ANTARCTIC ODYSSEY
IN THE FOOTSTEPS OF SIR DOUGLAS MAWSON
Environmental engineer, climate change activist and feminist, Mehreen Faruqi is the first Muslim woman to enter an Australian parliament. She hopes her appointment by the NSW Greens will lead to more diversity in our legislature.

“I want to change the stereotypical views people have about Muslim women,” she says. “I’ve never been defined by my religion in any of my leadership roles – I’m not a religious spokesperson. The politics I’ll be advocating relate to social justice, human rights and gender equality.”

Faruqi grew up in Pakistan. In the final year of her civil engineering degree, two of her classmates went to war and never returned. Shortly afterwards she immigrated to Australia with her husband, infant son and two suitcases.

“It was the early 1990s, the Soviet–Afghan war had ended, a dictator had come to power in Pakistan and corruption was entrenched. We wanted a better life – it’s a typical migrant story,” she says pragmatically.

With a Masters and PhD from UNSW, she is now Academic Director, Master of Business and Technology Program, AGSM. Faruqi is the second of three generations to study at UNSW: her father came to Sydney as part of the Colombo Plan in 1957 to study civil engineering and her son is completing an environmental engineering degree.

What policies do you hope to influence in the Greens? Decriminalising abortion in NSW, stopping hunting in national parks, the creation of a world-class integrated transport system and addressing climate change.

How do you reconcile Green politics with your faith? We live in a democracy and a secular system of governance that should allow societies of different faiths and beliefs to come together without fear of discrimination.

Most vivid memory growing up in Pakistan: Playing cricket in the long summer evenings with the other kids on the street and enjoying the mangoes.

Most treasured possession: The fabulous photos my dad, who has passed away, took during his first trip to Australia. I can still hear him saying, “Sydney is the most beautiful place on the planet”.

Book that changed me: Silas Marner by George Eliot. Even though it was set in England and I read it as a student in Pakistan, the questions it raised about class systems resonated with me and increased my awareness of social justice.

Role model: Dr Ronnie Harding who started UNSW’s Institute of Environmental Studies. She was my lecturer and is the epitome of “practise what you preach”.

By Fran Strachan. Photo: Britta Campton
It’s not often that politicians, business leaders, researchers and students alike are united in their praise for – and excitement about – a public figure. But Microsoft co-founder and philanthropist Bill Gates is no ordinary billionaire.

Close to 3,500 students and alumni competed for free tickets to hear the world’s richest man speak at a UNSW event, aired as a special ABC TV Q&A program, facilitated by Tony Jones.

Gates, 57, was in Australia for around 14 hours, during which time he lobbied the Prime Minister to increase Australia’s aid budget to 0.5%, won an extra $80 million toward polio eradication and addressed the Canberra Press Club.

During his Sydney talk on global health and development, hosted by UNSW Chancellor Mr David Gonski and Vice-Chancellor Professor Fred Hilmer, Mr Gates said he was confident polio could be eradicated within five years.

With fewer than 300 cases identified in the world, the co-chair of the Bill & Melinda Gates Foundation said the disease could be stamped out with an investment of $US5.5 billion.

Answering a question from a polio survivor, Gates told a story about comforting a paralysed two-year-old Indian girl.

“She didn’t really understand what it meant for her life,” he said. “The likelihood of her having the full life that she deserved was not very good. Hopefully we can … raise the visibility of the fact that there are still people who need help. But first and foremost, we want to make sure that no one else has to go through that.”

The Gates Foundation is supporting UNSW’s Kirby Institute with $US12.5 million to lead an international research project with the potential to extend antiretroviral therapy to millions of HIV-affected people. It also supports the Pacific Friends of the Global Fund to Fight AIDS, Tuberculosis and Malaria, which operates under the auspices of the UNSW Foundation.

UNSW Commerce Law student Allina Yang asked Gates about his personal motivations and philosophies. Given an email interview with the philanthropist prior to the event, Yang published an opinion piece in the *Sydney Morning Herald*.

Gates spoke in the interview about “investing” in global development in much the same way as other people talk about investing in business. When every life has equal value, the success of entrepreneurs and corporations should not be measured solely by financial means, Gates told her.

Audience members quizzed Gates on other topics including taxation, technology and being an introvert in business. Gates said he was “one of those rare people who is actually for taxes”, having paid a total of $US6 billion.

When asked if his sense of perspective had been changed by his wealth, Gates admitted: “Absolutely. I haven’t mowed the lawn for a long time. I forget what it’s like. I do wash the dishes every night so there are certain rituals that are worth maintaining.”

And he used the same gentle humour to explain his philanthropy. “When you’re lucky enough to have substantial wealth, what are the possibilities? You can build a pyramid. You can have 400 people fan you. There’s a limit to consumption and so then you have to say, what do you feel?

“If you feel like you’re a citizen of the world and you want to help all of humanity, then you think, ‘Where is the greatest injustice?’”

The event was organised by the UNSW Alumni and Community Engagement team.

— Susi Hamilton
TOWARDS A QUANTUM INTERNET
A UNSW-led team of researchers has achieved a breakthrough that brings the prospect of a network of ultra-powerful quantum computers — connected via a quantum internet — closer to reality. The team is the first in the world to have detected the spin, or quantum state, of a single atom using a combined optical and electrical approach. The technical feat was achieved with a single atom of erbium — a rare earth element commonly used in communications — embedded in silicon. The study was published in the journal Nature.

‘FATHER OF PHOTOVOLTAICS’ HONOURED
World leader and pioneer in solar photovoltaics, Scientia Professor Martin Green, has been elected into the prestigious Fellowship of the Royal Society, the UK’s national academy of science. The self-governing Fellowship consists of some 1,450 of the world’s most distinguished scientists and engineers, including 80 Nobel Laureates. Green, the Director of the Centre for Advanced Photovoltaics, is renowned for developing and commercialising silicon solar cell technologies, and has been referred to as the ‘father of photovoltaics’ — the science of converting sunlight into electrical energy.

$2M CENTRE BOLSTERS FOOD INDUSTRY
UNSW will establish a research and training centre aimed at bolstering the Australian food industry after receiving more than $2 million in funding from the Australian Research Council (ARC). The ARC Training Centre for Advanced Technologies in Food Manufacture will investigate innovative ways to improve the quality, safety and nutrition of Australian products, while training the next generation of food scientists and engineers.

RECOGNITION FOR MAN OF STEEL
Scientia Professor Mark Bradford has been elected a distinguished member of the American Society of Civil Engineers. Bradford, who is the Director of the Centre for Infrastructure Engineering and Safety, is only the second Australian to receive the prestigious honour from the 161-year-old society. Bradford’s research has focused on steel and concrete structures, and improving the safety of buildings in which we live and work, and the infrastructure on which we rely.

THE HOT SEAT
NEW FINANCE CHAIR
Scientia Professor Ross Buckley has been appointed to a new Chair in International Finance and Regulation to drive research into systemic responses to global financial insecurity.

Leading international law firm King & Wood Mallesons (KWM) has sponsored the Chair in partnership with the Centre for International Finance and Regulation (CIFR), hosted by UNSW.

The high-impact research of the Chair will have practical policy application through CIFR’s extensive engagement with finance sector participants, industry associations, government, and regulatory agencies in Australia and the Asia-Pacific.

The relationship makes KWM the sole legal partner of CIFR, joining its other industry partners Macquarie Group, Commonwealth Bank and KPMG.

“This exciting initiative engages the leading Chinese–Australian law firm in shaping thinking in the region,” says Buckley, a world-class thought leader on financial governance. “The merger of King & Wood and Mallesons was itself a huge commitment to the future of relations between China and Australia. This Chair takes that process a step further with KWM investing heavily in the generation of ideas of importance to our region."

Several projects linked to the Chair are already under way, with one exploring the rise of China and its impact on international economic governance. “China is paying a price in lost international economic leadership for its territorial claims in the East and South China Seas,” Buckley says.

Another project explores a range of regulatory measures by which Australia, and the region, could seek to enhance financial stability. These include bank levies, living wills for banks, and other responses to the problem of contemporary banks being ‘too-big-to-fail’.

QS RANKINGS
IN WORLD’S TOP 10
UNSW has shot up the QS World University Rankings to now have five subjects in the world’s top 20 with Psychology breaking into the top 10. UNSW is the highest ranked university in Australia for Materials Science (25th). Psychology moved up 18 places to number 10; Accounting and Finance is ranked at 12 — a jump of 11 spots; and Law moved from 30 to also be ranked at 12 in the world.

Civil and Structural Engineering at UNSW continued its strong performance, up from 17 to 15 — the second highest ranking in the country. Education jumped 11 places to 19. Of the 30 subjects covered in the 2013 rankings, UNSW has 19 in the world’s top 50.

Fast Fact

1,742 the number of Indigenous students completing higher education in Australia in 2012, up from 1,437 in 2011.
328 the number of Indigenous students enrolled at UNSW last year, up 26%.

Congratulations to Christy Newman from the National Centre in HIV Social Research, winner of the ‘Uniken Goes Mobile’ competition. Christy’s prize is an iPad Mini.
BRIEFS

ANSWERING OBAMA’S CALL
Two UNSW researchers were among 11 world experts to address the US Congress as part of President Barack Obama’s initiative to map the human brain. Neurosurgeon Charlie Teo, and stem cell researcher Associate Professor Kuldip Sidhu were chosen to address Congress as part of Brain Mapping Day. Teo called for brain cancer research to be made part of the $US100 million initiative. Sidhu spoke about the importance of patient-derived human stem cells as a platform to better understand neurodegenerative diseases like Alzheimer’s and Parkinson’s.

RIGHTELY PROUD
International human rights lawyer Professor Megan Davis has been elected in a landslide win to a second term on the United Nations Permanent Forum on Indigenous Issues. Davis, who is Director of UNSW’s Indigenous Law Centre, was re-elected at the meeting of the UN Economic and Social Council in New York. Davis said she was “thrilled to have been elected to a second and final term”, as there was still much to be done in combating violence against Indigenous women globally.

EYE CARE MEDAL
The World Council of Optometry has acknowledged vision correction researcher and eye care innovator Professor Brien Holden with a Distinguished Service Medal – the Council’s highest honour. A pioneer in contact lens development and eye health, Holden is only the sixth person to receive the award. He has been responsible for the creation of a social enterprise that generated over $1 billion in research, education and humanitarian funds that provide quality eye care services for those without access.

A DIPLOMATIC FIRST
UNSW alumnus Damien Miller has become Australia’s first Indigenous head of an overseas mission after taking up his posting as Ambassador to Denmark. Miller graduated from UNSW with an Arts/Law degree in 1998. He was recently Deputy Ambassador to Germany and has previously served in the Australian High Commission in Malaysia. Miller told SBS radio that being the first Indigenous head of a mission was a “privilege and honour”.

• EARLY WARNING

RED LIST FOR THREATENED ECOSYSTEMS
UNSW has led the development of a new Red List system for identifying ecosystems at high risk of degradation, similar to the influential Red List for the world’s threatened species.

The team carrying out the research was convened by the International Union for Conservation of Nature and headed by UNSW Professor David Keith, from the Australian Wetlands, Rivers and Landscapes Centre. The study illustrates how the framework for risk assessment applies to 20 ecosystems around the world, including eight in Australia, facing unprecedented threats. “This is one of the world’s most significant conservation challenges. Now, for the first time, we have a consistent method for identifying the most threatened ecosystems,” Keith says.

“Changes in the distribution of an ecosystem, its physical environment and its component species can each tell us something different about the severity of risks, and these symptoms can now be assessed in standard ways across different types of ecosystems.”

• OBESITY CLUES

MUTANT MICE STAY SKINNY ON FATTY DIET
The mystery of why some people get fat eating high-fat foods while others can stay skinny on a diet of burgers and chips is closer to being solved.

A research team led by UNSW Dean of Science, Professor Merlin Crossley, and Dr Kim Bell-Anderson, of the University of Sydney, investigated a genetically modified strain of mice. They unexpectedly found that the mice remained thin on a high-fat diet.

The researchers already knew that a protein called KLF3 turns off genes involved in blood production. After engineering mice that didn’t have any KLF3 the researchers found the animals remained lean on a high-fat diet.

They also showed signs of improved glucose metabolism and insulin action. The team looked at the expression of about 20,000 genes to ascertain which gene KLF3 targeted.

They found that the expression of a gene, recently found to encode a hormone called adipolin, was increased in the mutant mice. The researchers say the role in humans is yet to be determined.
Professor Iain Martin, UNSW’s recently appointed Deputy Vice-Chancellor (Academic), concedes he never did quite manage to leave university.

After qualifying as a medical doctor in the United Kingdom in 1987, Martin spent just one year in pure clinical practice before gravitating back to his alma mater, the University of Leeds. Between 1988 and 2000 he had a series of dual clinical and research roles at Leeds but when he added a Master of Education to his qualifications his career direction was set.

What kept him at university, he says, was a love of “being constantly challenged and stimulated – your career just becomes more and more diverse”.

In his case, that meant a move across the world to the University of Auckland in 2000, becoming Dean of Medicine in 2005. After more than six years as Dean he moved into the University’s Executive, as Deputy Vice-Chancellor (Strategic Engagement). Through these roles, and Universitas 21, the international network of leading research institutions, he became more familiar with UNSW, and liked what he saw.

“UNSW is a young university, which I saw as an advantage. It is dynamic and not bound by longstanding tradition,” he says. “And it’s also a genuine meritocracy – it is not where you come from but who you are and what you have done that matters, which I find very appealing.”

This forward-looking attitude and institutional flexibility, he says, is helping him take on the challenges of his new role. And there’s no shortage of issues to tackle as Australia faces funding cuts to the university sector, strives to meet targets to significantly boost enrolments in undergraduate degrees, and comes to terms with the rapid advancement of new technologies transforming the way we teach and learn.

But at the top of the list is the very future of conventional on-campus degrees. With an ever-growing list of prestigious international universities making their courses available online, often for free, what role will leading Australian universities, like UNSW, play into the future?

Martin believes the secret to success in a world of these massively open online courses (MOOCs) is for individual universities to be very clear about their own mission. In UNSW’s case, he believes that means marrying the best new digital-learning technologies and techniques with the best of face-to-face teaching and learning, while remaining focused on the University’s defined strengths in science, technology and the professions.

“If there is one thing that keeps me awake at night it is making sure we put the very best possible strategy in place to ensure we are able to meet these educational challenges,” he says.

Having arrived in Sydney after more than a decade in New Zealand, Martin isn’t keen to be drawn into the cross-Tasman rivalry – Rugby was off-limits for this interview. But, he describes Sydney as “Auckland on steroids”; similar but bigger in all regards.

“Both are also Asia–Pacific cities, but what I like about Sydney is that it unashamedly sees its future in this respect.”

And, when he’s not planning the future of UNSW in the 21st century, he’s passionate about sailing. In which case, unlike the subject of Rugby, there’s no avoiding the Australian insistence that, although the Kiwis can sail, Sydney Harbour is the best there is, bar none.
Lessons from the Bronx

An early career teaching disadvantaged children has shown Leila Morsy there are no easy answers to poverty. By Sarah Macdonald.

Leila Morsy had no intention of becoming a teacher, but soon after graduating she found herself at the front of a classroom in one of New York’s most gang-riven neighbourhoods.

“They were extraordinary kids, very sharp and resilient; they’d seen more of life than most of us will before we die,” she says of her students in the South Bronx primary school.

The situation couldn’t have been further from Morsy’s own upbringing.

The education academic grew up in Paris, nurtured by a home and school system steeped in literature and philosophy. After moving to the US, it seemed natural to pursue a degree in creative writing and post-modern American poetry. But on graduating, Morsy felt at a loss.

Then she heard about Teach for America – a program that placed promising graduates from elite universities into underprivileged schools.

Equipped with only six weeks’ training she was parachuted into one of the lowest-income neighbourhoods in Houston, Texas.

It wasn’t easy but the young novice soon fell in love with her students. She felt the same about the kids at her next school in the South Bronx, begging to stay with them through to year seven.

One of the lowest-income areas in the US, the South Bronx is rife with gangs, health issues and high unemployment. But Morsy’s students made up for their low literacy levels with street smarts and educated their young teacher about the effects of poverty.

“You can’t tell people to pull themselves up by their bootstraps if they don’t have boots and straps.”

It’s a perspective that now informs Morsy’s response to the federal government’s education review chaired by UNSW Chancellor David Gonski. She’s supportive of the government’s educational agenda but warns that the report, on its own, is not a solution to poverty.

“If it’s about giving schools more resources to do what they do better, then that’s terrific. But it has to be part of a broader perspective on how we give resources to the poor and should include things like housing and health.”

While setting up a partially publicly funded school in East Harlem in her 20s, Morsy gained first hand experience of education reforms that would find their way to Australia – standardised testing and school accountability. She found they were not enough. “We should have been offering broad education about how to be good citizens and lead rich intellectual lives, but all we were trying to do was raise scores,” she says.

It was the effects of high-stakes testing and her qualms about children starting school with their futures preordained that drove her back to university.

With two Masters and a Doctorate already under her belt Morsy is now researching how philanthropy affects education; in particular the role corporations will have in influencing policy.

While conducting her research, Morsy is lecturing in the School of Education, where she’s come to understand the benefits of theoretical thinking, professional experience and the role of planning in developing the teachers of tomorrow.

“It’s a vast contrast to the six weeks’ training she had before heading to the Bronx.
“It’s going to be a cracking adventure and a scientific first in terms of the data we get,” predicts Professor Chris Turney. One hundred years after Sir Douglas Mawson led his famous Australasian Antarctic Expedition, Turney will celebrate that achievement with a modern-day voyage in the footsteps of the great Australian scientist and explorer.

Although 2013–2014 marks the centenary of Mawson’s expedition, Turney says much of what we remember from this time is the triumph of the Norwegian Roald Amundsen over the British-led efforts of Robert Scott to reach the South Geographic Pole.

“During this incredible time at the very height of the heroic age of Antarctic exploration, Mawson and his team enthralled the public as the limits of our planet were pushed all the way south and the door to Antarctica was flung wide open,” the earth scientist and professor of climate change says.

Turney and co-leader Dr Chris Fogwill will set out in November from Hobart with 46 researchers and members of the public to undertake a six-week voyage of discovery, retracing Mawson’s route to the remote coast of the frozen continent.

“Antarctica remains one of the last, great, unexplored regions on Earth. And it is a unique place to monitor the health of our planet,” says Turney, an Australian Research Council Laureate Fellow in the UNSW Climate Change Research Centre and expert on how climate and migration have changed in the past 2.5 million years.

The new Australasian Antarctic Expedition, dubbed the Spirit of Mawson, will repeat as many of the original team’s measurements as possible, making observations of the oceans, wildlife, weather,
geology and ice cover to compare with Mawson’s findings.

“We want to discover just how much has changed,” says Turney. The Southern Ocean plays a crucial role in the carbon cycle and climate of the globe. From the moment the journey begins, sea-surface measurements, including salinity, temperature and carbon content, will be taken, providing a direct comparison to Mawson’s efforts.

During stopovers at several of the sub-Antarctic islands, sediment cores will be collected from lakes and peat bogs, to discover the changes that have occurred over past millennia, while the local wildlife will also be studied.

Once the team has disembarked in Antarctica, they will drill ice cores and take geological samples to study the ever-changing shape of the ice sheet. A drone will survey from the air while some intrepid scientists hope to venture under the ice to explore the life there.

INSPIRING THE PUBLIC

Mawson was notable as the first Antarctic explorer to use wireless radio to communicate with people back home, and he captivated the public with his extraordinary experiences recounted in books, articles, lectures and films.

“We want to re-awaken the public’s passion for scientific discovery and exploration,” says Turney who has his own YouTube channel, Intrepid Science. Mawson would marvel at today’s technology: the team will take live questions from people during Google+ hangouts and provide updates via Twitter, blogs and YouTube, to engage the public directly in their research and inspire the next generation of scientists.

Google has launched a “Doodle 4 Google” competition for schoolchildren to redesign their logo on the theme, “If I was an explorer, I would …” A teacher from the overall Australian winner’s school will accompany the expedition – a prize sponsored by the Commonwealth Bank of Australia. A similar competition will be held in New Zealand.

Berths are being sold for members of the public to join the expedition that will include many scientists from UNSW. For instance, Fogwill is a geologist who studies glaciers and ice sheets while Associate Professor Emma Johnston, a marine scientist, will also be on board.

“Not a lot of science has been carried out in the region where we’re going because it is so remote,” says Fogwill.

SCIENTIST FIRST, EXPLORER SECOND

Antarctica is larger than Europe and the highest continent in the world – with an average altitude of 2,300 metres. It contains more than 70% of the world’s water locked up as ice and snow, and its moisture-free air makes its interior the world’s largest desert, says Turney.

And in a land of extremes, Mawson chose one of the most inhospitable sites to make camp – at Cape Denison in
Commonwealth Bay. “It was the windiest place on the planet,” Turney says. Hurricane-force winds gusting up to 280 kilometres per hour were recorded at the base camp, which made scientific observations extremely difficult to carry out and played havoc with attempts to communicate via radio.

While other explorers tacked some science onto their expeditions, Turney admires Mawson as someone who was a scientist first and an explorer second. He set up three bases – on Macquarie Island, at Commonwealth Bay, and further west on an ice shelf in Queen Mary Land – and a co-ordinated series of measurements were made at all sites.

“Mawson’s venture gave the world its first complete scientific snapshot of a new continent. He and his team mapped thousands of kilometres of coastline with extraordinary accuracy and produced volumes of scientific reports,” says Turney.

But the effort came at a high price. In late 1912 Mawson set out from base camp with two colleagues to map the area. The young British army officer, Belgrave Ninnis, fell down a crevasse, taking most of the dogs and supplies with him. Mawson and Xavier Mertz, a vegetarian Swiss champion skier, were forced to eat the remaining dogs on their return trip to the base, 480 kilometres away.

Both men suffered lethargy and dizziness, says Turney, who describes their travels in his book, *1912: The Year the World Discovered Antarctica*: “Mertz deteriorated more quickly, with bouts of dysentery, loss of skin, depression and finally, insanity. The cause of this rapid decline appears to have been vitamin A poisoning, most probably brought on from eating dog livers.”

Through sheer determination, with the soles of his feet falling off, Mawson made it back to base, only to be confronted with what would have been a devastating sight. The ship that had come to collect him was disappearing over the horizon, and he had to spend another winter in Antarctica.

“How can we visit Antarctica in relative comfort and safety,” says Turney.

“Antarctica remains one of the last, great, unexplored regions on Earth. And it is a unique place to monitor the health of our planet.”

**INTREPID SCIENCE**

Tall and lanky with a booming voice and infectious enthusiasm, the British-born Turney fits the image of an intrepid explorer, as well as being a highly awarded scientist for his research on the evolution of the Earth’s climate. He was the inaugural recipient of the Sir Nicholas Shackleton Medal for outstanding young Quaternary scientist in 2007, and won the Geological Society of London’s Bigsby Medal in 2009.

While many other writers have recounted the heroics of Antarctic explorers, Turney’s additional scientific insights in his book, *1912*, won special praise from reviewers. His research on the timing and impact of climate extremes in the past has contributed to debates about the extinction of Australia’s megafauna and informs predictions about future global climate change.

He has also dated various archaeological sites, including the cave on the Indonesian island of Flores, where the fossilised remains of *Homo floresiensis* – a tiny extinct species of humans, dubbed the hobbits – were found in 2003.

If luck is on Turney’s side in his newest adventure, the 2013–2014 Australasian Antarctic Expedition will set down at Cape Denison in Commonwealth Bay, the site of the main base where the wooden huts were built that sheltered Mawson and his men during two long winters.

The odds are against them, however, after an iceberg knocked the edge off a glacier, clogging the bay with sea ice that has prevented any boats landing there for the past two years.

“We have a number of options for getting through to Cape Denison but if unsuccessful, we will make landfall at other sites along the coast which are stunning places,” says Fogwill.

It is a stark example of how the Earth has altered since Mawson’s time, and a reminder of the other changes the expedition will undoubtedly find in this white wilderness.

For more information about the expedition, visit spiritofmawson.com
A smartphone app that doubles as a navigation aid is giving people with a visual impairment the confidence to explore, writes Joshua Gliddon.

Smartphones, equipped with the latest in mapping software and GPS technology, have made “finding your way” as simple as swiping your finger.

But there are limits. As anyone who has attempted to use GPS indoors knows, signals are often obstructed and ineffective. Extending navigation to all environments is the next big challenge.

Google is leading industry heavyweights in trying to find solutions to this problem. It’s already rolled out indoor navigation “maps” for major airports, museums and shopping centres in the US, and in March launched its Australia product.

At UNSW, researchers from the School of Civil and Environmental Engineering are taking the concept even further – opening up the technology to the almost one million Australians living with some form of vision impairment.

Their approach relies on the fusion of sensor data from the phone, including wi-fi signals, and existing indoor maps like those available on the Android platform. The team presented the research at an international conference on Indoor Mapping and Navigation hosted by UNSW last year.

The system comes with a caveat, however. “It’s not designed to be used by itself, so it’s classed as a secondary aid,” says team member Dr Binghao Li. That’s because the phone-based system can’t guarantee the user will avoid all obstacles as seamlessly as they might using a long cane or guide dog.

But what the system can do is provide users with an added tool to navigate tricky, and often scary, environments more confidently, Li says.

Another researcher on the project, industry partner Euan Ramsey-Stewart, knows the obstacles the blind and vision-impaired face. He has a degenerative eye condition called keratoconus, a deformation of the cornea. Vision from his right eye is now very limited, and the left eye, which does the majority of the work, is not much better.

Ramsey-Stewart hit on the idea of using smartphones when he was studying at UNSW, where he sought help from the geospatial engineers. His company, Ramsey Stewart Industrial Design (RSID), has freely licensed the resulting intellectual property via the University’s Easy Access IP scheme.

The scheme takes ideas ordinarily locked away under licences and patents and essentially “gifts them to the community”, allowing companies to develop the ideas for free.

Li and Ramsey-Stewart, along with colleagues Thomas Gallagher and Andie Yam, are trialling the technology with the vision-impaired community.

One participant, Megan Taylor, who has a condition that has left her with no vision in her left eye and only 3% vision in her right, likens the app to “getting your driver’s licence”.

“This is going to give people with blindness and vision impairment a new level of independence. It is literally like having your best friend beside you, who knows where you’re going and how to get there,” she says.

Together they have identified important accessibility issues. The first is that the phone needs to provide navigation data either hands-free, or leaving at least one hand unencumbered to interact with the environment or hold a cane or guide dog harness.

It’s also been decided to only create indoor maps for high-traffic areas with known paths, rather than trying to map every room in a building. “A balance needed to be found between final accuracy … and the effort needed to create the database,” says Li.

Ramsey-Stewart says electronic navigation aids are about more than just ease of access for the vision impaired. “In the end, it’s a discrimination issue,” he says. “It’s about having the same rights as everyone else.”
IN 2010, TWO YEARS before he was appointed leader of the world’s most populous nation, China’s Xi Jinping sat in a plane on the tarmac at Darwin airport.

Nearing the end of a five-day visit, Xi was told his host, Kevin Rudd, the prime minister, had just been deposed. A furious Xi wanted to know why the Chinese embassy had failed to inform him about the imminent change. He was told by an Australian diplomat that nobody here had seen it coming either.

The backroom elevation of Julia Gillard was a far cry from the stage-managed pomp and ceremony that accompanied Xi’s ascension to the presidency during a once-in-a-decade leadership transition in Beijing last November.

But while the differences between the Australian and Chinese political cultures couldn’t be starker, they have shown little sign of restricting the ever-tightening bonds between the two countries.

In April, Prime Minister Gillard made history by sealing a deal to hold an annual dialogue with China’s leaders and senior ministers. New military exercises and exchanges were announced and, in the wake of a decade of soaring trade ties, Australia became only the third country invited to directly convert its currency to the yuan.

Signing the pact after meeting with China’s Premier, Li Keqiang, at the Great Hall of the People in Beijing, Gillard declared: “When the history of this relationship is written, this will be remembered as a day that a big step forward was taken.”

China watchers, such as Associate Professor You Ji from UNSW’s School of Social Sciences, agree. China’s relationship with Australia is now “the best of all of its relations with Western countries”, he says.

“It is two countries with different political systems but they are able to accommodate differences while seeking commonality.”

But the experts also urge caution. While two-way economic ties are flourishing, differences remain. China’s regional ambitions, as well as Australia’s strategic ties to the United States, Japan and India, mean the prospect of future turbulence is very real. Can Australia continue on the current course, or will we soon be forced to choose between China and our traditional allies?

It was only in 1971 that Australia established diplomatic ties with China, but to Australians living in the Asian Century, the China story has become a fact of life.

Six years ago, China overtook Japan to become Australia’s biggest trading partner and it currently buys about one-third of Australia’s exports.

“The past 40 years have been quite transformational,” says UNSW international security expert Professor Alan Dupont. Today, annual trade with China is worth more than $100 billion and China is our largest source of inbound tourists and second-largest source of migrants.

In education, too, the China–Australia relationship has made significant strides [see box opposite]. In 1971, there were no Chinese students in Australia. In 2013, China is our largest source of overseas students, with more than 167,000 studying here.

“Chinese enrolments directly subsidise the university education of each and every Commonwealth-supported Australian student,” says Laurie Pearcey, UNSW’s new Director of the China Strategy and Development Unit and Director of the University’s Confucius Institute.

“In many ways it will be these people-to-people links, created through education, that will lay the foundations for the stronger ties to come,” Pearcey predicts.

He says the growing willingness in Canberra to outline the future shape of relations with China is encouraging.

“The Prime Minister pulled off a massive coup with the formalisation of a
high-level strategic dialogue with the Chinese leadership,” Pearcey says. “This evaded Kevin Rudd during his time as prime minister. There is now a contest of ideas firmly embedded in Australia’s public discourse about our future engagement with China that didn’t exist five or 10 years ago.

“To have an Australian government articulate so much of its reform agenda within the context of the Asian Century demonstrates that the concept of engaging with our region is increasingly seen as political selling points.”

Despite the upbeat rhetoric, Australia’s relationship with China is still primarily in the economic domain, and moving beyond that will require effort, Dupont argues. “However, there have been some significant developments. We now have Chinese officers studying in our defence colleges, a strategic dialogue including limited intelligence exchanges, ship visits and the prospect of the first military exercises between the Australian and Chinese defence forces. “Having gone through a period of excessive exuberance about China’s potential as a market and partner, we seem to have at last settled into a more realistic appreciation of what is achievable given China’s very different history, culture and political system,” Dupont says.

One of the great successes in the Australia–China relationship is education. Last year, more than 167,000 Chinese students attended Australian universities, 5,700 of them at UNSW, making China by far the largest source of international students.

The trend is set to continue with visas granted to students from China surging 34% in the first three-quarters of 2012–13, compared with the previous year.

Recognising the importance of China to its future, UNSW last year recruited former chief executive of the Australia China Business Council, Laurie Pearcey, to head up a new China Strategy and Development Unit embedded in UNSW International.

Testament to the strength of the relationship, last year Vice-Premier and member of the Chinese Communist Party’s Politburo, Madam Liu Yandong, visited UNSW to mark the 40th anniversary of China–Australia diplomatic relations.

“While student recruitment is the foundation of everything we do, UNSW’s engagement with China is increasingly about so much more,” said Vice-Chancellor Professor Fred Hilmer, who hosted Liu’s tour.

“With China’s emerging position as the world’s largest investor in research and development and UNSW’s role as a research-intensive university with a track record of strong industry linkages, we are well positioned to forge new strategic partnerships and alliances throughout greater China.”

One such partnership is with China’s National Academy of Education.

In Beijing in May, Deputy Vice-Chancellor (Academic) Professor Iain Martin announced a partnership to train the presidents, vice-presidents and senior managers of China’s 2,236 universities.

While UNSW will share its best practice in academic governance and university management, Martin says there’s a lot to learn from China given its annual $250 billion investment in higher education.

“China is undertaking the largest investment in research and development in the history of our planet. It’s only a matter of time before China is home to as many of the world’s elite universities as the US. It’s important for us to invest in these new relationships now.”

In stark contrast, Australia slashed $1 billion from research funding last year followed by the recent $1.8 billion cut to fund the Gonski education reforms.

“These cuts challenge our ability to stand still let alone improve the performance of our leading universities during the Asian Century,” Martin says.

Other players are not being so short-sighted. American private-equity tycoon Stephen Schwarzman recently announced a $300 million scholarship scheme for Beijing’s Tsinghua University, which he hopes will one day rival the Rhodes scholarship.

On the collaborative research front, Australia is also facing competition. In April, Prime Minister Julia Gillard launched the UNSW-led Australia–China Joint Research Centre in Beijing to investigate long-term sustainability for the minerals, metallurgy and materials industries in each country.

But UNSW Deputy Vice-Chancellor (Research) Professor Les Field told The Australian newspaper that many of Australia’s existing international programs were focused on diplomacy rather “than cementing real research collaborations”.

“China is engaging with the world more aggressively every day, whether we are part of it or not. Australia should capitalise on the strong ties we have on multiple fronts,” he said.

He says that Australia needs to invest in research partnerships to avoid losing the opportunities that China offers.

– Steve Offner
Linda Jakobson, the East Asia Program Director at the Lowy Institute, says the plan to hold an annual dialogue between Australia’s prime minister and China’s premier – as well as foreign ministers and treasurers – will provide a ‘toolbox’ for shaping future relations.

“Already in the economic ties, there are issues to be discussed – the free trade agreement negotiations and misperceptions about investment coming from China,” she says.

“More broadly, there will now be a locked-in time and place for Australia and China to discuss regional issues and tensions.”

Even compared with three years ago there is much greater risk now that a strident nationalism will characterise China’s behaviour in the next 10 years, warns Dupont.

“It is already increasing tensions in the region, none of which is good news for us or anyone else in Asia,” he says.

Dupont believes the government has taken an overly optimistic view of China’s rise and has failed to adequately respond to China’s increasingly assertive stance.

He points to China’s historic rivalry with Japan and its dispute over the Senkaku/Diaoyu islands in the East China Sea as a likely flashpoint. Also problematic are Chinese strategic expansion into the western Pacific – historically the US’s domain – and China’s involvement in state-sponsored hacking and cyber-terrorism.

Gillard received a taste of what could lie ahead after announcing during a visit by President Barack Obama that up to 2,500 US Marines would be stationed in the Northern Territory. The plan drew a frosty response from China.

The reaction fuelled debate about whether Australia faced a ‘China choice’ and would one day need to choose between its alliance with the US and its biggest trading partner.

But Professor Michael Wesley, from the Australian National University’s National Security College, says it’s unlikely Australia will ever develop a friendship with China to the level of warmth enjoyed with the US, New Zealand and, increasingly, Indonesia.

“We need to be realistic about it. It is not about being Western and Asian. It is more about where we sit in terms of our ambitions, our levels of trust, our levels of comfort with each other,” he says.

Wesley believes the impediment will largely come from China, which will remain “strategically quite lonely”.

He cites China’s exceptionalist view of its role in the world along with its reluctance to declare a stance on international frameworks ranging from the laws of the sea to intellectual property rights.

“The US is exceptionalist too, but it also has a kind of egalitarian spirit. The US acts as a great power at times but unlike China also invests heavily in international institutions that espouse and uphold sovereign equality.”

With an Australian election in September, both sides of politics are taking a bipartisan approach towards foreign policy and any change of government is unlikely to result in dramatic changes in the China relationship.

“Broadly speaking there are no big differences between the main parties,” Pearcey says. “Where I do see a point of difference is the free trade negotiations which were kicked off by John Howard eight years ago and which have fallen by the wayside.

“The Coalition has signalled negotiations will be firmly back on the agenda. Taking that forward could make a spectacular difference to the services economy and provide longevity to the trade and investment relationship outside of the resources boom.”

Despite underlying differences, most experts believe the positives of the Australia–China relationship far outweigh any potential problems, and tensions are no barrier to co-operation – if properly managed.

As You Ji says: “We do not need to be close. We just need to maintain relations on the basis of mutual benefits. The countries have very different values and histories. But you can’t let these challenges jeopardise the interests of both parties.

“The best policy is to have the cake and eat it too.”

THE OTHER ASIAN GIANT

Australia’s relationship with the “other” Asian giant, India, has begun to blossom after years of neglect and recent hurdles.

For decades, the two nations failed to closely engage even though diplomatic ties extend back before Indian independence in 1947 and both share Commonwealth membership, a similar political system, a common language and a passion for cricket.

That ties remained cool was in part due to the two nations’ different stances during the Cold War as well as the White Australia policy and India’s largely closed economy.

This has changed dramatically in recent years: India is now the biggest source of Australia’s permanent immigrants, the second-largest source of its international students and the fourth-largest buyer of Australian exports.

There has been a new set of obstacles recently such as fears about the safety of Indian students and Australia’s refusal to export uranium to India, but these too have largely been resolved.

Rory Medcalf, a Program Director at the Lowy Institute and head of the Australia–India Institute’s Sydney node at UNSW, says relations have “transformed” in the past decade and tensions over the safety of Indian students led to closer political ties.

“India was for a long time a grossly neglected relationship in Australia’s constellation of foreign relations,” he says.

“That has changed dramatically over the past 10 to 15 years. Australia is making a real effort to engage in line with India’s growing importance. The silver lining to the student crisis is there was an accelerated tempo of high-level visits in both directions.”

Australia and India have also moved to bolster defence ties, including regular ministerial-level talks as well as greater co-operation in naval, counter-terrorism and intelligence operations.

Notably, Australia’s recent Defence White Paper – released in May – no longer describes the nation’s area of immediate interest as the “Asia-Pacific” but as the “Indo-Pacific”.

Medcalf says as ties and trade continue to expand, Australians will need to do more to understand and engage with Indian culture.

“There is absolutely a need to improve Australian cultural literacy towards India,” he says. “For instance, any young middle-class Australian seems to know how to use chopsticks but a lot of Australians … probably don’t realise most Indians are vegetarian. I have been to functions where Indian visitors are given nothing but meat pies and sausage rolls. It’s not a good look.”

— Jonathan Pearlman
It has to be one of the most difficult – and thankless – roles. After years of painful deliberations, long meetings and no pay, the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM) – the so-called bible of psychiatry – has been released to a chorus of criticism, from both within and outside the psychiatric fraternity.

And it wasn’t any less contentious being on the high-level international working groups tasked with finalising the manual’s content – a responsibility given to a select group of experts, including only two Australians, both from UNSW.

“It was warfare,” quips Scientia Professor Perminder Sachdev. “Someone has said that developing criteria is not science, it’s a battle. There will never be complete consensus.”

An expert on dementias, Sachdev was invited to be one of nine members of the Neurocognitive Disorders Work Group. It was one of 13 working groups assembled by the American Psychiatric Association (APA). Each group decided what was to be included in the document. Decisions were then scrutinised by three panels before final approval was given by the Board of Trustees.

In Sachdev’s group, one change was the inclusion of a new condition, mild neurocognitive disorder (MCD), a forerunner of dementia. “It’s controversial, but it’s obvious,” Sachdev says of the two-year battle to include MCD. “There was some resistance because of the fear it would open up a whole new market for drug companies. The group decided the diagnosis was being used by clinicians anyway and it was important to standardise its use.”

First published in 1952, the DSM was initially a 130-page collection of disorders, often listed with no symptoms. Its third revision, in 1980, included a symptomatic check list.

Sachdev, who was recently awarded an International Distinguished Fellowship by the APA, seems unfazed by criticism that the DSM is a symptom-driven approach. “It’s like a Chinese takeaway: you have this, this and this and you have a meal,” says Sachdev, of the diagnostic process. “In medicine in general, there are well-established biomarkers for diseases such as leukaemia or myocardial infarction. In psychiatry, for the most part, it’s not really disease we are talking about, and there are no good biomarkers – the symptoms are often all we have, and yet people are suffering and need to be diagnosed and treated.”

He admits the DSM has “many flaws” and cannot be everything to everyone. The other UNSW academic involved at the highest level of the DSM process was Professor Gavin Andrews, from the St Vincent’s Clinical School. Andrews has been involved in the DSM-5 since 1999, before the work groups were even assembled. He was a member of the Anxiety, Obsessive-Compulsive Spectrum, Post-traumatic, and Dissociative Disorders Work Group.

Also contributing at lower levels to the DSM-5 process were Scientia Professors Gordon Parker and Richard Bryant. Bryant is candid about his frustrations. The Director of the UNSW Traumatic Stress Clinic was on a sub-group looking at trauma, dissociation and Post-Traumatic Stress Disorder (PTSD), and is still annoyed prolonged grief disorder did not make it into the manual.

“People were screaming at me,” he says of his negotiations to have the disorder included. “It was like I was touching on a taboo topic.” Prolonged grief is now simply an appendix of the manual.

Bryant is also concerned about new symptoms added to PTSD – there are now more than 636,000 ways this one disorder can present. But on balance, he believes the DSM-5 has its place: “It is needed and it does bring a lot more structure. The problem is personal views have a strong impact on outcomes, despite what the science may be telling us. When you work in committees, personal agendas come into the story and this has always been the case with DSM-5.”
THAT SO MANY urban Australians spend two or three hours a day in traffic commuting at a considerable personal and economic cost (projected to be more than $20 billion a year by 2020), is not an inevitable consequence of city living. It’s another planning failure and should be a national disgrace.

A master plan for our cities would go a long way to more effectively harness Australia’s urban potential. The difference between thoughtless urban development and well co-ordinated urban policy is stark, in terms of our happiness, health and prosperity.

It might not seem immediately obvious but a well-designed harbour in Darwin is good for someone in Sydney and an attractive Canberra city centre is good for someone in Perth.

Why? Because cities are at the heart of a nation’s economic life and unless we invest in them wisely and strategically – with good design and the public interest at their heart – we’ll squander the very considerable economic returns great cities offer national economies.

But what might a co-ordinated plan to secure the future of major Australian cities look like?

A good place to start is to promote informed debate and public awareness to help put the future shape and state of our cities on the political agenda. This may, in turn, lead to a renewed appetite among governments at every level to reclaim a visionary role for the development of urban infrastructure and as custodians of our built and natural environments.

Such government leadership, oversight and responsibility have been on the decline over the past 50 years and with them the potential of urban policy and strategic planning to benefit the nation. Meanwhile, we’ve left our cities to the profit motives, vested interests and whims of private developers, leaving the public interest pretty much out in the cold.

It is only governments that can effectively take the lead on major strategic investments that take decades for the obvious economic returns to unfold.

There are many contemporary models around the world that might inform the development of such a cohesive national position on the stewardship of Australia’s urban future. Take, for example, Norway’s significant sovereign fund, Germany’s environmental legislation and leadership in technology, Singapore’s commitment to innovation through urban research or China’s recent focus on massive investments in public transport infrastructure.

Meanwhile, Sydney, our much-lauded international gateway to the booming Asia–Pacific region, is pretty much sitting on its hands. Similar conclusions can be drawn for all our major cities. Yet, these are the same Australian cities that generate about 80% of GDP, 75% of jobs and about 85% of economic growth.

We are currently advised, for example, that it will take seven years for the NSW government to implement a tramway from central railway station to Randwick and Kingsford, much of which runs along a previous tram route requiring relatively straightforward adjustments to existing road networks.

Even a cursory glance northwards to Asia – where so many extraordinary infrastructure projects are transforming cities and solving urban problems – makes it abundantly clear that such a timid approach to urban investment will not be sufficient to keep Sydney competitive.

History amply illustrates the very worst thing we can do for the national economy is to do too little to advance the economies of our cities.

To maintain Australia’s economic competitiveness, we need a new national urban paradigm underpinned by long-term investment in urban infrastructure. The Sydney Opera House has, for example, generated deep ongoing economic and community benefits for both Sydney and the national economy. By contrast, would we really need to be rebuilding Darling Harbour less than 30 years after its completion, if we had planned wisely in the first place?

“Cities are at the heart of a nation’s economic life and unless we invest in them wisely and strategically – with good design and the public interest at their heart – we’ll squander the considerable economic returns great cities offer.”
THE FEDERAL GOVERNMENT has finally announced plans to put the issue of constitutional change on the ballot in September, by asking voters to support a referendum designed to give “financial recognition” to local governments.

The widespread view is, however, that the fate of this proposal depends on the Opposition, and on this basis, the success of the referendum still hangs in the balance.

Opposition leader Tony Abbott initially indicated in-principle support for such a change, but raised doubts about the government’s timing and motives. Since then, two state governments have come out opposing the question and Liberal Senator Cory Bernardi has also suggested the federal Coalition withhold its support, at least until full consideration of the issue by the party room.

Defeating the referendum offers a clear opportunity for the Opposition to further the perception of the government as incompetent and ineffective, and with the election so close this may be an opportunity too tempting to pass up for Abbott. (The defeat of the Labor government’s 1988 referendum proposals were certainly a boost to John Howard in Opposition, and Abbott is surely aware of this.)

The Gillard government, however, may actually have more power to save the referendum – and its credibility on the issue – than this understanding suggests. Successful constitutional change generally enjoys bipartisan support, but this does not mean such support is always the cause of successful change.

In some cases, voters may look to political leaders for cues on issues in ways that give those leaders real power to pass, or defeat, a proposed change. But in other cases, voters may be ready to form their own views about the merits of particular changes – and the motives of those opposing them.

No one in politics wants to be on the losing side of history. So when a proposal for constitutional change enjoys broad popular support, it generally makes sense for political leaders on both sides of politics to support it. This is certainly one explanation for why both sides of politics supported the 1967 changes designed to remove (some of) the vestiges of racism from the 1901 Constitution: these changes enjoyed broad national support from the outset, not just on referendum day.

Change is also possible in some cases even without this kind of “herd” or snowball effect. Just ask Robert Menzies: it would never have occurred to Menzies in 1951 to seek bipartisan support for his attempt to gain constitutional authority to ban the Communist party. On the contrary, Menzies’ tactic was to try and smear the Labor party by associating it with the wrong side of history (i.e. communism). The proposal also came quite close to passing, and might well have done so with a better campaign, or less formidable opponent in H.V. Evatt as opposition leader.

Julia Gillard is not Robert Menzies, and no one thinks recognising local government involves the same passions or stakes as banning the Communist party. But it may be that in 2013, unlike in 1988, history is on the side of proposals to give explicit constitutional recognition to the Commonwealth’s power to fund local governments.

There is currently a range of well-known and popular programs (like the Roads to Recovery program) financed by Commonwealth grants to local government. Recent decisions of the High Court have raised serious doubts about the constitutionality of these programs, which were not present in 1988.

If Abbott continues to withhold support, Gillard might therefore do well to take a small leaf out of Menzies’ book – and remember that leaders can sometimes lead the people to a “yes” vote, even without the help of the Opposition.
When Ruth died suddenly without having made a will, grief soon turned to confusion.

In Sydney to visit one of her sons, the Aboriginal woman had left no instructions about where or how she was to be buried.

Her city-based son wanted her where he could visit her grave. Her other son was adamant she be buried in her traditional country. Within the community, people began to take sides.

The dispute stretched on while Ruth’s body waited. After five days a court decided both sons had equal claim under intestacy rules and, since her body was in a Sydney morgue, she should be buried where the least travel was involved. The community was upset and Ruth’s sons no longer speak.

The story is typical, says Professor Prue Vines, who has written NSW’s first Aboriginal Wills Handbook.

“A result of a partnership with UNSW’s Indigenous Law Centre and the NSW Trustee and Guardian, who funded the project, the book recognises that the law of intestacy is often not culturally appropriate and that those drafting wills for different ethnic groups are unsure how to go about it.

As a group, Indigenous people are the most unlikely to make a will. “The rate of Aboriginal people who make wills is about 2%. That compares with about 55% in the general community,” Vines says.

Indigenous Law Centre Director Professor Megan Davis says the research is some of the most important for Aboriginal people.

“They were very interested when I showed them that making a will could actually help.”

A culturally appropriate will also can recognise differing kinship structures, ensuring the right people in family groups are looked after, says Vines. It’s something that applies not only to Aboriginal people, but also to groups such as the Islamic community.

“Our intestacy laws say wealth goes automatically only to your children, and that doesn’t include your nephews and nieces,” she says. “In many cultures, your nieces and nephews are considered to be your children, so if you think you owe obligations to them, then the law is going to be a problem.

“But it can be easily fixed with a will.”

In researching the book, Vines consulted extensively, spending a year visiting communities and asking, “What worries you?”

“I spoke mostly to women elders because the men generally didn’t want to talk about it,” Vines says.

“What they said was ‘number one, we want to stop the disputes’. There had been so many fights, and the really bitter ones were about where somebody is buried.”

Around 70% of the burial disputes that go to court in Australia involve Aboriginal people. “And that’s the ones that are reported,” Vines says. “That’s a very high proportion given that Aborigines make up only 2% to 3% of the population.”

Vines was surprised that many of the women believed there was nothing that could be done.

“These were people in the communities, particularly the mixed communities, who came from all different places, who were saying ‘we don’t have our old dispute resolution devices … they’ve broken down’.

“They were very interested when I showed them that making a will could actually help.”

A legal document can help bridge the divide between the courts and Aboriginal culture when it comes to the wishes of the dead, writes Steve Offner.
Arts

For Mari Velonaki, there’s nothing cold or technical about robots. The Director of COFA’s (College of Fine Arts) newly established Creative Robotics Lab has spent the past decade building robots and machines incorporating movement, speech, touch, breath and artificial vision to encourage human interaction. “I use technology to learn more about people — how they respond to new interfaces and robotic forms and what causes them to be attracted or repulsed,” she says.

Diamandini, Velonaki’s latest robotic creation, isn’t your typical android. The 155 centimetre female figurine resembles a graceful, life-size doll in Victorian-inspired dress. She reacts to engaged spectators by moving towards them with her delicate hands upturned in a silent question. Diamandini’s appearance is a deliberate measure by her creator to encourage “unbiased” interaction.

“I wanted her to look like a woman but not overly sexual, so that people were encouraged to reach out and touch her,” says the associate professor who was awarded an Australian Research Council Queen Elizabeth II Fellowship to create the humanoid robot.

Diamandini’s presence at the 2012 London Design Festival resulted in 28,000 spectators interacting with her at the Victoria & Albert Museum. The robot senses spectators’ body language and responds accordingly, by either moving towards them or away. “It was interesting to see how people responded to her, what they felt comfortable with, or what was socially acceptable and this varied between cultures and social groups,” says Velonaki.

UNSW is one of the few universities globally to establish a creative robotics lab, and eminent researchers from Tokyo University’s Watanabe Lab and Stanford University’s Artificial Intelligence Lab are already queuing up to be involved.

Based in COFA’s National Institute of Experimental Arts, the lab works in partnership with the Australian Centre for Field Robotics at the University of Sydney and UNSW’s School of Computer Science and Engineering.

“Psychology, sociology, philosophy, artificial intelligence — all of these disciplines are complementary to the field of creative robotics. I want academics to come to this lab and know that they can experiment and take risks,” says Velonaki, who completed her Bachelor of Fine Arts and PhD in Experimental Interfaces at COFA.

Until recently, robots were the stuff of fantasy. Scepticism surrounded the field as an academic discipline, but Velonaki says those perceptions are changing. “When I first started creating robots I was invited to conferences as a sort of ‘exotic other’ — now I get invited because people actually want to hear what I have to say,” she says.

The final stage of Diamandini’s five-year development involves making the robot responsive to human touch. Dr David Silvera-Tawil, a postdoctoral researcher in the Creative Robotics Lab, will use his expertise in touch transmission and artificial skin to bring the robot to her final phase. Velonaki hopes the research results will eventually transfer to real-world applications in the form of devices that can assist humans. “The creative arts and humanities can play a role in the development of new technologies by making them aesthetically and intellectually stimulating and by questioning their social implications,” she says.

The Creative Robotics Lab will be officially launched in July. Photo: Victoria & Albert Museum London

Robotic LOVE

A feminine humanoid that interacts with onlookers is challenging our perceptions of technology. Fran Strachan reports.
THERE’S A PALPABLE SENSE of renewal at the inner-city campus of the College of Fine Arts (COFA) where the new Dean, Professor Ross Harley, has a clear vision for the future.

“I want to see us become, not just Australia’s leading faculty of art and design, but one of the world’s leading colleges in the field of experimental art, design, research and practice,” he says emphatically.

COFA received the best results of any art and design school in the country in the Excellence in Research for Australia (ERA) report in 2010 and 2012.

Harley’s ambitions are already emerging following his decision to co-chair the influential International Symposium on Electronic Art (ISEA), held at COFA, and around Sydney, as part of the Vivid festival in June this year.

He brings years of experience to the role as an internationally renowned artist in his own right and former head of COFA’s School of Media Arts.

“I feel excited that so many things have converged – my new position as Dean, how big and bold ISEA has become and the future direction of COFA,” he says gazing out at the multi million-dollar campus upgrade.

The aim of ISEA fits neatly with Harley’s philosophy to foster academic exchange among culturally diverse organisations and individuals working in art, science, maths and technology. The festival showcased the best media artworks from around the world while providing a platform for a lively exchange of ideas.

“From my perspective, art and design are crucial to the quality of our everyday lives,” Harley says. “Great cultures, societies and moments in the history of civilisation are basically judged by the height of art and design and I think we may have lost sight of that.

“Art and design are sometimes considered a sideline discipline: the icing on the cake, the frilly stuff on the edges that doesn’t really matter because it’s not profoundly important. There’s an idea that if we lost art, then society wouldn’t be any worse off, but nothing could be further from the truth.”

Harley hopes to see greater synthesis between experimental art and design, and other disciplines. “I hope that like da Vinci, we can think again in the 21st century about doing a drawing that is a conceptual sketch of an idea that ends up being a technological invention or a scientific discovery.”

RESISTANCE IS FUTILE

The ambitious experimental agenda of new COFA Dean, Ross Harley, is changing the way we think about art, writes Anabel Dean.

Photo: Britta Campion
Harley’s thoughts represent a groundswell of change across the globe that is reasserting the connections between art and science, engineering, maths and technology.

ISEA is a practical and concrete demonstration of this, as well as being a public acknowledgement of the contribution that artists have made as experimenters, explorers and questioners. It places electronic arts and creativity at the centre of COFA and Sydney, which is the first city in the world to host ISEA twice (Harley was Director when it was staged here in 1992).

This year’s theme, *Resistance is futile*, focuses on electronic arts and practice now embedded at the heart of contemporary culture.

“When all of this started 20 years ago, it was a really edgy concept that not everybody accepted, but now we’re saying get over it because it’s a persistent and pervasive force.”

UNSW sponsored a major exhibition program that brought robotics, video projections, large-scale outdoor projects, workshops and master classes to COFA and other venues including the Museum of Contemporary Art, Art Gallery of NSW, Powerhouse Museum, University of Technology, Sydney and Carriageworks. An interactive exhibition, *Running the City*, was presented by COFA’s National Institute for Experimental Arts (NIEA) and its chief curator, Felicity Fenner.

“The world has undergone incredible change this century,” says Harley. “This calls for a new understanding about what creativity, innovation and originality might be.”

An increasing number of students and artists at COFA are working with scientists, technologists and engineers to undertake critical and experimental arts-led projects.

Artist Paula Dawson’s research that builds holographic systems with science and engineering input from the Massachusetts Institute of Technology is an example. Then there’s the work of iCinema at UNSW, which teams with computer science and engineering to develop futuristic immersive and interactive cinema.

The new Creative Robotics Lab at COFA continues to break new ground, too, under the stewardship of Mari Velonaki [see page 19].

“We want our students to come up with original questions and original answers,” Harley continues. “That’s really important in the development of our knowledge and understanding of what it means to live in today’s world.”

The students have always been paramount at COFA. This point was emphasised when Harley moved out of his new, glass-walled Dean’s office to create space for a permanent student showcase of work. It was a symbolic gesture by an artist who judges the student experience as critical to his style of management.

“I’m very keen to get the students – who are what it’s all about – to give us direction. We will respond where we can,” he says. “I want to engage everyone in developing a new plan for where COFA is heading in the next five years.

“Based on all of the amazing work that has happened in the past 15 years under Ian Howard’s leadership, it’s time to take it to the next level, so that COFA is the art and design school of the 21st century.”

“There’s an idea that if we lost art, then society wouldn’t be any worse off, but nothing could be further from the truth.”
THE OLD TOTE …

THE LITTLE HUT THAT COULD

Fifty years ago UNSW spent $6,000 converting a corrugated-iron shed opposite Randwick Racecourse into a theatre.

Named after the totaliser betting building that still stands beside it, the Old Tote has launched the careers of some of Australia’s finest actors: Mel Gibson, John Bell, Jacki Weaver, Judy Davis and Colin Friel.

It’s a remarkable history for a building that began as a WWII army mess hall before becoming a migrant hostel and finally a theatre in 1963.

The 155-seat theatre was the by-product of a relationship between NIDA, the Old Tote Theatre Company and UNSW. It was a collaboration largely driven by then vice-chancellor and amateur thespian, Phillip Baxter, who was determined to introduce the arts to what was then the University of Technology. One of the first productions in 1963 was The Cherry Orchard, directed by UNSW’s founding professor of drama, Robert Quentin, and starring a young John Bell. The show was a resounding success, despite fears the old hut would not be “furnished comfortably”.

The following year the first Australian performance of Who’s Afraid of Virginia Woolf? prompted a visit to campus from the vice squad, demanding to see the script. The show went on even though several reviewers described it as “obscene”.

Despite its appearance and distance from the city, the Old Tote quickly became the centrepiece of Sydney’s drama scene. In 1967 reviewer Denis O’Brien described it as “the sole support of passion for good theatre in Sydney”. In its 40th year, playwright Quentin called it “an oasis in a great concrete world, sylvan, arcadian and beautiful”.

But the size of the Old Tote was limiting. In 1968 the “New” Old Tote was established at NIDA’s Parade Theatre and the tin shed became the NIDA Theatre until 1987. When NIDA took up its new premises on Anzac Parade the Old Tote became the Fig Tree Theatre, which continues to be used for student productions and public hire.


Books

AN ECONOMIC THEORY OF GREED, LOVE, GROUPS AND NETWORKS: DR GIGI FOSTER, AUSTRALIAN SCHOOL OF BUSINESS AND PROFESSOR PAUL FRITJERS

Why are people loyal? Where do our social structures come from? Until now, economics has been able to only partially answer these questions. In this groundbreaking work, the authors present a new unified theory of human behaviour. They incorporate comprehensive yet tractable definitions of love and power, and the dynamics of groups and networks, into the traditional mainstream economic view. The result is an enhanced view of human societies that nevertheless retains the pursuit of self-interest at its core. This book illuminates history and suggests ways forward for policies in areas as diverse as poverty reduction and tax compliance. Cambridge University Press

DIRECTORY OF WORLD CINEMA: GERMANY: EDITED BY MICHELLE LANGLEY, SCHOOL OF THE ARTS AND MEDIA

From bleak Expressionist works to the edgy politics of the New German Cinema, and the feel-good films of the postwar era, Directory of World Cinema: Germany offers a wider film and cultural context for the works that have emerged from Germany – including East German films. This volume explores the key directors, themes and periods in German film history, and demonstrates how genres have been adapted over time to fit historical circumstances. Rounding out this addition to the Directory of World Cinema series are 50 colour stills, numerous reviews and recommendations, and a comprehensive filmography. Intellect

INTERNATIONAL LAW IN THE NEW AGE OF GLOBALIZATION: BY ANDREW BYRNES AND CHRISTOPHER MICHAELS, UNSW LAW, AND MIKA HAYASHI

This collection brings together essays that address some of the challenges that globalisation poses to the international legal order. Of interest to international law scholars, practitioners and students, or anyone working in the field, the book examines the interaction of globalisation and international law through sub-themes including: the adaptation of classical international legal tools to regulate and adjudicate community interests and conflicts; globalisation and the diversification of actors; and the exposure of state sovereignty to private players and the need to preserve the regulatory powers of states. Martinus Nijhoff Publishers

PYONGYANG LESSONS: NORTH KOREA FROM INSIDE THE CLASSROOM: BY STEWART LONE, UNSW@CANBERRA

From 2010 to 2012, the author went every six months to teach at two major secondary schools in Pyongyang, North Korea. He spent hundreds of hours in the classroom and in informal conversation groups. In this book, he recounts his experiences and presents what he learned about North Korean lives, study, ideas, interests and ambitions. Who would have thought, in a society routinely dismissed as repressive, that schoolchildren learn about Maoris, have discussions on animal rights, and that young boys idolise a Barcelona footballer? What emerges is an intimate portrait of the human face of Pyongyang. Published as an e-book
“LET ME CHOOSE MY WORDS FAIRLY CAREFULLY. I THINK IT’S HIDEOUS.”
Professor Alec Tzannes on the design of the 60,000 NBN street cabinets under the Coalition’s National Broadband Network – SMH

“NEW LAWS ARE JUST AS CAPABLE OF CREATING INJUSTICE AS THE OLD. THE ELIMINATION OF LEGALLY INFlicted INJUSTICE IS ALWAYS A WORK IN PROGRESS.”
Justice Ronald Sackville, Justice Talks lecture – UNSW

“Philanthropy cannot ever take the place of government funding but it can contribute to a good university becoming a great university.”
Jennie Lang, Vice-President, Advancement – Fairfax Press

“If we are to harness the potential of new technology we need to understand how interaction with teachers and students is changing, and the pace at which this change is occurring.”
Professor Iain Martin, DVC (Academic) from his op-ed “Technology changes face of classroom” – The Australian

“GOVERNMENT BY MEDIA RELEASE USUALLY LEADS TO TEARS.”
Vice-Chancellor, Professor Fred Hilmer on the lack of consultation ahead of sector cutbacks to fund the Gonski reforms – The Age

“This was not an angry man who had been wronged, but a leader who used a personal incident to tell a story and provide a path forward for the community.”
AGSM’s Professor Chris Styles praising Sydney Swans footballer Adam Goodes’ response to being racially vilified by a teenage spectator – ABC The Drum

“BRINGING DOWN CARBON EMISSIONS IS A MATTER OF ROLLING UP OUR SLEEVES AND CHOOSING TO DO IT. FOR THIS GENERATION TO SAY, ‘WE CAN’T’ WOULD BE A SAD ADMISSION OF FAILURE FOR A CIVILISATION THAT HAS ACHIEVED SO MUCH.”
Professor Steve Sherwood, Director of the UNSW Climate Change Research Centre – The Conversation

“She leaves a formidable legacy of law-reform achievement.”
Professor David Brown and Max Harcourt, obituary for UNSW Law academic Sandra Egger – SMH

“IT’S THE KIND OF ADVANCE THAT OTHER PEOPLE ARE ANTICIPATING IS A DECADE AWAY.”
Suntech R&D Australia Managing Director Renate Egan, about a UNSW solar breakthrough enabling solar cells made from low-grade silicon to reach 23% efficiency – SMH
UNSW IN THE CITY

Congratulations to UNSW’s writers and artists who helped fire up Sydney’s winter festival season

- Faculty of Arts and Social Sciences – a major sponsor of the Sydney Writers’ Festival

- UNSW Press and associated publishers – 48 authors and one of the writers’ festival’s top-selling books, *The Misogyny Factor*, by Anne Summers

- College of Fine Arts, School of the Arts and Media, and the Australia Ensemble@UNSW – featured artists in the Vivid festival

- Faculty of Built Environment – a Vivid light sponsor and M. Hank Haeusler, curator *Media Façade Exhibition*, Customs House

- Visiting Fellow William Yang – whose first film, *My Generation*, premiered at the Sydney Film Festival 📽️