this area is really important and hopefully will help identify interventions and strategies for helping students deal with fears of failure and overcome anxieties which otherwise might prevent them from achieving their goals." – Krista Clews De Castella

the cycle of failure avoidance, ultimately improving achievement, resiliency, and students' sense of control over challenges in their lives.

"I think that one of the things that drives self-handicapping behaviour is fear of failure and a belief that a person's ability is something that is fixed: that they can't control or improve on," she says.

"When ability is something that is seen as malleable then the students are less afraid of failure because it is seen as diagnostic behaviour for how to improve."

Clews De Castella points out that self-handicapping behaviour not only affects students in their studies and their academic life, but can also have all kinds of implications for an individual's later life, their careers and even their families.

"I think research in this area is really important and hopefully will help identify interventions and strategies for helping students deal with fears of failure and

overcome anxieties which otherwise might prevent them from achieving their goals."

The potential of Clews De Castella's research was immediately evident to the Australian-American Fulbright Commission, the body responsible for administering the Fulbright Scholarship in Australia.

In awarding a 2010 Fulbright postgraduate scholarship to Clews De Castella, Australian-American Fulbright Executive Director, Dr Joe Hlubucek, said that her research will play an important role in the lives of students in the future.

"Pressure to perform can be a key factor in holding some people back," he says. "Ms Clews De Castella's research will help people to address those issues to improve both their academic work and their future careers."

Clews De Castella is researching aspects of failure and success, but she has also experienced success in her own career to date.

"My parents have always encouraged me to focus not on natural ability, but the capacity to improve on our abilities," she explains. "They have also dealt a lot with athletes that have issues with self-handicapping in terms of performance anxiety and fears of failure."

Clews De Castella's upcoming year in the United States isn't the first time that she has undertaken research overseas. As part of her Bachelor of Philosophy (Honours) degree Clews De Castella has spent the last 18 months living in Japan - where she coordinated a large-scale research project with Japanese high schools.

"My supervisor, Professor Don Byrne, and I have sampled over 1200 kids in eight different high schools across Mie-Ken prefecture," she explains.

"Whilst we have not analysed the results yet, we are really excited by what we might find as well as what they may reveal in terms of cross-cultural comparisons with students in Australia."

This interest in cultural differences has grown out of Clews De Castella's university teaching experience both in Australia and in Japan as part of the Japanese Exchange Teaching (JET) Program. She firmly believes that cross-cultural differences in a student's beliefs and study habits may help explain some of the differences in academic performance.

"I think there are some interesting differences between East and West when it comes to student's belief systems and study habits. I am hoping that research in this area will identify ways to help students become more resilient to failure, challenge some of these beliefs and habits and hopefully lead to improved academic performance," she says. ■

States of flux

Two international relations scholars from ANU have won a prestigious grant worth US\$600,000 from the US-based MacArthur Foundation. The grant is funding a three-year policy-focused program investigating the enhancement of regional security frameworks and order building in Asia and the Pacific.

BY JAMES GIGGACHER



There is geopolitical drama unfolding in the heart of East Asia that could transform the region's security order and radically alter interstate relations within the Asia Pacific. It is a story about the rise of China, the perceived relative decline of the United States and the reactions of regional states. Think *War and Peace*, set to Peking Opera and filmed in Hollywood.

Our story takes place at a time of momentous change in the global balance of power. The growing power of Beijing in regional economic, political and strategic affairs is making waves globally. China's continuing rise is also hampering US domination of the Asia Pacific.

Many people are asking what this flux means for peace and security in the region. This is the central question of a three-year international research project led by Professor William Tow and Professor John Ravenhill, both from the ANU College of Asia and the Pacific. The project explores how traditional security ties between the US, its treaty partners and other states in the Asia-Pacific fit into the region's growing and increasingly important multilateral security politics.

"There is clearly historical structural change going on in the regional security order," says Tow. "US security and diplomatic links with states in the region – including Australia – have relied until now on bilateral relationships."

These bilateral alliances are commonly referred to as the 'hubs and spokes' system and were established during the Cold War. The system places the US at the centre of a series of one-on-one relationships with nations including Japan, South Korea, the Philippines, Malaysia, Singapore, Thailand and Australia.

Not only have these bilateral relations countered potential security threats to the US, they have also enabled America to maintain a level of hegemony and pursue its interests in the region.

"Yet the balance of power in Asia and the Pacific is shifting, particularly as China grows in influence," explains Tow. "In this context of change, bilateral relationships may not have the resilience and longer term stability that multilateral relationships can provide."

"For instance, in recent years we've seen multilateral institutions like the Association of Southeast Asian Nations (ASEAN) Regional Forum grow in status."

ASEAN is a geopolitical and economic organisation of 10 countries located in Southeast Asia. It includes the maintenance of peace and stability in the region as one of its main aims. Other important multilateral frameworks in the Asia-Pacific region include the East Asia Summit, the Asia-Pacific Economic Cooperation grouping, the Six Party Talks (on Korean security) and the ASEAN + 3 group – the last incorporating China, South Korea and Japan into the ASEAN framework.

"The challenge for us is in thrashing out the ways that established bilateral and multilateral links can connect and complement one another in ways that enhance security," says Tow.

While this is no small task, it is one that Tow and Ravenhill are pursuing with enthusiasm. In 2009 they won a US\$600,000 grant from the MacArthur Foundation to fund their research program. They recently hosted a series of workshops in Australia, the Philippines and Japan for leading international relations thinkers and security experts.

The three-year program will include more workshops and seminars later this year and culminate in a simulation event and case study analysis for government representatives, policy analysts and researchers at ANU at the end of 2010.

"We are interested in how the regional security architecture is evolving to accommodate recent and ongoing changes to the regional and global order," explains Ravenhill. "One of the key aspects of the project is to come up with policy papers to suggest recommendations to governments as to how they should best proceed to make sure that security architecture meets the needs of the future."

Another key priority is to promote global stability by identifying new approaches to regional security architecture. This goal forms part of the broader objectives of the MacArthur Foundation's Asia Security Initiative or ASI – a network of 27 institutions researching the key security challenges facing the region.

"Up until now, the regional security architecture appears to have served the region fairly well – in that one hasn't seen any major interstate conflict over the last three decades," Ravenhill says. "Increasingly, however, people are worried as to whether existing configurations are sufficient to meet the new challenges that governments face today, including changing power differentials and the emergence of new security challenges such as the demands for human security."

So how exactly will the project contribute to promoting such an important goal?

While Tow and Ravenhill do not claim to have all the answers, they believe that some solutions may be identified by investigating the ways in which the region can shift from a bilateral security posture to one that balances bilateralism and multilateralism.

**"The real question now is whether that 'classical approach' to the management of power is relevant as substantial structural changes to the Asia-Pacific region are unfolding."
– Professor William Tow**



The Association of the Southeast Asian Nations (ASEAN) flag (R) leads the flags of the 10-member countries during the ASEAN Regional Forum. Photo: Getty Images

Bilateralism and multilateralism

"My group looks at the synergies between bilateral and multilateral security processes in the Asia-Pacific," says focus group leader Dr Brendan Taylor from the Strategic and Defence Studies Centre at ANU. He and his colleagues are investigating new ways of utilising bilateral and multilateral approaches to respond to ongoing and emerging security challenges in Asia and the Pacific.

"This is a really interesting question to be looking at in the period of transition that Asia is currently going through. Over the last four to five decades, bilateralism has been the dominant mode of security cooperation."

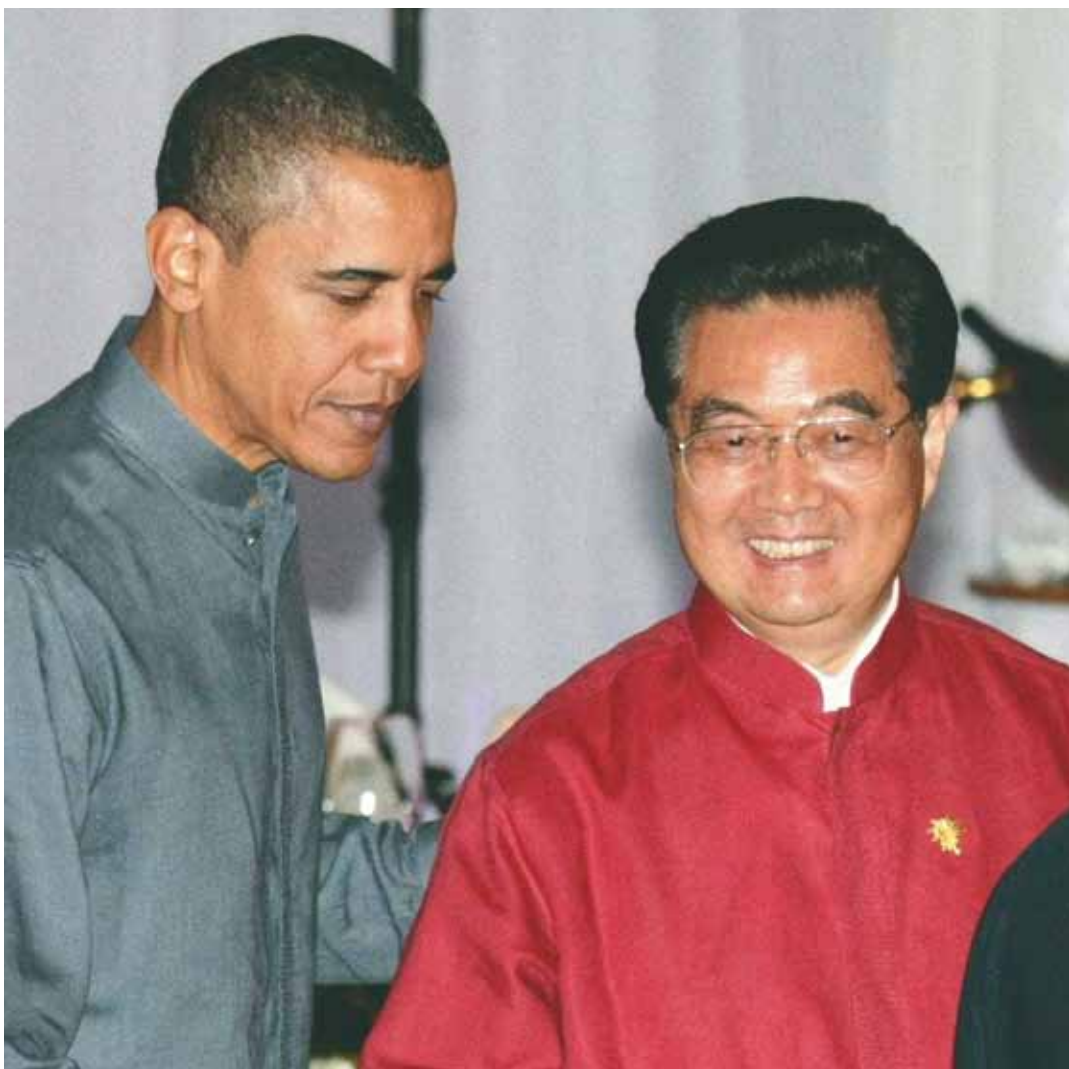
"What we are seeing now is a lot of talk about multilateral solutions but I think that probably the truth will lie somewhere in between the two for at least the time being. Bilateralism is unlikely to disappear."

One key question Taylor and his group are exploring is whether bilateralism and multilateralism will continue as mutually exclusive modes of security cooperation. Alternatively, will the region increasingly move to a situation in which multilateralism continues to act as a cover for bilateralism?

Taylor highlights the Six Party Talks on nuclear disarmament for North Korea as an example of this dynamic.

"At the moment I would argue that these talks have been used for some time now as a vehicle or cover for the US and North Korea to cooperate without the US having to step back and say we are agreeing to negotiate bilaterally with the North Koreans."

"Or vice-versa: as bilateralism increases, is it going to be a building block or stepping stone to increased multilateral security cooperation? You could look at the North Korean situation and say that is also what is happening there."



Barack Obama joins his Chinese counterpart, Hu Jintao, for photos at the APEC summit in Singapore. Image courtesy of Fairfax Digital Collection - Photographer: Yomiuri Shimbun

Alliances: timeless or out of time?

"In terms of organising principles within contemporary international orders, alliances have been central in how power is applied, distributed and correlated," says Professor William Tow, team leader for the alliance politics focus group.

"The real question now is whether that classical approach to the management of power is relevant as substantial structural changes to the Asia-Pacific region are unfolding."

Traditional alliance strategies are generally defensive in nature, obligating allies to join forces in the event of an attack by another state or coalition. Non-traditional alliance politics are instead about joint security actions, such as responding to natural disasters, pandemics and environmental and transnational crimes.

As a legacy of the Cold War, the Chinese argue that the bilateral alliances the US maintains in the Asia-Pacific are no longer relevant. In contrast, the US argues that its alliances can be adapted from a threat focus to instruments for stabilisation and order building.

To this end, the project leaders have organised their research program into 'key focus groups'. The first group will investigate the processes for achieving a nexus between bilateral and multilateral security arrangements. Project participants have also been organised into three additional groups: one reviewing the relevance of alliance politics within and between regional states; another exploring the relationship between Asian economics and security; and the final group examining nuclear non-proliferation and arms control strategies.

Yet the research project is not simply an exercise in finding answers: it is just as much about asking questions. This is in part due to the level of uncertainty regarding how events in the region may play out, as well as the fact that many of the key players are keeping their cards close to their chests.

One fundamental question for any international relations or security analyst today is just how will the US react to China's increasing prominence?

Speaking at the inaugural meeting for the alliance politics key focus group earlier this year, renowned

**"Up until now, the regional security architecture appears to have served the Asia-Pacific region fairly well ...Increasingly, however, people are worried as to whether existing configurations are sufficient to meet the new challenges that governments face today."
- Professor John Ravenhill**

strategic studies expert and head of the Strategic and Defence Studies Centre at ANU, Professor Hugh White, outlined three possibilities.

"[The United States] could slowly withdraw, or it could share power with China, or it could maintain primacy by contesting China's challenge," White says. "Whichever option America takes, Asia's international order would be very different.

"The most risky of these outcomes is also the most probable. America is unlikely to withdraw from Asia, and would find it harder to share power with China, so the default option is strategic competition."

Tow also sees the response of the US as a critical consideration when assessing the future security and stability of the region.

"Will the US come to terms with sharing power with others in the region to a greater extent than it has up until now?" he asks. "Or will there be a continued instinct within the US to exercise primacy, which has been the predominant trend over the last 50 or 60 years?

"Alternatively, will Washington be content to become a formidable but nevertheless off-shore security actor prone to get involved only if there are really serious instances of regional anarchy?"

Tow puts forward a fourth scenario. "People could stall for time until things become clearer and then rely on osmosis to essentially establish a sort of compatibility between the structural entities that are already in place."

For its own part, the US isn't giving much away. In a major policy speech delivered in January this year, US Secretary of State Hillary Clinton emphasised that the US was back in Asia. At the same time, Clinton stressed that an active United States was not an America that would dominate the region.

"I want to underscore we are back to stay," Clinton said. "People want to see the US more closely engaged

in the region, so that as China rises there's the presence of the US as a force for peace and stability, a guarantor of security.

"The US can provide resources and facilitate co-operation in ways that other regional actors cannot replicate, or in some cases, are not trusted to do. No country, however – including our own – should seek to dominate these institutions. But an active and engaged US is critical to the success of these."

The overall picture is complicated by the fact the US wants to remain assertive on the international stage despite its increasing limitations. Added to this is the question of how China will react to the reinvigorated US role at the global level as well as its own burgeoning sense of power.

"The optimists say that the rise of China will be a relatively benign process," Tow explains. "It will integrate smoothly into some type of regional system or security order and that the tensions or conflicts involved in getting from where we are now to that state of affairs will be minimal.

"But the pessimists say that no, historically when you have the rise of a great power, other great powers are threatened or other actors or players in the region will seek to balance against the rise of this power.

"At this juncture there are very prominent and powerful schools of thought which support both sides of that argument. But I don't think there is consensus yet in terms of which way the situation is going to go. Obviously, there is a lot of hope that it will be the first outcome but it is really too soon to tell."

Another critical factor to consider is that China requires a stable international environment to continue its remarkable economic growth, a precondition of any state maintaining its relatively stable domestic order.

At the same time, China's economic growth brings another cornerstone of American primacy into question: the universality of US values and ideas.

Taken together, the economic, political and strategic weight China now brings to bear globally raises one very important question: can China tolerate not being treated as an equal to the US?

While the question of China and the US and other issues will keep the project leaders and their collaborators preoccupied until April 2011, there is one thing that both Tow and Ravenhill know with certainty. The future of Asia-Pacific security is one of the key issues of our time.

"Here you have the two major powers in the world," Ravenhill emphasises. "These are very significant security actors and any conflict between them is going to create worldwide repercussions. Also, because of the significance of all five major actors involved in Northeast Asia – China, the US, South Korea, Japan and North Korea – if any significant conflict were to occur, you're talking about global conflict." ■



The countries of the Pacific Rim now account for over half the world's Gross Domestic Product and over the next few decades the Asia-Pacific will become the world's economic engine. Photo: mddphoto/istockphoto.com

What price peace?

"Historically, the relationship between economics and security has been somewhat neglected. If you compare it with the literature, for instance on alliances, it is relatively underexplored," says economics and security focus group leader Professor John Ravenhill.

"So our starting point is very much the argument that we are living in the region that is the most economically dynamic in the global economy. What are the security implications from this?"

Ravenhill notes that the rate of growth in a state affects its overall budget and consequent military expenditure. He labels this as one "very simple relationship" between economics and

security. A more complex relationship is the increased economic ties between regional states and increases in security.

"We are currently seeing a transformation of the economic relations between the countries of the region: for example the regionalisation of production. There is a literature out there that suggests that the more countries are economically interdependent the less chance there is of them entering into armed conflict with one another.

"I would certainly argue that would make it more likely that these countries will be more averse to entering into armed conflict because the costs now are so much higher than they were before."

Another complexity is that with rapid economic

growth there is also increased competition for scarce resources. Ravenhill asks how this development will impact on the overall security situation in the region. What mechanisms can be put in place to provide a sense of security for states whose economic prosperity rests on unimpeded access to imported natural resources?

"Another dimension that we will be exploring is what has been referred to as 'mutually assured financial destruction' a comment on the situation where China is by far the largest purchaser of US government debt. To what extent does one country gain leverage over the other as a consequence?"

Time will tell how China's relationship with America is tempered by the fact that it has a vested interest in continued US prosperity.

Pop programming

First-year computer programming students might be expected to produce lines and lines of code, but generative art? These 'pop' images are the product of student assignments for the subject Comp1100, run out of the ANU College of Computer Science and Engineering.

Subject convener Dr Clem Baker-Finch said the programming techniques behind these graphics are "a cornerstone of generative art and are widely used in producing cinema animations and computer games."

"The 'off-lattice Eden cellular automaton' is, among other things, a simple model of cell propagation," Baker-Finch says. "At its most basic, each cell in the community propagates

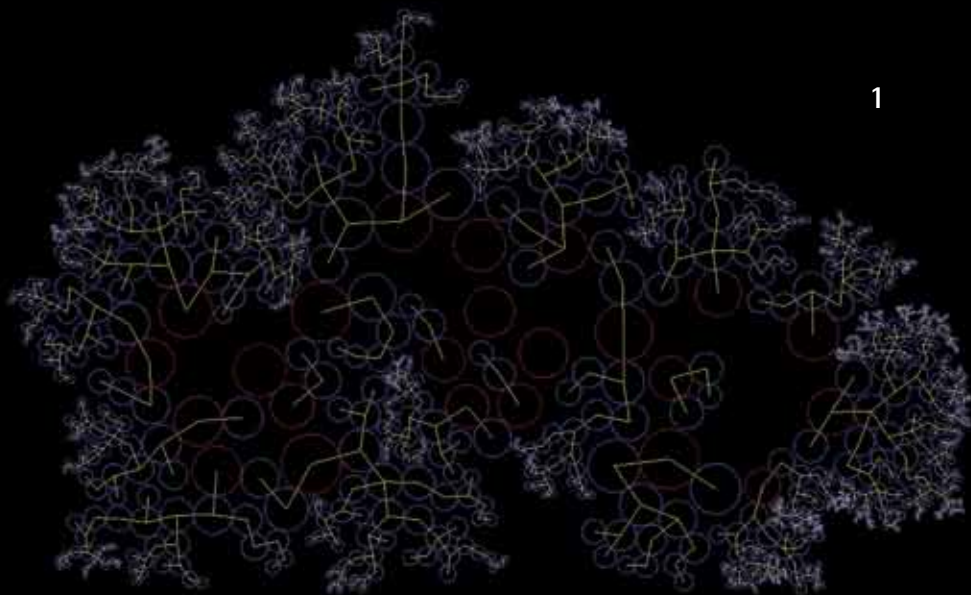
a child, at some random position touching the perimeter of its parent. The child only survives if it does not overlap with any other cell in the community. As the process continues, the community becomes ever more crowded and successful propagation becomes less likely.

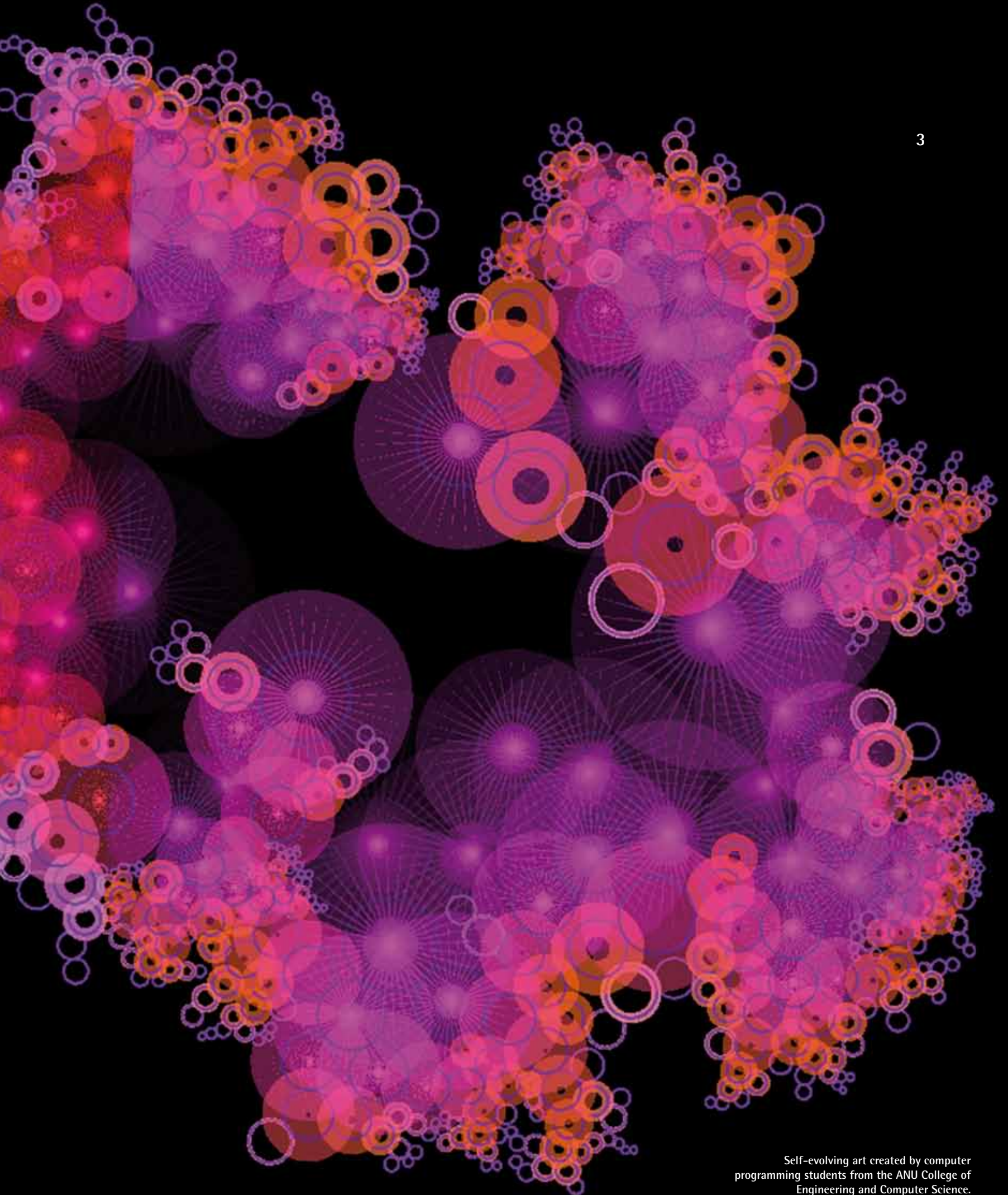
"This was a typical first programming, but students are encouraged to extend and vary the rules of the automaton in open and creative ways. For example, cells may be given limited lifetimes and different shapes and colours. Interesting effects are achieved by varying the survival rules, the rules governing the position of children relative to their parents and so on. Even though the rules governing the process remain extremely simple, the overall emergent behaviour may be surprisingly complex." ■

Alex Mason 1.

James Spears 2.

Adam Zeglin 3.





Self-evolving art created by computer programming students from the ANU College of Engineering and Computer Science.



Professor Julio Licinio has built a career based on dual specialities in endocrinology and psychiatry.

Photo: University of Miami

Found in translation

The new director of The John Curtin School of Medical Research has built a career on bridging the gap between research on the body and brain, the space between fundamental and clinical research. His work on obesity and depression has taken him from Brazil to the US and Australia, with the occasional trip to Turkey. He could happily work alone, but also enjoys interacting with people. These complex links are leading to a simple goal: improving health. Meet Julio Licinio.

BY SIMON COUPER

Julio Licinio owes his childhood self an apology. At school, the young Brazilian decided that whatever career he was to pursue, it should definitely be *different*. Different enough from those paths trodden by his family and peers, that is.

But at some point, Licinio changed tack and followed his uncle and brother into medicine. Years of clinical training, practice, research and specialisation followed, all of it challenging and exhausting and rigorous, but certainly a career that on the surface would be called traditional rather than different.

Except that where many researchers stick with their specialisation track, deepening and refining their knowledge about a narrow area, Licinio branched out. He added qualifications in psychiatry to his medical work, starting a course of research into brain-body interactions that would lead to important discoveries and help consolidate a new medical discipline called translational science.

"I thought I was going to make a big change, leave behind endocrinology [the study of internal secretions,

such as hormones] and go to this other area to do with the brain and the mind, and I didn't see the two of them connected initially," Licinio says. "It was a very difficult decision to make at the time."

He recalls receiving advice from a sage colleague in New York that helped him make up his mind. If it's something that you think you're going to enjoy, the mentor said, you might as well do it sooner as you'll gain nothing from waiting.

"I guess it did pay off," Licinio says. "As I went into psychiatry, it became clear to me that a lot of medical health problems that people have are a direct consequence of behaviour."

Licinio's choice has made his career unfurl in unexpected directions, different in ways that his young self would have condoned. In 1984, while he was working in an intensive care unit as a medical resident at the University of São Paulo, Licinio met his current life and research partner, Professor Ma-Li Wong. At that time, Wong was also a resident, but she would go on to specialise in neurology and psychiatry, collaborating

with her husband on numerous research projects and joining him when he came to Australia for the latest phase in an unconventional career.

The most recent chapter in Licinio's career began in September when he won the role of Director at The John Curtin School of Medical Research at ANU. Previous appointments at the University of Miami included Miller Professor of Psychiatry and Medicine and Associate Dean, following a term as Chairman of the Department of Psychiatry and Behavioral Sciences. Prior to that, Licinio held academic appointments at the University of California, Los Angeles, the National Institutes of Health, Yale, Cornell, Albert Einstein, and University of Chicago.

"As much as I enjoy doing my own work, I don't think I'm going to solve anybody's problems on my own. That's why I think it's important to bring people together on the big problems and try to do something on a broader scale."

- Julio Licinio

His moves from Brazil to the US to Australia shadow the way his research shifts gears between fundamental research and clinical medicine, body and brain interactions. He also shifts between research on obesity and depression, teasing out the links between the two conditions.

Licinio says that this kind of bridging approach to research is increasingly important to develop treatments and cures for pressing health problems. "It's become clear that to make a difference for these major diseases, you need to have a really comprehensive program of research that goes from many fundamental discoveries, that works up to lots of people and different kinds of treatments, and that whole process is what's called translational research," he says.

The Brazilian's interest in depression led him to one of the important discoveries in his career, which is itself a good illustration of the value of a mind-body approach or a translational focus.

It starts with a hormone called leptin, which is produced by the body's fat cells and tells the brain when you have had enough to eat. It also plays a role in the onset of sexual maturity, signalling to the body when there are enough reserves of fat to support reproduction.

"I'd been studying for many years the relationship between mind, body and depression," Licinio says. "In depression, the body's stress hormones are elevated. Independent studies showed that there was an inverse relationship between leptin and stress hormones in animals. I wondered if this was happening in people as well."

Together with colleagues, Licinio designed the first test of leptin ratios in humans at regular intervals throughout the day and night. Every seven minutes, research subjects gave blood samples from which levels of the hormone were measured.

Called a pulsatility analysis, this research was the first to show that leptin levels are regulated in a complex and rhythmic way by the body over a 24-hour period, and are not simply amorphously high during the day and low during the night. The work showed that leptin was an important regulator of stress hormones, which is one of the underlying factors for the behaviour known as comfort eating. This knowledge may be used in the development of new antidepressant medication based on the leptin protein.

Licinio has the Turkish policy of universal male conscription to thank for helping to turn up another important aspect of his work on leptin.

In Turkey, all adult males are conscripted for a period of national military service, without exceptions. This means people with severe medical conditions, including chronic obesity, must also do their bit, including going through the prerequisite medical check. For some people from remote parts of the country, conscription leads to their first access to medical specialists. This was how a group of five men with obesity came to the attention of Dr Metin Ozata, an academic endocrinologist working for the Turkish military. That doctor's interest led to analysis of the men's DNA, which in turn showed that one of the men had a genetic mutation that meant his body did not produce leptin at all.

When Licinio read about the man with no leptin, his curiosity was fired. Here was an opportunity to introduce a control in his research on how leptin interacts with the brain and body. After all, it is impossible to remove a healthy person's leptin purely to see how the body copes without it.

In the late 1990s, Licinio travelled to Turkey to meet the man with no leptin, plus some members of his extended family who also had the mutation. The adults were chronically obese and yet to experience puberty. Licinio convinced the Turkish patients to take part in a research project looking at how their bodies functioned with no leptin, and how they would react once the hormone was introduced. Three of them eventually came to Los Angeles in the US, brought by Licinio with funding from a grant from the National Institutes of Health (NIH), equivalent of the Australian National Health and Medical Research Council.

Without the hormone, the Turkish patients in the study were shown to have several endocrinal defects that were likely to shorten their lives considerably. Once given the hormone, all the research subjects lost enormous amounts of weight and experienced puberty. Neural imaging tests also showed that the subjects' brains were firing in very different places in response to food stimuli before and after receiving the hormone.

Licinio says apart from being able to help these Turkish patients lead longer and healthier lives through leptin treatment, the research has been useful in illustrating the key role of the hormone in affecting behaviour and body. He and colleagues hope to continue working with the Turkish subjects in Australia under a new research grant, currently awaiting approval, focussing this time more deeply on the neural-psychological role of leptin.

Drugs based on the body's response to the hormone leptin could help combat obesity.
Photo: rrocio/istockphoto.com



The relationship between genetic variation and receptivity to drugs is another research area that inspires Licinio, to the extent that he co-founded a journal on the subject. The journal and research line is known as Pharmacogenomics, which involves "trying to understand the genetic basis of why some people respond to drugs and others don't."

"I don't understand why it hasn't been studied more aggressively earlier," Licinio says. "If you have cancer and I give you chemotherapy, some people respond well and recover and stay alive, some people don't. Some people die despite treatment."

Given his interest in depression, Licinio has conducted a number of pharmacogenomic research projects to see why drugs like Prozac help some people deal with the disease and not others. He recalls one of his early psychiatry patients who suffered depression telling him in a pointed way that the drugs weren't working: "Doctor, why don't you just ask me to drink a glass of water every day [to treat my depression]?" the man said. "I would have no side effects and I would feel as depressed as I do with this drug."

Licinio says that technological advances for genetic sequencing in recent years mean that it is becoming easier and cheaper to search out genetic variations that

may be responsible for the failure of certain drugs in certain people.

In a study of Mexican American people living in Los Angeles, Licinio and his colleagues turned up many novel genetic variations on what are otherwise very well studied genes. He says prior to that work, there had been very little genetic analysis conducted of Mexican Americans, despite the fact that they are eight per cent of the entire US population.

"I think that in general, but particularly in understudied groups, there is a lot of variation that we're not even aware of," he says. "I think that's very important for future studies."

As for the future of medical research, Licinio is keen to see more translational research happening across the board. "As much as I enjoy doing my own work, I don't think I'm going to solve anybody's problems on my own," he says. "That's why I think it's important to bring people together on the big problems and try to do something on a broader scale."

He says this kind of collaboration between researchers is already taking place at his new home at JCSMR, but he also hopes to foster more of it in years to come. ■



Conflict and peace in Norway

Spending six months in Oslo as part of her graduate coursework studies deepened one student's understanding of the complexity of peace and conflict issues.

BY SINEAD CLIFFORD

The Norwegian capital is home to the International Peace Research Institute Oslo, an institution that ANU students can access as part of their postgraduate study.
Photo: rusm/@istockphoto.com

It was true – there were Norwegians in the tree. It was day two of my six-month stint in Oslo. I was walking through the park in the charming borough of St Hanshaugen, when sounds of frivolity alerted me to at least five people peering down through the branches.

It was high summer. Well, it was the Norwegian version of high summer, which is nothing if not beautiful. Long, soft evenings stretch out into an odd blue midnight that never appears to be truly night. The day: a mix of blue and green brilliance, from the gentle rustlings of the parks to the foamy splashes of the ocean fjord. This version of summer is the kind cousin to the intense blaze of the Australian season back home.

It appeared that I was not alone in marvelling at the gentle glories of the Norwegian summer. This late bloom of sunshine came at the end of what had been a rather wet and cold season. No one seemed more amazed than the Norwegians themselves, particularly those who had taken to the tree tops to get as close to sun as possible. I nodded naively at their stories of minus 40 degree weather, as if I too had often been deprived of light and heat for weeks on end. Apparently, my 'think of Antarctica face' was not sufficiently convincing, as I saw many blond heads shaking their heads sagely at me. I didn't understand what they were talking about, but I might in time.

I was in Oslo for six months to study as part of an ongoing collaboration between ANU and the International Peace Research Institute Oslo (PRIO), whose research program focuses on various aspects of peace and conflict research. While PRIO is primarily a

research institute, it also promotes its peace research agenda by taking part in conflict resolution and policy formation, as well as disseminating its research to the public. As an adjunct to this effort, ANU has developed a peace and conflict specialisation that can form a part of its various graduate diploma and masters degree options offered through the Graduate Studies in International Affairs Program (GSIA), part of the ANU College of Asia and the Pacific.

This specialisation option is unique, as it allows ANU students to access courses featuring international researchers and practitioners, who discuss their research outcomes on cutting-edge topics or who have engaged in different aspects of conflict resolution and peacebuilding. Graduates who wish to be practitioners in the field, or academics in their own right, are exposed to the stark and confronting realities of peace and conflict research and practice.

Among the prominent speakers at PRIO was Thorvald Stoltenberg, one of Norway's most experienced politicians. He served as Norway's Defence and Foreign Minister, in addition to being Special Representative to the UN Secretary-General to the former Yugoslavia and President of the Norwegian Red Cross. Another key presenter was Kristin Lund, Norway's first female general who had served in the Balkans, the Middle East and Afghanistan. Their insights into some of the most confronting issues facing the international community were both lucid and thought provoking, particularly what they had to say about the moral and ethical obligations of wealthy nations.

Sessions led by PRIO researchers were also challenging and engaging. Topics covered included the relationship between natural resources and conflict, the impact of conflict on women, the role and agency of ethics and war and processes behind conflict resolution and consensus building. These works often revealed the true ethical dilemmas behind researching people traumatised by violence, the problems faced by societies attempting to re-establish societal norms following conflict, and the issues encountered when researchers engage in areas of high importance yet have limited data sources.

As the Norwegian days shortened, so too did the time we had to produce research papers and prepare for exams. Vivid autumn leaves were eventually covered in the first snows and the long summer twilights were taken over by an ever-expanding night. Australian excitement over snow was met with slight Norwegian bemusement. The winter sun staggered along the horizon, keeping decidedly student-like hours, sometimes making an appearance by ten in the morning and sloping off by two thirty in the afternoon. The glory of summer had been overtaken by the haunting winter. Christmas preparations had begun in earnest, so too had our preparations to return home to Australia, where heat and light appeared to be frivolously abundant. Talk of polar bears and snow was replaced with stories of 'drop bears' and beaches, and, of course, study.

More on the Graduate School of International Affairs at ANU: <http://rspas.anu.edu.au/gsia/> ■



Cosmic time machine

Scientists are analysing rocks from outer space to peer back in time to a much more volatile period in the story of the early solar system.

BY TIM WETHERELL

Simeon Hui holds a chunk of moon rock. Photo: Tim Wetherell

If we were able to travel back in time about four and a half billion years, we'd be able to see the early planets of the solar system beginning to form around an infant sun.

This was a time of massive and enormously violent impacts, as forming planets swept debris and each other out of their orbital paths. It was around this time that scientists believe that a body about the size of Mars smashed into the Earth with such force that enough matter was ejected to create the Moon.

Over time, things settled down. Planets gradually found their present-day orbits and the frequency of major collisions declined. Then, around four billion years ago, just about the time life was beginning on Earth, something odd happened. The orbits of Jupiter and Saturn shifted slightly, which in turn perturbed Uranus and Neptune. The gravitational effects of this reshuffle extended out into the Oort Cloud – a halo of comets in the outer solar system.

This gravitational reshuffle was enough to send a shower of comets into the inner solar system, hitting asteroids and catapulting them like billiard balls across the orbits of the inner planets. The result was a second period of massive bombardment which undoubtedly had a profound effect on life on Earth.

Perhaps just as interesting as these events is the way that humans living four billion years later have been able to figure out just what did happen in the distant past. Dr Marc Norman and his PhD student Simeon Hui are two scientists doing just that.

The researchers from the Research School of Earth Sciences are working with tiny quantities of lunar soil gathered by the Apollo astronauts. They are also using the most modern of analytical techniques to unravel the forensics of those distant times.

"Often people think of asteroid impacts like bullets hitting solid matter, after which the bullet comes to rest mostly intact inside the material," Norman says. "But the velocities of asteroid impacts are so great that the energy released is enormous. This often causes the original impactor to simply vaporise so the physics of these impacts is a lot more like that of underground nuclear explosions than conventional ballistics."

These impacts gave the Moon the rugged cratered appearance it has today. The Earth was also battered in the same way but, unlike the Moon, craters on Earth have been all but eradicated by millions of years of plate tectonics, erosion by atmosphere and oceans and even human activity.

But how exactly can scientists extract such information about the history of the solar system from lunar soil?

"We know from looking at igneous lunar rock – solidified lava flows from deep in the mantle – that elements like gold and platinum are almost non-existent in normal lunar rock," Norman says. "But we also know, from [studying] meteorites that fall on Earth, that these elements are actually quite common in asteroids. By using a technique called mass spectrometry, we're able to separate out lunar samples that were formed by impacts from non-impact material by measuring the gold and platinum content."

The really interesting question to an historian of the solar system is not just where the impacts occurred, but when? To work that out, scientists take advantage of radioactive decay. Over very long periods an isotope of potassium decays into argon. When an asteroid or comet impacts the Moon, the enormous energy that's liberated tends to turn rock into a fine spray of molten glass. This cools into the form of tiny glass spherules, a fraction of a millimetre across. These spherules contain small traces of the potassium isotope but essentially no argon, because the melting releases it. As the spherules



Four billion years ago the inner solar system was a violent place, gravitational perturbations of the orbits of the gas giants initiated a comet shower which in turn deflected many asteroids into the paths of our planet and its moon, depicted here. Image: Tim Wetherell

“Often people think of asteroid impacts like bullets hitting solid matter, after which the bullet comes to rest mostly intact inside the material. But the velocities of asteroid impacts are so great that the energy released is enormous.”
– Dr Marc Norman

age, the radioactive decay of the potassium isotope begins to introduce argon again.

“In effect, the impact resets the potassium-argon clock,” Norman explains. “From the moment of impact there is essentially zero argon in the glass. However, as time passes, the potassium slowly decays, creating new argon. If we measure the ratio of potassium to argon in a given sample, we can get a pretty reliable estimate of the age of the impact feature the samples come from.”

Although the samples were collected almost 40 years ago, this is the first time it’s been possible to perform advanced chemical analysis and isotope dating on the exact same spherule. “This is really important to our data as it means we can determine the likely region where each of our glass spherules was formed and the time at which they were formed,” Hui says. “That’s a really big advantage in a place like the Moon where there have been so many impacts that a lot of the material is heavily intermixed. With this data, it is possible to narrow down unique impacts and build up a history of lunar bombardment.”

Quite apart from filling in details about the early solar system, the researchers’ work is also shedding

light on the nature of life on Earth. “We now know that comets contain vast quantities of water,” Hui says. “One of the really interesting questions that raises is: was the water in the Earth’s oceans brought here by comets impacting the surface or did it condense around the early Earth from the proto-planetary disc? If the Earth was indeed hit by a Mars-sized body about four and a half billion years ago, much of any water it had may have been lost in that process. If that was the case, life on Earth as we know it may be due to comets.”

The work of Norman and Hui is contributing to a large body of scientific knowledge that enables us to build up a history of the frequency of impacts in our part of the solar system. One of the interesting and perhaps alarming things to arise from these studies is that the number of lunar impacts has risen slightly in the recent past, raising the question of whether another comet shower may be coming soon. But it’s not time to sell up and move to another planet. ‘Soon’ on a cosmic scale is unlikely to be soon on a human scale.

More: This article first appeared in ScienceWise, the science magazine of ANU.
<http://sciencewise.anu.edu.au> ■

Philosophies of

One researcher argues that in order to turn around environmental degradation in the Murray-Darling basin, we need to change how we think about the fundamental relationships between people and planet.

BY JAMES GIGGACHER



water and land

We just don't all come from Adam and Eve. We come from the simple dirt that we walk upon. And our spirits, and our Baiame, our makers, it's all interconnected there. And people don't even show respect, you know, for that. If our river and environment is dying, then I believe that we as a people are also dying.

These are the words of Lee Joachim, an Indigenous man of the Yorta Yorta people from Barmah, Victoria. His is one of many voices telling a similar story - the Murray River is dying. It is this all too common and tragic imagery that Dr Jessica Weir came across time and again while researching for her PhD in the Fenner School of Environment and Society at ANU.

Weir, now a Research Fellow with the Australian Institute of Aboriginal and Torres Strait Islander Studies (AIATSIS), began her research against a backdrop of enormous ecological damage in the Murray-Darling basin - devastation that had brought environmental issues to the fore of political action and policy.

After three years of listening to the perspectives of traditional owners along the Murray river, Weir realised that both Indigenous peoples and bureaucrats shared a common desire to preserve the environment, yet change was being hampered by the different assumptions that each group was bringing to negotiations

"I could see that there was a miscommunication going on," Weir says. "Indigenous people would express really profound statements about the river which couldn't easily be interpreted into water management law and policy. What I learnt by working with Aboriginal people along the Murray was that there are some really fundamental cognitive lapses in the way we [as Westerners] talk about environmental issues today."

For Weir, one of these fundamental gaps in Western thinking was the inability to view environmental relationships through a sense of deep and intimate 'connectivity'. Another way of thinking about this is as a holistic, sentient relationship, wherein humans are not separate from the environment that surrounds them. According to Weir, this idea of connectivity is evident when Indigenous people say that they and the Murray river are one. She says it's evident in the way traditional owners from the inland river country express ecological destruction in terms of the destruction of their very being.

Weir says that Indigenous knowledge is often characterised as holistic, meaning that the whole is more than the sum of its parts. Yet she also says that in Indigenous knowledge systems, the world is not explained that simply. Instead, Indigenous people view a world of relationships that are embedded with meaning and importance.

"Currently, many people think that philosophy is not relevant to everyday decisions like river management. However, we very much need to see that our management practices are philosophical traditions."

- Dr Jessica Weir

"One of the really powerful ways of understanding this is to talk about country - the Indigenous philosophy of country," Weir says. "Country is not just the place where you live but it is where you learn your ethics and where you pass on your knowledge to your children, where you find your economies, take care of life-giving relationships, [and] where you get your spiritual sustenance."

Weir argues that the idea of connectivity is a potent philosophy that will help address the limitations of contemporary policy and water management responses to the devastation of the Murray-Darling river system.

Take, for example, the difference in understanding environmental management as 'natural resource management' in comparison to 'caring for country'.

"When I went looking for where these terms came from - natural, resource and management - I found a thread which separated humans from nature and instead identified nature as a mute, abstract resource which fell under our human management," Weir says.

Within the framework of 'natural resource management' water is not only a mute, abstract resource, but also comes to exist in a dichotomy between economy and ecology. Weir points out that in this type of thinking ecological interests and economic interests are viewed as eternally incompatible. Yet do societies separate the two ideas at their peril?

"From a dead river you get neither ecological benefits nor economic benefits," Weir says. "That's plain to see down at the Murray mouth today where all people from all walks of life - whether they're dairy farmers to conservationists - are rallying behind supporting the river."

"In contrast, I think the idea of 'country' has a lot to offer a reconceptualising of our water management in Australia, in terms of a better philosophical tradition which will prioritise ecology but also match economy and ecology together. Because you get your

economy from your ecology when you think in terms of connection and relationship, rather than seeking to separate and abstract yourself from the world, [seeing] plants and waters in terms of use value rather than all their inherent qualities.

"If you put one relationship with the river - such as our need for food and agriculture - ahead of all others, you lose the capacity to prioritise the many other relationships that people value. Indeed, you lose prioritising the river itself. It seems to be the obvious, that it is the river which sustains everything, but we don't hear about the river coming first. In fact, we hear about the river as another competitor for 'our' water."

Weir argues that in order to change how we deal with the issues surrounding the Murray-Darling, we need to change our philosophies. She says ideas can't be separated from action, humans can't be abstracted from their environments and environments cannot be separated from societies and cultures.

"Currently, many people think that philosophy is not relevant to everyday decisions like river management," Weir says. "However, we very much need to see that our management practices are philosophical traditions."

"Thus, we need to understand where our philosophies and knowledge traditions are from and what their purposes are. We need to understand how they support sustainable living and eco-systems and how they don't. We need to ask big questions, as well as to question the big narratives that have always engaged philosophers throughout time."

"You can use a range of philosophies to critique our Murray river water management and you can draw on many traditions. But why not draw on the traditions of Indigenous Australians who live with the river, in the river country? They have their own unique philosophies to bring to what is a very challenging management context for the next generation. These philosophies are not 'traditions' which are irrelevant to today's work of modern agricultural production. Instead, Indigenous peoples' philosophies - such as connection and country - provide valuable conceptual tools to help build a river management that will better sustain our river country and our river economies."

Dr Jessica Weir's research has been published as the book Murray River Country: An Ecological Dialogue with Traditional Owners, available through Aboriginal Studies Press. ■



Rock art at Mabaludu depicts a Macassan perahu (boat).
Photo: Daryl Guse

Meeting place

A renewed archaeological dig in Arnhem Land is searching for more clues about early contact between Indigenous Australians and Asian fishermen. In the process, researchers hope to improve the livelihoods of Aboriginal communities today. BY SIMON COUPER

Visiting Anuru Bay is difficult at the best of times. This dip in the coast of north-western Arnhem Land is more than 500 kilometres drive from Darwin, along dirt roads that have been known to eat car suspensions for breakfast.

Once you get there, you'd better be sure you packed well. There are few amenities at the site, and certainly no Hilton.

Also, watch out for the weather. Between December and March the bay cops the brunt of the northern Australian wet season, lashed by tropical cyclones and monsoonal rains.

So why go there at all? The answer would depend on who you asked.

If you're a member of the Indigenous Maung peoples, the answer might be: What do you mean go there? We are there. Anuru Bay is our country.

If you're a Macassan fisherman, the answer would have been: Sea cucumbers, and lots of them.

If you're an archaeologist, the answer is: This is the site of some of the earliest known encounters between Indigenous Australians and people from overseas. This is where those encounters are recorded, to this day, in some of the richest rock art records in the world. And this is where we can search for evidence of pre-European cultural transfer between Aboriginal people and outsiders.

Daryl Guse is one such contemporary archaeologist drawn to the site. The PhD scholar in the ANU College of Asia and the Pacific has spent 20 years working with traditional owner groups in Arnhem Land. He's

motivated by a desire to help Indigenous communities gain recognition of their relationships with their country, so they can take better advantage of cultural tourism, natural heritage management and other development opportunities.

Guse says he has seen little improvement in the living conditions of many remote Indigenous communities over the last two decades.

"In 1990 I could never imagine that things would be exactly the same or even worse. If in our careers we can do anything to support a group of people to use their country ... it gives these people the opportunity to have their site valued," he says.

Guse and his colleagues are working with the traditional owners from the Namunidjbuk Estate, which encompasses Anuru Bay, to gain a richer and more rigorous understanding of the heritage values of the site. Funded by an Australian Research Council Linkage Grant, they will use the project results to support nominations of the site to a range of heritage registers, as well as boosting capacity for local Indigenous ranger programs.

The researchers are also using the linkage grant to partner with the Commonwealth Indigenous Heritage Section in the Department of Environment, Heritage, Water, and the Arts, and the Northern Territory Government's Bushfires Council, part of the NT Department of Natural Resources, Environment and the Arts.

The project is exploring how the culture of the Indigenous people of western Arnhem Land has

changed through time, particularly in relation to contact with mythic and historic outsiders – the Bajjini, the Macassans and Europeans.

We know plenty about European history in Australia, but who were these other people? In Arnhem Land, *Bajjini* means 'the golden-skinned people'. Local elders tell stories of meetings with whale hunters in the distant past, even sitting down with the visitors to share a cetacean snack on occasion. Many anthropologists and historians have put these tales into the box marked 'myth', owing to a lack of supporting archaeological evidence. Yet Guse is keeping an open mind about the Bajjini, saying that the stories differ enough from other encounter narratives to at least be considered as a possible historical event.

While scholars are undecided about whether or not the Bajjini existed, they know for certain that the Macassans were real – and these fishermen were interested in trepang (sea cucumbers), not whales. The Macassans hailed from the city of Makassar in present day Sulawesi, Indonesia. Scholars argue about when they first began venturing south to harvest trepang from the shallow coastal waters of northern Australia, but it is known that they did so up until the early 20th century. The Macassans used the seasonal trade winds to sail during the wet season, setting up temporary villages and rock line processing sites in places like Anuru Bay for their work. Once done, they would ship the dried trepang back to Indonesia for sale into China, where it was valued as a delicacy.

"It's a very sophisticated system that was going on," Guse explains. "One of the things that we're trying to establish through our work was: Did the trepang industry gradually expand through Indonesia, or did the fishermen just come here straight away?"

"My theory is that they came to Australia straight away as soon as there was a demand for trepang from China. Because of previous expeditions by Macassans or Indonesians – who I'm sure would have been well aware of the coastline of northern Australia – they would have wanted to make the biggest profit that they could out of things. If they wanted to exploit the trepang around Timor, well, that would have been more difficult for them. Timor was a hierarchical society already engaged in commercial economies, and the people there would defend their borders with fortifications. In Australia you could get away with it relatively cheaply when you were negotiating in a customary economy with Indigenous groups for access to land and sea."

The researchers are conducting the first archaeological dig of the trepang processing site at Anuru Bay since 1968. At that time, ANU PhD scholar Campbell Macknight carried out the first dig, turning up evidence that dated the arrival of the Macassan

"It's no coincidence that [Indigenous people from Northern Australia] have had the most fiery relationship with outsiders, and they've been the most vocal about land rights."

– Daryl Guse

fishermen to the 18th century. But Macknight also found evidence that, when analysed back in the lab, provided anomalous dates for the earliest human occupation at the site.

Reworking some of the shell middens and rock shelters around the bay, Guse and his colleagues have now confirmed that Indigenous people have been living in the area for at least 30,000 years – much longer than was previously thought. If that's the case, Guse reasons, and if the theory about Macassan arrival earlier than the 18th century and other contact from Indonesia hundreds of years earlier proves true, then perhaps there will be signs of Macassan technology in places around the bay that were known to be sites of Indigenous settlements.

While the current dig is yet to turn up evidence of earlier contact between Maung people and Asian fishermen, there is certainly plenty of later evidence supporting a history of trade between the two groups, with Indigenous people taking on items made of iron, glass and ceramics. These objects may not have been used in utilitarian ways by Aboriginal people, but perhaps as a means of raising their status within the regional social hierarchy. On the other hand, Guse says, glass is much sharper than stone, and hence was recognised very early as a useful cutting tool.

In the process of swapping material goods with one another, there is also evidence that Indigenous people picked up some cultural ideas and practices from the Macassans. Rock art in the nearby Wellington Ranges

depicts some Indigenous women wearing what appears to be sarongs, an item of clothing alien to Australia at that time but common in Southeast Asia. There are also known cases where Indigenous people sailed back to Indonesia with the trepang fleets, some returning to paint images from their adventure, such as one scene showing a monkey in a tree.

Guse says that this long tradition of encounter and negotiation between Indigenous Australians and outsiders is part of the reason why traditional owner groups from northern Australia remain so politically vocal and able today.

"It's no coincidence that they have had the most fiery relationship with outsiders, and they've been the most vocal about land rights," he says. "They've been extraordinarily strong about negotiating access to their country because they've been doing it for centuries beforehand."

Negotiating with various groups and developing an understanding of the landscape are also important skills for the graduate students who've been taking part in the Anuru Bay project. Their practical experience at the site has inspired a new course in the Master's in Archaeological Science program, called Advanced Field Training in Archaeological Science. The new course is offered via the School of Culture, History and Language in the ANU College of Asia and the Pacific. Professor Sue O'Connor heads up archaeology studies in the College, and is also lead researcher on the ARC Linkage Grant project at Anuru Bay. She says that students learn things working on real-world problems that they would never experience in the lab.

"It's about learning field methods in a context where it has a real rationale, because it's driving the methods that you're applying, rather than working through the 'cook book' of potential methods back in the classroom," O'Connor says. "In the field, you are led to think about things in a way that is much more meaningful."

As well as gaining a deeper understanding of the past, the field work also allows students to engage with traditional owner groups, learning how the Western scientific approach can inform and be informed by Indigenous knowledge.

"When we're at a dig, we probably come into contact with the traditional owners a couple of times a week," O'Connor says. "The students are really interested. My experience is that they're usually quite shy at first ... but it's really good to have that experience and interaction, and I think it's great that the traditional owners are ready to extend that generosity to invite us into their community."

As for the value behind the ongoing research at Anuru Bay, O'Connor says it's important to return to sites that have been explored in the past to test new theories and understandings of power relations between groups.

"The way in which we look at these contact sites has changed very much since Macknight did his work [in the late 1960s]. The question that Daryl is asking is that if we look at Indigenous sites do we see information in the living arrangements that might suggest men cohabiting with women, that Indigenous people and the people from Makassar were having a relationship where they were exchanging more than trepang. Maybe they were sharing food together. Maybe they were living together."

Regardless of whether or not this theory is borne out by archaeological evidence at Anuru Bay, the research is contributing in practical ways to improving the lives of traditional owners. For example, Guse has already taken part in a pilot tourism project through which Maung people would lead visitors on a nautical tour of Macassan processing sites. And O'Connor says that learning more about the nearby rock art and former settlement sites strengthens the case for a boosted Indigenous ranger program in the area, where Aboriginal people would be employed to safeguard heritage sites from unwelcome visitors, human and animal. She says that these kinds of partnerships with traditional owners are becoming increasingly valuable.

"There is a huge amount of knowledge that Indigenous people have around resources that you can extrapolate to the past, but also that you can project to the future to help us protect these really important places," O'Connor says.

More: <http://archaeology.anu.edu.au/archaeologicalscience/arnhem-land> ■



(Left to right) Student Tristen Jones joins Professor Sue O'Connor and Daryl Guse on a helicopter survey of rock art sites in the Wellington Range.



Reap what you SOW

Kellogg company global leader
and ANU graduate John Bryant says the
multinational corporation knows that what works
in the fields also works for responsible management.
BY STEPHEN GREEN



John Bryant is a graduate of the ANU College of Business and Economics.

Australians are increasingly interested in corporate responsibility and how social, ethical and environmental concerns govern corporate decisions.

Our perception of big business has perhaps always been a negative one – a world driven by the single-minded pursuit of profit and characterised by disproportionate executive bonuses. The Global Financial Crisis has demonstrated not only that in many cases this view was well-founded, but that a lack of corporate responsibility will have far-reaching consequences beyond the immediate business environment.

Increasingly, we want to see companies proving their credentials beyond business performance – engaging responsibly with social issues and responding actively to environmental challenges such as climate change.

The recent public lecture by ANU graduate John Bryant on the subject of corporate social responsibility in the global food industry provided a rare opportunity to get the corporate perspective.

Bryant is Executive Vice-President and Chief Operating Officer of the Kellogg Company. He asked, how do issues of corporate social responsibility affect a global company? How seriously are they taken? And are they seen as threats or opportunities to the future financial success of the company?

Bryant graduated from ANU with a Bachelor of Commerce degree in 1987 and went on to complete a Master of Business Administration at the Wharton School of the University of Pennsylvania. He joined Kellogg in 1998, working in Australia and Europe in support of the global strategic planning process. He has served in numerous leadership roles at the company, including Chief Financial Officer, and has led both the Kellogg North America and Kellogg International businesses. Bryant has been Executive Vice-President of the company since 2002 and Chief Operating Officer since 2008. He is, in short, one of the company's global leaders.

As a global leader, Bryant is well placed to understand the global challenges currently facing food companies. "The ability to meet the world's demand for food is going to be increasingly a problem – an issue for a food company," Bryant says.

"The single biggest impact the company can have is to make better food – that is, food that is better for you." – John Bryant

For starters, there is long-term inflation in the price of grain, the key resource for Kellogg's products. This is fuelled in part by a higher demand for protein from a growing global population. Each kilogram of beef protein uses about seven kilograms of grain. In markets such as China and India, a significant increase in protein consumption is pushing up the price of grain worldwide. In addition, in the US a significant government push for cereal-sourced alternative fuels, such as biodiesel, is impacting supply. For such reasons, the price of grains like corn and wheat is linked to the price of oil.

At the other end of the spectrum there is a health crisis, linked to the problem of an ageing population. In a number of countries, for example, Japan, Italy and Spain, the population aged over 65 significantly outnumbers children. Obesity rates are rising, and this in turn is causing an increase in conditions like heart-related illness and diabetes. Not surprisingly, this is leading to a more complicated regulatory environment for food companies: more legislation covering marketing to children; health claims; nutrition labelling; and, coming soon in some countries, the need to state the size of a product's carbon footprint on food packaging.

Bryant highlights four key areas of corporate social responsibility through which food companies can respond to these challenges, community, workplace, market place, and environment.

Corporate philanthropic activity in local and international communities is perhaps little publicised and little perceived. However, it can be a significant area of positive influence, Bryant argues. In Kellogg's case, the legacy of the company's founder (one of the great philanthropists of the 20th Century), has ensured this continues to guide corporate strategy. In particular, targeted nutrition, health and fitness initiatives can support marketplace activity in addressing problems such as obesity and food shortages.

While a responsible policy towards the workplace is important, a lot of practice is common to most companies. Key areas of focus continue to be workforce diversity and inclusion and the need to reflect the local population mix.

"The single biggest impact the company can have is to make better food – that is, food that is better for you," Bryant says. He believes companies will increasingly seek to partner with research organisations in developing products that reflect the latest nutritional science. The move towards producing a healthier product should be supported by a responsible approach to marketing (for example, setting clear parameters for advertising to children) and proactively providing more information for consumers (such as GDAs on packaging) in the absence of regulatory requirements, he says.

In addressing environmental concerns, a similarly self-regulatory approach seems called for. For example, there is no global body that demands reduction in greenhouse gas emissions. Kellogg has therefore set its own targets to reduce emissions as well as waste and water usage by 15 to 20 per cent by 2015, and is making good progress. As with its portfolio development, the company is working with research organisations, such as CSIRO in Australia, to find ways to tackle these issues.

Bryant draws attention to one area in particular: "You should be very concerned that large food companies are talking about this – that is the water crisis we have globally," he says. "If we continue to use water at the current rate, we will have a deficit of 40 per cent between demand and supply by 2030. Globally, water is being drawn out of basins and aquifers, and not being replenished at the same rate. This is a huge risk to our food system ... the majority of water used, is used in agriculture."

Bryant is optimistic, but stresses the urgency of the situation. "I believe we will reduce our water consumption. By using sustainable agriculture and driving that back in our supply chain we will both reduce the impact on the demand side, and on the supply side of the equation. But it's something that we are moving too slowly on ... We hear a lot about carbon footprints, about greenhouse gas emissions, about climate change, about global warming – this is going to hit us before all of those things are going to. And if you add to that climate volatility that can occur from some of those things, that can impact the supply of water – it's a significant risk."

The approach, according to Bryant, is to partner with NGOs and research organisations to find out what can be done from an agricultural perspective to reduce the impact on the 'water footprint', and try to push that back in the supply chain. For cereal manufacturers such as Kellogg, the supply chain historically starts with the purchase of grains. "We have to go back further than how we've historically viewed our supply chain, back to the farm, and try to drive the right behaviour at the farm level to overcome these issues."

Food companies occupy a pivotal position in the supply chain. They have the opportunity both to regulate their direct impact on consumers and influence consumer behaviour to help address key social issues. On the supply side, they can take an active role in sustaining supply, moderating the strain on resources, and the impact on the environment. In the food industry, a strategy that addresses both areas would seem to be a necessity for the commercial sustainability of a company, not just to benefit society and safeguard the planet. It perhaps also represents a paradigm for responsible corporate behaviour across all areas of business. ■



Tom Bennett has received top marks in studies of evolution and advanced genetics at ANU, and has already been published in the Proceedings of the National Academy of Sciences in the US, which is no mean feat for an honours student. The budding scientist talks about the influence of Charles Darwin on his career choice after a brush with that legend's progeny. BY STEPHANIE CAULEY



Tom Bennett retraced part of Darwin's famous voyage of discovery, even making it to the Galapagos Islands. Photos: Belinda Pratten

Charles Darwin is to evolutionary biology what Bill Gates is to the personal computer industry or William Shakespeare is to drama. There is no questioning the impact that Darwin's careful observations and conclusions about the mechanism of evolution have had on the field of biology.

This year marks Darwin's 201st birthday and the 150th anniversary of the publication of *The Origin of Species*.

Tom Bennett, who is currently completing his honours research in evolutionary biology at ANU, undertook his own quest of retracing Darwin's steps to see how nature has changed over the decades since the *Beagle* first set sail. A few years ago, he travelled in Patagonia and other parts of Chile and Argentina, equipped with his own copy of *The Voyage of the Beagle*.

"I was going to different places and comparing what I saw now to what he was writing, sort of the same thing as what this expedition is doing on a dramatically smaller scale."

Bennett also had the pleasure recently to attend a presentation by Darwin's great-great granddaughter. Sarah Darwin, a botanist, is recreating the renowned voyage of the *HMS Beagle*, sailing to the very destinations that Darwin encountered himself during his formative five-year excursion. The one-year journey has already taken the crew across the Atlantic Ocean to Brazil and Patagonia, along Cape Horn and up around

In Darwin's wake

the Andes to the Galapagos Islands, across the Pacific to Australia, before returning them to Europe.

The crew includes writers and TV types, as well as eminent biologists, geologists, oceanographers, historians, philosophers, and anthropologists from across the globe. "They are going to be looking at *The Voyage of the Beagle*, which was effectively Darwin's travel diary, and comparing his notes and findings then to what they see now," Bennett says. The hope is that they'll gain some insight into the current ecological conditions as well as the future prospects for the environment.

The journey has been taking place aboard the Dutch clipper *Stad Amsterdam*, which is "modelled on a 19th century design, not dissimilar to the *Beagle*, but about three times the size," Bennett says. "The original *Beagle* was about 27m long and this is about 76m. It's very impressive."

As a biologist, Bennett says he draws inspiration from the project. "It's pretty different from what most scientists do these days, but it's a fantastic idea." Darwin said the voyage of the *Beagle* was by far the most important event of his life, and the voyage was where he had 'the first real training or education of [his] mind'. "Doing this sort of thing is a great way to get

people to look at things differently from if you're sitting in the lab," says Bennett.

Bennett has become quite familiar with the research laboratory while conducting his honours research. "At the moment I'm studying the evolution of salt tolerance in plants. Salinity is a huge problem for agriculture in Australia and overseas. There are huge areas of land that are too salty to grow food but, despite decades of research and attempts to breed salt-tolerant crops, there are still few plants that grow better in salty regions."

The young scientist and his collaborators plan to study salt tolerance from an evolutionary perspective. "Rather than looking at one species, I'm studying the evolution of salt tolerance across the whole grass family, to see how often it develops and whether there's anything that will predispose a plant to it. The hope is that it will let us identify lineages that seem to evolve salt tolerance more easily, or the more flexible traits involved with salt tolerance, so that these can be targeted by breeders."

Bennett says he looks forward to comparing his experience in South America with the outcomes and observations of scientists traveling on the *Stad Amsterdam*.

alter ego

Ian Grigg has been contributing to the governance of ANU for 20 years, as a member of the University Council and its Finance Committee until 2004, and most recently as Chair of the ANU Endowment for Excellence until 2008. At the December conferring ceremonies his service was celebrated with an honorary doctorate, *honoris causa*.

The ANU graduate is passionate about people giving back to their alma mater, but his 'alter ego' enthusiasm has been the automotive manufacturing industry for more than three decades. Grigg has been Chief Executive of the Federal Chamber of Automotive Industries, the Prime Minister's Special Automotive Envoy and is currently a senior adviser to the Toyota board in Australia.

Do you remember your first car?

It was a soft-hooded Morris in 1957. But I'm not a car buff. I'm a point A to point B man. I'm fascinated by issues like export, corporate planning, policy development and government policy. As for cars, I want something to get me from A to B without a problem. My present family car is a Lexus RX350, plus my working car is a Hilux turbo diesel ute. It's a great vehicle, dual cab and a tray in the back. It's particularly good for getting out to my property in the Brindabella Valley [65km into the highland bush from Canberra].

Where did you career in the automotive industry take you?

In the role of PM's Auto Envoy, I was fortunate enough to lead a number of trade missions to many overseas car companies. I've been fortunate enough to visit almost every car plant in the world. They're fascinating places, yet all quite similar, particular now they're robotic. I've been to plants in Detroit, Sweden, England, Germany, Korea, Japan, China, Indonesia and Thailand and others. It's very competitive at the manufacturing end of the industry. They're very good people. They cut to the point quickly.

Do you get to drive the new cars under development?

All of these big companies have test tracks. Often you're taken out in new models or state-of-the-art concept cars. I've been in South Korea on a test track in a car being driven by the Vice-President of a company. We were travelling at 180km per hour when

he took his hands off the wheel going around the track. That was a hair-raising experience.

What inspires you about the automotive industry as a whole?

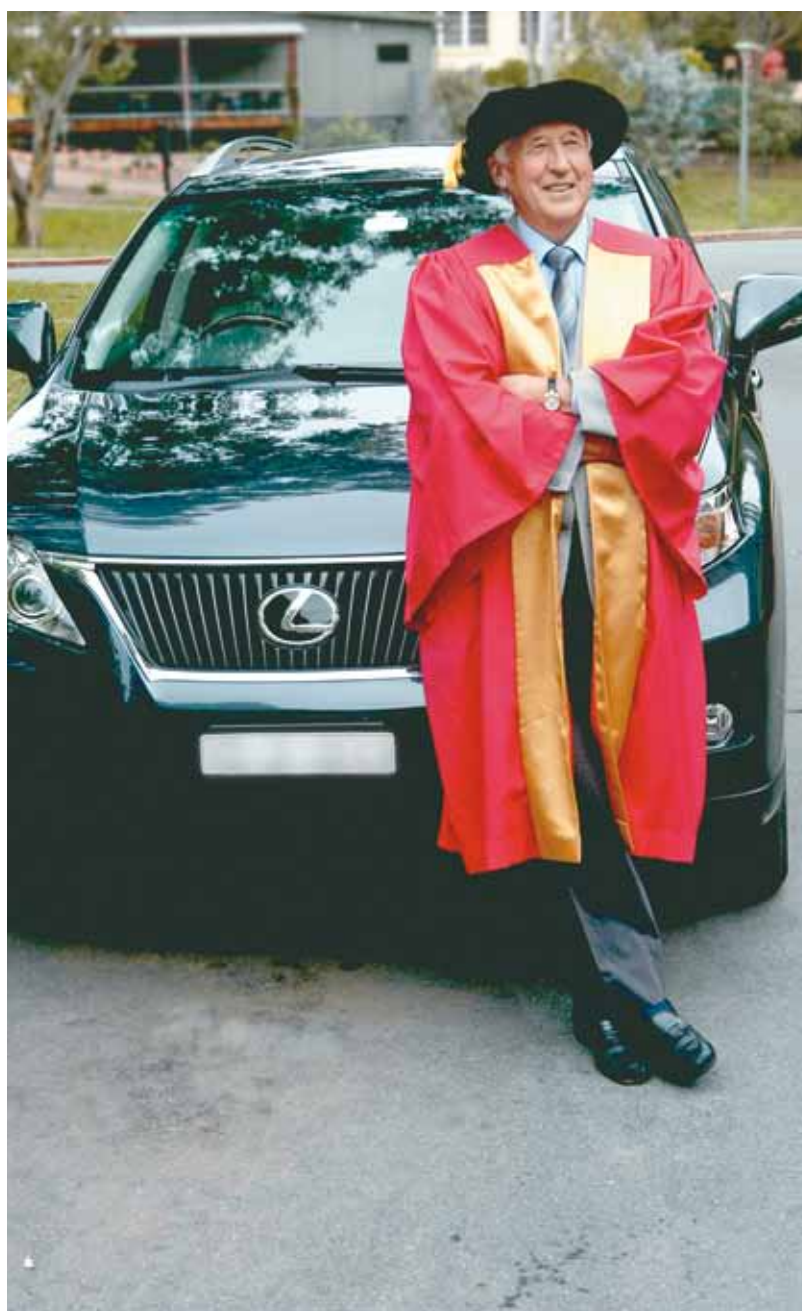
The worldwide enormity of it. The way it reaches upstream and downstream into many other industries. It's the basis for each country's manufacturing sector, because you employ many engineers from diverse fields, involving so many raw materials.

What's the next big thing in personal transport?

The combustion engine has evolved and now it has run over the top. The next thing will be hybrid and fuel cell development, whether it's a hydrogen fuel cell, or purely electric. The trouble is they haven't broken the nexus between the size and weight of the battery and the weight of the car. The race is on to resolve this problem. They're all trying to do it, but they can't. The company that does it wins the world.

What's the secret to a successful career and good life?

I think it's just as important to give as well as take, whether it's giving back to your university or your community. It's through a scholarship that I got to university. And when I was speaking at the graduation ceremony in December, it was incredibly heartening to know that some of the students receiving their degrees that day had been given a boost by a scholarship from the ANU Endowment for Excellence, or from other scholarship donors. ■



Ian Grigg has been a senior public servant in the Department of Prime Minister and Cabinet, a leader in the automotive industry and a long-standing contributor to university governance – but he says one of his proudest moments was receiving an honorary doctorate from ANU in recognition of his service. Photo: Simon Couper

catch up

Been a while since you've visited campus? That doesn't mean you should miss out on the many conversations taking place at ANU.

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Or view our new videos at: <http://www.youtube.com/user/ANUchannel>

Here is a taste of three talks that have taken place at ANU recently.



Footballers behaving badly

Dr Kim Toffoletti
Senior Lecturer in Sociology and Gender Studies,
Deakin University
View: <http://www.youtube.com/watch?v=2ImwPcttUsA>

Dr Kim Toffoletti is undertaking the first comprehensive study of female AFL fans, looking at how they maintain or challenge the behaviour of players. This has generated considerable media exposure on Australian television and in major news outlets. In addition to her interest in gender and sport, Dr Toffoletti's publications include *Cyborgs and Barbie Dolls: Feminism, Pop Culture and the Posthuman Body*.

This lecture is part of the TOYOTA-ANU Public Lecture Series.



Are GP Super Clinics the answer?

Panel of experts: Professor Mark Harris, Mr Russell McGowan, Dr Rashmi Sharma, and Dr Steve Hambleton
Listen: http://www.anu.edu.au/discoveranu/content/podcasts/health_reform/

The Federal Government is establishing GP Super Clinics around Australia to improve access for patients. Will this fix access issues in primary care? This expert panel discussion is part of a series of talks on national health reform, supported by the Australian Primary Health Care Research Institute and the Menzies Centre for Health Policy.



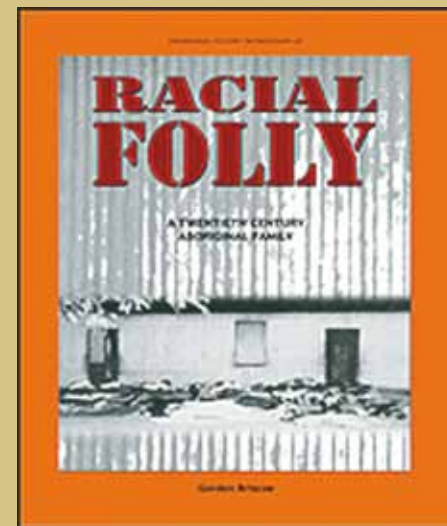
Climate Change 2010: Where do we go from here?

Professor Will Steffen
Executive Director, ANU Climate Change Institute
Listen: http://www.anu.edu.au/discoveranu/content/podcasts/climate_change_2010/

This talk focuses on the post-Copenhagen climate – both physical and political – examining what the credible science is really saying about the state of the climate system, and what might be in store for us in the coming decades, including the prospects for rural and regional Australia. Looking beyond the stories in the popular media about what was not achieved at COP15, the progress that actually was made in Copenhagen is explored.

bookshelf

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Racial Folly
A Twentieth-Century Aboriginal Family
Gordon Briscoe

Briscoe's grandmother remembered stories about the first white men coming to the Northern Territory. This memoir shows us the history of an Aboriginal family who lived under the race laws, practices and policies of Australia in the 20th century. It tells the story of a people trapped in ideological folly spawned to solve 'the half-caste problem'. It gives life to those generations of Aboriginal people assumed to have no history and whose past labels them only as shadowy figures.

Briscoe's narrative combines his institutional and family life with a high-level career at the heart of the Aboriginal political movement at its most dynamic time. It also documents the road he travelled as a 17-year-old fireman on the South Australia Railways to become the first Aboriginal person to achieve a PhD in history.



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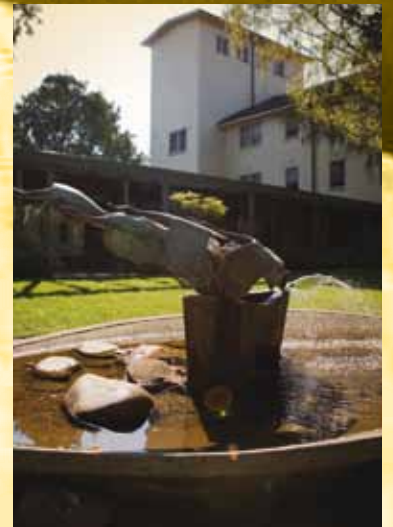
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