

# SAM



THE UNIVERSITY OF  
SYDNEY

INSIDE THE MIND OF  
GERALDINE BROOKS

SPEAKING OUT ON  
MARRIAGE EQUALITY

MEDICINAL CANNABINOIDS:  
A NEW RESEARCH FRONTIER

ALUMNI SOCIAL VENTURES  
CHANGE HUNDREDS OF LIVES



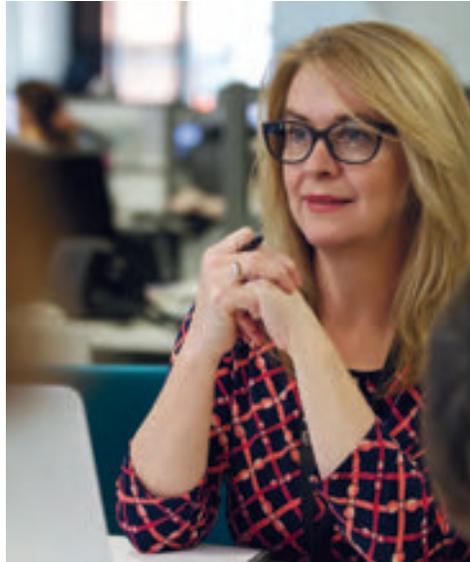
Generation Y not?



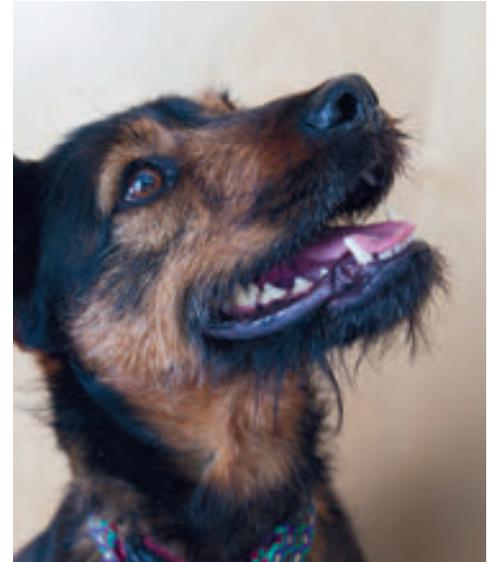
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# Leadership for good starts here.

For 165 years our students have forged a vision at the University of Sydney and gone on to change lives for the better.

[sydney.edu.au/leadership](http://sydney.edu.au/leadership)

From left to right: John Bell, Victor Chang, Anne Summers, Benjamin Veness, Kerryn Phelps, Michael Kirby, Subeta Vimalarajah, Gough Whitlam, Samah Hadid, Tara Moss, Mary Kostakidis, Nick Farr-Jones, Bruce Beresford, John Bradfield, Adam Spencer, Annabelle Chauncy, Jack Manning Bancroft, Ethan Butson, John O'Sullivan.

## PLANNING FOR THE FUTURE

Keen readers of news about the University will know that we are deep in conversation with our staff, students and the wider community about our 2016-20 Strategic Plan.

To guide this conversation and to encourage feedback, we have released a series of discussion papers on our education and research priorities. These papers propose a number of possible approaches to our curriculum and degree structure, and ask how we can build the best educational environment for our students and teachers; they look at how we prioritise and fund research, how we develop our researchers, and how we engage community and industry with our research.

At this stage we haven't made any decisions, and this is an important moment in our institution's history. While our fundamental mission won't change, I believe any world-leading university must regularly assess how it can best achieve this mission.

For us to ensure that Sydney is indisputably the best university in our nation, and arguably in the region, we must make sure that our courses equip the students of today – and tomorrow – with the skills and experience they need. In doing so, we need to make sure that our graduates can make the contribution to society that so many of our alumni do today.

As all levels of society confront new and pressing challenges, we need to equip our students to participate in a more dynamic and uncertain world of work and in increasingly globalised communities. While discussions about change are sometimes difficult, we would be doing these students a disservice if we avoided them.

I would urge you, as a valued member of the University community, to read more about our Strategic Plan and contribute to these important conversations. Your feedback is very welcome. [sydney.edu.au/strategy](http://sydney.edu.au/strategy)



Dr Michael Spence (BA '85 LLB '87)  
Vice-Chancellor and Principal

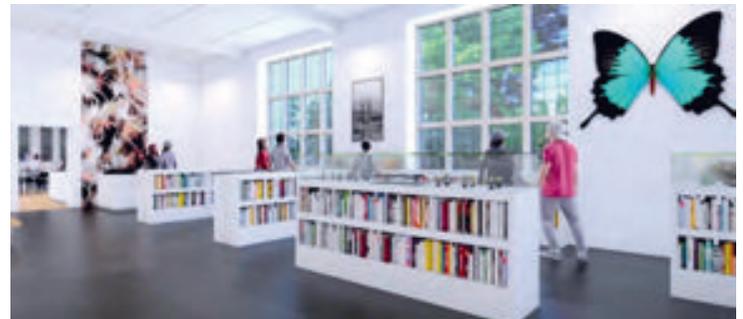
## PHILANTHROPY

## MUSEUMS MADE ANEW

A donation of \$15 million from businessman and philanthropist Dr Chau Chak Wing will support the refurbishment of two historic buildings and a new extension to house the University's Macleay, Nicholson and University Art Gallery collections as well as a special exhibition area for Chinese art and artefacts.

It's estimated that 99 percent of the 700,000 objects held by the three University museums are in storage because of limited exhibition space.

"This generous donation from Dr Chau Chak Wing is an enormous contribution, which will allow us to finally do justice to these magnificent collections by displaying them together in one building," the University's Vice-Chancellor



and Principal, Dr Michael Spence, says. "It makes possible the showcasing of some of Australia's most significant artistic, scientific and archaeological artefacts."

The historic Macleay and adjacent Edgeworth David Building will be redeveloped and connected via a new space. A 240-seat lecture theatre will be linked to 1800 square metres of exhibition space, along with conservation laboratories and a suite of temporary exhibition galleries.

The new Chau Chak Wing Museum is expected to be completed by the end of 2018 and will be open to the University community and the public.

To find out more, visit [sydney.edu.au/museums](http://sydney.edu.au/museums)

## TREADING ON NUTSHELLS

They're great in salads, even better in desserts, but soon you could be seeing macadamia nuts used in construction, thanks to the power of 3D-printing technology.

A research team led by University of Sydney architecture and engineering experts is investigating ways to use the discarded shells of macadamia nuts as a basic element in a new microtimber, made using pioneering 3D-printing technology.

The three-year study, partially funded by Forest and Wood Products Australia, aims to break new ground in the use of agricultural waste and 3D printing, which could play a major role in a more sustainable building industry.

The project will advance previous research into 3D printing techniques by co-leader Professor Andy Dong, Warren Centre Chair for Engineering Innovation at the University of Sydney.

"Timber is an important primary industry for Australia. Architectural and structural design aspirations are driving innovations in new value-added timber products, including the conversion of so-called waste material into a bespoke product," Dong says.

"The anticipated outcomes of the research are highly significant for the forestry industry. It could fundamentally change the way Australia produces timber-based products."

## NEWS

## AUSTRALIAN OF THE DAY

Advanced science student and prolific inventor Ethan Butson was recognised for his excellence in the fields of science and medicine research when he was named Australian of the Day on 19 June.

Also a state finalist for the 2015 Young Australian of the Year award, Butson is committed to applying technology to benefit humanity, creating the SMART (Stroke Management with Augmented Reality Technology) system – a camera-based device that helps people overcome stroke and vision impairment.

"Since I was young my natural curiosity has brought me to science. I find the more you learn the wider your knowledge base is, the easier the harder things become. I feel as though if I come up with a good idea, it's my moral obligation, or sense of duty to follow it through," Butson says.

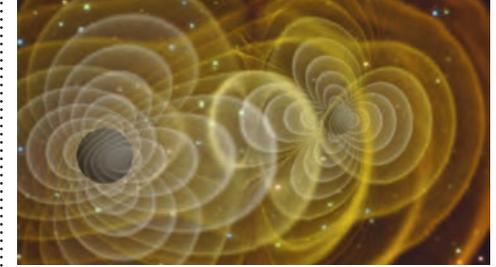
"That being said, it's not about the accomplishments or having papers published, that's not the goal. It's about knowing that I've helped one person. To know that something I've created can actually be used in real life to help someone, that's the thing that sends the warm fuzzies through my heart."

The Australian of the Day campaign is a Commonwealth Bank of Australia initiative that aims to recognise the contributions of everyday Australians.



Photograph by Martin Butson

## EINSTEIN IN OUTER SPACE



Warp drives may be the stuff of science fiction, but they could be a step closer to reality if we look to Einstein's theory of gravity, according to Geraint Lewis, Professor of Astrophysics at the School of Physics.

Einstein's theory of general relativity, penned in 1915, went largely ignored in the science community for many years, but now researchers are using it to open up fresh possibilities for space travel.

"We've now come to realise that the theory is very important to modern science as it not only describes the entire universe, it also predicts some very strange things, like black holes," Lewis explains. "It's Star Trek language: people talk about 'warp drives' where you bend space and time, and that allows you to travel at any speed in the universe. In the next 100 or 200 years maybe the theory will give us solutions, such as being able to travel efficiently and at high speeds across the universe."

While Einstein's general theory of relativity now sits with quantum mechanics as a major pillar of scientific understanding, Lewis believes we will see many more surprises during the next century.

"It's still a bit of a theoretical curiosity for everyday people, but as a scientific idea it's got wide-reaching consequences," he says. "When we finally unite Einstein's theory and quantum mechanics, we're likely to reveal many more secrets of the universe."

# Kindred spirits

Dr Gertrude Angel-Lord dedicated her life to caring for mothers and babies. Her legacy means that like-minded students can do the same.

Dr Angel-Lord's bequest established the Gertrude Angel-Lord and Francis Lord Scholarship. It supports undergraduate medical students who are in financial need.

Find out how you can make a lasting impact at [sydney.edu.au/bequest](https://sydney.edu.au/bequest) or call 02 8627 8492.



THE UNIVERSITY OF  
SYDNEY



# ON MY DESK: PIP PATTISON

Our Deputy Vice-Chancellor (Education) shares the stories behind the small things that matter in her office.

Photography by Victoria Baldwin (BA '14)



## NATIONAL SCIENCE FOUNDATION MUG

As a social scientist I've served on several panels at the National Science Foundation. There was a tradition on the Measurement, Methodology and Statistics panel that when you had completed a term of four periods of review, you were presented with a mug as a rite of passage. This multidisciplinary panel was my first exposure to the breadth of quantitative applications in the social sciences.



## ON MY WALL

These paintings by Josephine Burak (see *Filamarra* at right) and an unknown artist (above) are on loan from the Deputy Vice-Chancellor (Indigenous Strategy and Services) Professor Shane Houston. He introduced himself on the day I arrived at the University, more than a year ago, and told me the walls of my office were looking bare. These beautiful works of art materialised a couple of weeks later. I love the contrasting colours and patterns, with the two of them side by side. For me they are symbolic of a welcoming colleague and the broader welcome I've received here. It's been a thrill to get to know a whole new institution.



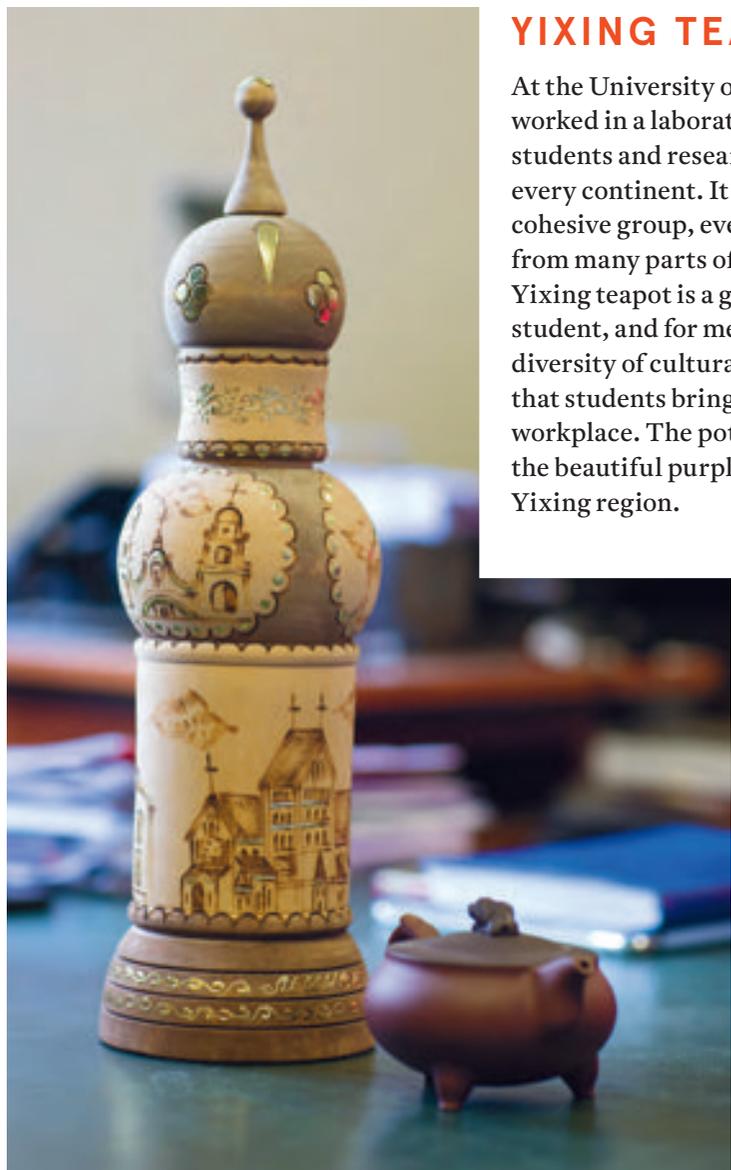
## BELARUS WOOD CARVING

This was a gift from one of my PhD students. What's wonderful about supervision is how different every student is and how the process of supervision is different in every case. Supervision is a very important relationship and your students become part of a family that just keeps on growing. My experience of supervising students has informed our strategy proposals for how we take forward the research experience for our students.



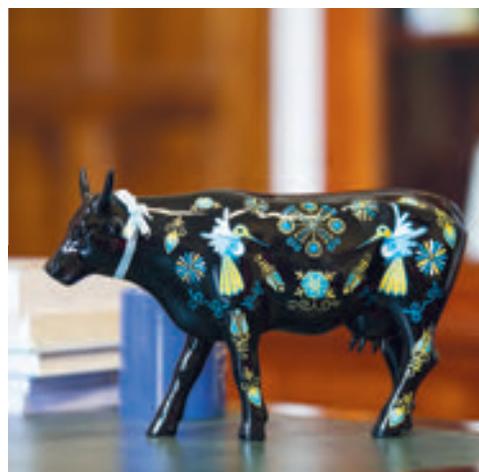
## BOOK: LATTICE THEORY

I used Garrett Birkhoff's *Lattice Theory* (1948) while working on my PhD thesis, and it's a book that has underpinned some other work I've done throughout my career. It's the most well-thumbed book in my office. My interests in both mathematics and psychology led me to develop mathematical models for various things, mainly to do with networks. Networks are in their essence kinds of relations, and lattice theory has a lot to say about the structure of relations from a mathematical point of view.



## YIXING TEAPOT

At the University of Melbourne I worked in a laboratory group with students and researchers from almost every continent. It was a wonderfully cohesive group, even though we came from many parts of the world. This Yixing teapot is a gift from a Chinese student, and for me it reflects the diversity of cultural backgrounds that students bring to an academic workplace. The pot is made out of the beautiful purple clay from the Yixing region.



## CERAMIC COW

This was given to me by a PhD student who completed a project on interaction patterns among cattle. We worked closely with the CSIRO at Rockhampton, Queensland. As social scientists we had developed methods for understanding patterns in human relationships and our CSIRO colleagues wanted to know whether we could use those same methods in the case of animal interactions.

As Deputy Vice-Chancellor (Education) Professor Pip Pattison is responsible for the University's strategy and vision for teaching and learning and students' educational experience. She is a quantitative psychologist by background, and her primary research focus is the development and application of mathematical and statistical models for social networks and network processes.

# ON MY MIND: SENTHORUN RAJ

Human rights advocate Senthorun Raj (BA(Hons) '10 LLB '13), talks about the marriage equality debate and different ways to recognise relationships.

I have spent almost a decade at the University of Sydney. From studying for an undergraduate Arts/Law degree to working on a PhD, I have been interested in the way academic work can reach beyond the institutional walls and strengthen our communities. My current research into law reforms designed to remedy violence against sexual minorities brings together my personal and political passions. I am – as others have jokingly described me – a “professional gay”.

From the age of 10, I was insistent I would study law. This had less to do with the financial or intellectual privileges of the profession and more to do with my desire to mimic the camp flair of the attorneys I had a crush on in television series *Law and Order: SVU*. When I came to university, discovering gender studies not only provided an intellectual solace for “coming out” as a gay man, it also transformed how I thought about my legal studies. As I became more involved in gay rights advocacy, I began to wonder whether the legal system – with all its promises of justice – inhibited or instigated social change.

This wondering has emerged in my research and advocacy on marriage equality. To begin with, I am inclined to support reforms that guarantee formal equality before the law. I think it is safe to assume that many people share that general inclination.

In a country where marriage is governed by secular laws, it is troubling that religious opinion continues to be cited as a reason to deny same-sex couples the right to marry.

Marriage is a dynamic institution. The proposition that marriage is a ‘natural’ phenomenon ignores the fact that the institution has been culturally and historically mutable. No longer does the law regard the legal personality of women as ‘covered’ by that of their male spouses nor does it provide men with immunity from criminal laws if they rape their wives.

Marriage does not mandate procreation and it certainly does not guarantee it. Claims that children will be “forced” to have two parents of the same sex also ignores the current situation in family law that recognises same-sex families (with

**“We must not dismiss ‘lifestyle choices’ that do not mimic our own.”**

the exception of adoption in a few states). Even if marriage were solely designed to provide stability for children, why then deny this purported stability to children being raised by two men or two women?

There is also little “sanctity” in a marriage definition that forces transgender people to divorce before having their gender identity legally recognised, or erasing intersex people from recognition entirely.

In navigating the opinions of those opposed to marriage equality, the public is often implored to “respect” the views of both sides. Respect is seen as the currency of civil debate. However, there is nothing “respectable” about shielding bigotry from critical scrutiny. Arguing that same-sex parenting is child abuse or that it creates a new “Stolen Generation” is not a demonstration of respect (let alone historical accuracy). Using religion as a cover for claiming homosexuality is an illness or sin is demeaning. Vilifying people on the basis of who they are or whom they love is dangerous.

Rebuttals responding to these arguments in favour of “traditional marriage” are quite simple. Yet, on the flipside, I’m also sceptical about some of the broader claims about social acceptance that are made in the push for same-sex marriage.

Homophobic or transphobic violence, discrimination, vilification and harassment are sadly still pervasive realities for many people. Positioning marriage equality as the “major issue” (or worse, the “only issue”) queer communities face obscures other institutional forms of inequality.

Marriage equality does not provide refuge to transgender people who have been kicked out of home or have fled from domestic violence. Relationship recognition does not create inclusive classrooms or aged-care facilities that do not shame or stigmatise people for not being “normal”. Marriage does not stop us caging or returning asylum seekers to countries that criminalise homosexuality.

I do not wish to understate the enormously symbolic and emotional importance of marriage equality. I myself often fantasise about having a glitter-infused queer Hindu wedding. Yet we risk forgetting about the broader challenges for social justice by positioning marriage equality as the panacea for our homophobic ills.

In thinking about social justice, I am reminded of the people in our community who danced and rioted in the streets of Sydney in 1978 to resist moral persecution. They were

not fighting for inclusion in the existing social system – they were disrupting it. They helped to highlight that love, intimacy, and kinship manifests in bonds that go beyond conjugal heterosexuality. It was not about marriage then. It was about building liberated, thriving, and mutually supportive communities for all people.

So, as we start rethinking marriage laws, it is also important to rethink how we recognise relationships. Fortunately, in Australia, people do not need to be married to secure rights, entitlements and obligations as a couple. Yet the elevation of marriage as the relationship archetype erases the many non-marital relationships that are secure and loving. Some even characterise unmarried, non-monogamous, or single people as deficient.

In an effort to claim equality, we must not dismiss “lifestyle choices” that do not mimic our own. The tensions that emerge in my activist, advocacy, and academic pursuits on the matter are not easy to resolve. However, by being mindful and critical of these frictions, I find the space for justice and community very promising.

Senthoran Raj is an advocate and academic working in the areas of criminal justice, refugee law, legal theory, and human rights. He is currently completing his PhD and teaching at the University of Sydney Law School.

Follow Senthoran Raj on Twitter: @senthoran



***Sydney Morning Herald* news director Judith Whelan and BuzzFeed reporter David Mack only seem to come from opposite ends of the rapidly changing media spectrum.**

# Media's new breed

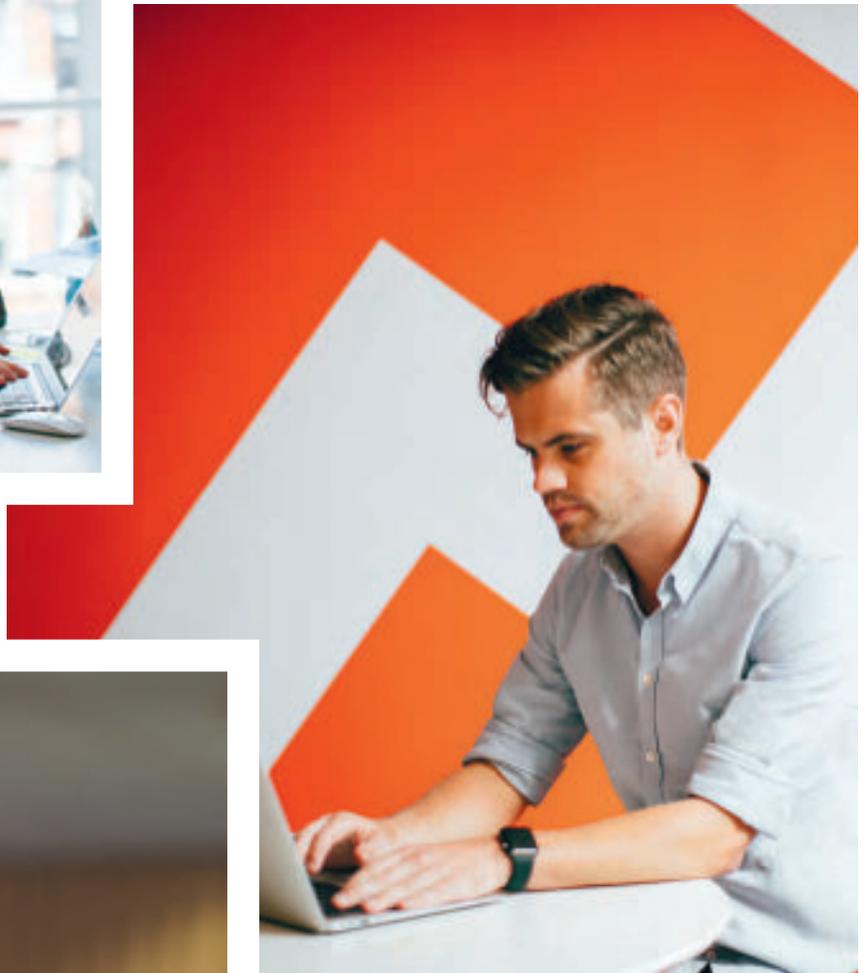
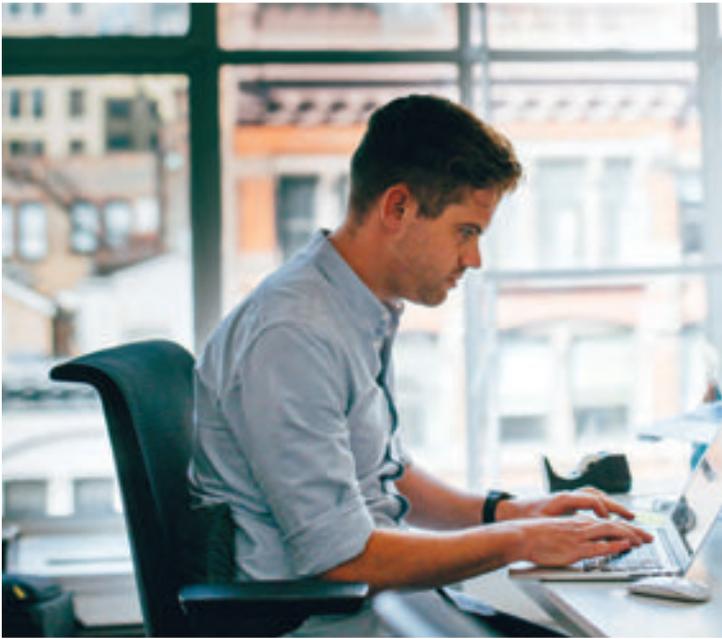
Written by Emily Jones (BA(Media&Comm) '12)

Photography by Courtney Tight BA(Hons) '12 and Wolter Peeters/Fairfaxmedia

Last July, a photo tweeted from the Royal Commission into Trade Union Corruption by one of Australia's most respected journalists went viral. Having been allocated a seat behind BuzzFeed staff, the host of the ABC's 7.30 current affairs program, Leigh Sales, responded to a tweet by a BuzzFeed reporter who joked about blocking her view. She posted a picture of her retort sticky-taped to the reporter's back: "I'm from BuzzFeed. Here are 10 ways I suck."

Though flippant, the tweets nicked a nerve at the heart of the Australian media between older, "legacy" outlets and the new kids on the online news block.

Buzzfeed's staple brand of amusing "listicles", personality quizzes and pop news coverage has recently shifted gears. This year the company was given a seat in the White House pressroom, and a BuzzFeed reporter now travels on Air Force One with the President of the United States of America.



Above: David Mack (Photography by Courtney Tight)  
Left: Judith Whelan (Photography by Wolter Peeters/  
Fairfaxmedia)

## JUDITH WHELAN, FAIRFAX MEDIA

If you'd tried to explain this series of events to the News Director of the *Sydney Morning Herald*, Judith Whelan (BA(Hons) '83 DipEd '84), just a decade ago, you would have been met with incredulity: "Things are just changing so rapidly that even start-ups that started two years ago have to change the ways in which they tell stories."



**“The old tenet has never changed – you’ve got to be curious.”**

Judith Whelan

Whelan is poised and alert when we meet at Fairfax's head office in Pyrmont, eyes shining brightly behind horn-rimmed glasses, despite the staggering 15-hour days she works – a prerequisite of today's unforgiving 24/7 news cycle.

Whelan recalls her years at Sydney with great affection, reminiscing on the Evangelical Union, running election campaigns and chalking footpaths until 3am in her successful bid to become the first female president of the University of Sydney Union. "I was a debater," she declares proudly. "I really got into life at university: I loved it and I was very involved. It has certainly been a basis of my working life, my five years at the University of Sydney."

After more than seven years editing *Good Weekend* magazine, Whelan became News Director of the *Sydney Morning Herald* in 2013. When she took the helm, it was at a time of unprecedented flux for the news industry. The print media's "rivers of gold" – classified advertising revenue – had turned into parched dustbowls. Readers fled online, hungry for glib content (often in the form of cute-animal GIFs) and the once proud broadsheets, with their lofty fourth-estate notions, had either shut up shop or downsized considerably.

So say the news doomsayers, quick to decry the death of print journalism. But Whelan isn't so convinced. She points to the *Herald's* coverage of the Sydney siege as just one instance in which established news outlets maintained the upper hand, with readers seeking credible coverage. "We had people around the world coming to the *SMH* to find out what was going on," she says. "Some of our competitors were going out with stuff that was up faster than we were, but some of them were wrong. We were making decisions based on that. Our integrity and credibility is something that we will not jeopardise."

As readers change their news consumption habits, media organisations have been forced to take note. A recent Pew Research Center study shows that 63 per cent of Americans now use Twitter and Facebook as their main news source, up from 50 per cent in 2012. The initial disparagement of online storytelling has given way to imitation, according to Whelan: "No idea is sacred anymore, no-one has ownership over these things anymore. We're telling stories with these too – quizzes, listicles, charticles, all these sorts of things that everybody now is going after – because that's how the audience wants to read things."

As for concerns over a decline in quality as news shifts online, Whelan rejects a binary divide between speed and hard-hitting reporting. "Journalism needs to be trustworthy, it needs to be telling you something new," she maintains. "All of these things are just as important now as they were in the old days of the newspaper landing with a thud on your lawn on a Saturday morning. What has changed is the different ways in which we tell stories."

For young reporters looking to blaze a similar trail, Whelan counsels: "The old tenet has never changed – you've got to be curious. Be interested in other people, be open to new things. But also be open to opportunities."

## DAVID MACK, BUZZFEED

One recent University of Sydney graduate who has heeded such advice is David Mack. The 27-year-old completed a combined Bachelor of Arts (Media and Communications) '11/Law '13 degree with a major in American Studies. After graduation he took up a series of reporting and producing roles at the ABC, including as newsreader at Triple J.

Fast-forward three years and he is a reporter and editor for BuzzFeed News in New York City. "I often have to call us 'Buzzfeed News' because I want to make it clear I don't work in the 'cat lists' side of the company," jokes Mack on a Skype call from a train in Long Island.

Mack represents the new breed of online journalist: skilled at working across platforms, often remotely, and with a keen sense of what readers want to share. He believes his liberal arts education has provided a firm footing for traversing the precarious 21st century media landscape.

"I loved [the course] because not only were you doing media, but you were combining that with an Arts degree," he says. "It helps make you a more fully rounded person. There was a real sense of academic freedom in the course to learn new things."

Though its news division operates much like established media outlets, Mack describes his entrance to BuzzFeed from the ABC as "like arriving on another planet".

"There's a sense of vibrancy and excitement about the work that everyone's doing – a feeling of possibility," he says. "We're really in uncharted territory and it feels like they've cracked the code for how to 'do' journalism in the digital age."

So is BuzzFeed just guilty-pleasure territory where the Kardashians reign supreme? Detractors slam online news outlets such as BuzzFeed for peddling "clickbait" – easily digestible yet insubstantial content that lures readers in with the promise of instant gratification but little edification.

Mack believes such critiques only serve to denigrate young readers' priorities. "There's a

very pessimistic view about young people today that they're only going to share stupid things," he says. "But we know that's not true and we've got the data to prove it."

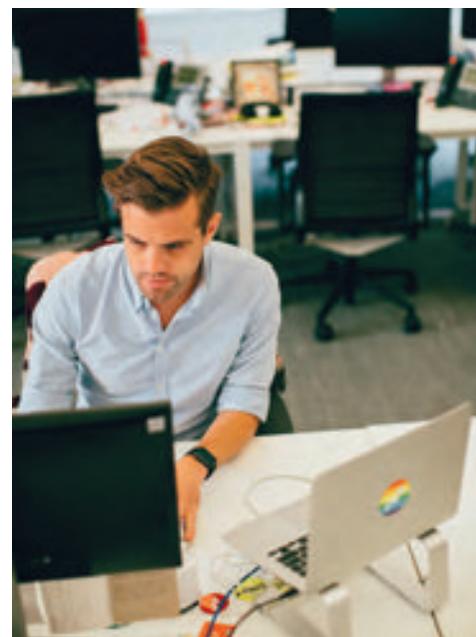
Mack's recent work has included covering race relations after the Charleston, South Carolina, shooting in June in which nine people died, and reports on the US Supreme Court's decision to legalise same-sex marriage, also in June. The popularity of such articles shows BuzzFeed readers want to engage with big issues, just in innovative ways, Mack says.

"I like to think of BuzzFeed as reflecting the spectrum of the internet. A lot of people use the internet for educational reasons, to find recipes or ways to get in shape. But a lot of people use it to get informed as well. I think there's a misconception that people of my generation aren't interested in things. We know that's not true – it's just that the platforms are changing."

Whelan agrees the challenge for media outlets young and old is to capture stories that resonate with people. "The old days of journalists saying 'We know what's right for you to read' are kind of gone," she says. "The audience is discerning, it's demanding, and it's great to interact with them."

And while readers may appear at odds with hard news principles, Whelan supports the online reporting styles of BuzzFeed, Quartz, Medium and Mic.com.

"Some of their news just cuts completely through because they are so clever at telling it in an accessible way," she says. "That isn't dumbing it down, it's just telling it in the most interesting way you can. If it actually reaches more people, and gives you a new perspective as well, I'm a big fan of it."



From the ovals of the University of Sydney to the global soccer scene, graduates Vicki Linton and Ante Juric are taking their sport to the next level.

# Lifting their game

Written by Kerry Little  
Photography by Football Federation Australia

The University of Sydney's Master of Education (Sports Coaching) is designed for elite-level coaches and experienced elite athletes seeking to become coaches. Vicki Linton (MEd '08) and Ante Juric (MEd '11) are two graduates who've done just that. They had just completed an exhilarating World Cup campaign with Australia's national women's soccer team, the Westfield Matildas, when they spoke to SAM.

## How do you work together to get the best out of the Matildas? What is your working style?

**Linton:** We each play a different role as part of the coaching team as directed by the head coach but we have similar working styles and therefore understand each other pretty well. We are both process orientated and task focussed, and like to work through things logically. Good communication, planning and organisation are also important.

**Juric:** Communication between the staff is imperative for success. We also need to be on the same page in terms of expectations of the team and the way team culture and play contribute to promoting a positive environment.

My working style is personable in terms of the players and staff. I have high standards of myself and of others and look to lead by example – by working towards the same high standards.

## You have deep experience in playing in, leading and supporting team sport. What are the key attributes of a winning team?

**Linton:** Strong team culture, good leadership, passion and hunger to win. Also, belief that we can win.

**Juric:** Belief, true confidence and ability, plus team harmony and spirit.

## How do you create and foster a strong team culture when working with so many talented individuals?

**Linton:** By developing strong leaders within the team and challenging each player to be the best they can be every day, on and off the field. You have to create an environment where players hold each other accountable.

**Juric:** I believe this is easier than some may think. Ultimately, everyone wants to be successful for themselves, for each other, for their families and for Australia. And in a team sport you can't win by yourself. So reminding everyone about the importance and privilege of wearing the national shirt is a key to creating a strong team culture.

## How do you think the Matildas' campaign for the 2016 Rio Olympics will progress?

**Linton:** The Matildas need to qualify at the Asian Olympic Qualifying Tournament in February 2016. While five teams represented Asia at this year's FIFA Women's World Cup, only two teams will qualify through to the Rio Olympic Games.

Australia has been in the final of the Asian Cup, along with Japan, in the last two tournaments (in 2014 and 2010) and we will go into the 2016 tournament with a lot of confidence and belief, following the World Cup. We will continue to play an attacking brand of football.

**Juric:** I have enormous belief in this team to qualify for the Rio Olympics. Firstly, because they are exceptionally talented women; and secondly, because they have a spirit, drive and dedication that I have rarely seen. Getting through the qualifiers is a tough task, but we're confident we can qualify as the top two nations in Asia to go through. With the average age of the team coming up to 23, we will be in a good place in many ways early next year.



Photo supplied by Vicki Linton



**Vicki Linton** is an assistant coach for the Matildas and a former football player who represented Australia and NSW. She has coached for the National Training Centre (NTC), Melbourne Victory W-League coach, and the under-16 and under-17 women's national teams. She graduated from the University of Sydney with a Master of Education (Coach Education) with Merit in 2008.

**Ante Juric** is a former professional footballer and currently Assistant National Technical Director and the national team's Scout/Analyst for Football Federation Australia. He graduated with a Master of Education (Sports Coaching), Elite Athlete Development and Skill Acquisition, from the University of Sydney in 2011.

Follow the Westfield Matildas on Twitter:  
[@TheMatildas](https://twitter.com/TheMatildas)

## NEW HOME GROUND FOR SOCCER CLUB

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**An extraordinary gift from Barry and Joy Lambert will revolutionise cannabinoid research – with the aim of alleviating symptoms of epilepsy and other chronic diseases.**

# A gift for Katelyn

Written by Hayley Bryce

Photography by Victoria Baldwin (BA '14), Nuran Zorlu and Sue Graham/Newspix

Three-year-old Katelyn Lambert has Dravet Syndrome, a rare and extreme form of epilepsy that starts from six months of age. Without any new treatments Katelyn faces a lifetime of seizures and moderate to severe mental retardation.

Watching her battle with the debilitating illness has inspired her grandparents, Barry and Joy Lambert, to give in the hope of new treatments: they have made an unprecedented and generous donation of \$33.7 million – the largest gift ever given to research at the University. It has established the Lambert Initiative, a multi-year research project to explore the powerful medicinal potential of the cannabis plant.

“The experience of our granddaughter has opened our eyes to the extraordinary possibility of cannabinoids treating not only her condition but a range of chronic illnesses

that often don’t respond to conventional treatments,” Barry Lambert says.

Momentum is building for cannabinoid research in Australia. In 2014 NSW Premier Mike Baird committed \$9 million for three clinical trials focusing on medicinal cannabis. In June this year, less than a week after the University announced the Lambert Initiative, the NSW Government committed a further \$12 million to establish a Centre for Medicinal Cannabis Research and Innovation. The Lambert Initiative will be one of the inaugural partners to work with the centre.

“We are at the tipping point of a global revolution that could see chronic, debilitating diseases treated in new ways,” says Professor Iain McGregor who, along with Dr David Allsop, Clinical Associate Professor Nicholas Lintzeris,



and Associate Professor Jonathon Arnold, is leading the Lambert Initiative.

The legal status of cannabinoids in Australia and around the world is undergoing rapid change. Many countries now allow the use of cannabis-derived products and in the United States, 24 states permit medicinal cannabis. Cannabis is even legal for recreational purposes in Colorado, Washington State, Alaska and the District of Columbia.

Canada was one of the first countries to allow medicinal cannabis, and it has been legally available in Dutch pharmacies since 2003.

In Australia, Queensland and Victoria will be joining the clinical trials instigated by the NSW Government and the Federal Government has agreed to work with the states and territories to share knowledge and information on

the appropriate use of products derived from cannabis for medicinal purposes.

The Lambert Initiative firmly positions the University of Sydney and Australia with the Netherlands, the US and Israel, which are leading the world in this new era of cannabinoid science.

One of the most important advances in cannabinoid science over the past few years, academics say, is the discovery that the human brain and body is immersed in its own cannabinoids – endocannabinoids.

“These play a key role in just about every physiological process we know about,” McGregor says. “Disruptions of this endogenous cannabinoid system may be involved in many disease states, from epilepsy to cancer, dementia and pain. Cannabinoids extracted from plants, or developed in



the laboratory, have the potential to restore equilibrium to damaged brains and bodies.

“There are more than 100 different cannabinoid substances in the cannabis plant, but only one is intoxicating. Our research aims to unlock the therapeutic potential of a wide range of cannabinoids. We suspect that there are two specific compounds that have exciting potential in treating paediatric epilepsy, but this requires thorough confirmation in cellular and pre-clinical studies.”

Positive results in such studies would lead to world-first Lambert Initiative clinical trials of these compounds in paediatric epilepsy, as well as the development of novel medications that share key structural properties in treating disease.

The initiative’s findings could result in a new era of treatment for many of society’s most debilitating diseases and conditions including cancer, obesity, chronic pain, dementia and mental health disorders.

“Ultimately we aim to optimise and introduce safe and effective cannabinoid therapeutics into mainstream medicine in Australia and beyond,” Allsop says.

“Through Barry and Joy Lambert’s altruism we can now invest further in the extensive clinical and scientific cannabinoid-related expertise at the University to achieve major advances in cannabinoid-based therapies,” he adds. “It allows us to bring forward a series of strategic steps to produce innovative clinical outcomes within the shortest possible time frame.”

Arnold agrees: “The gift will accelerate cannabinoids through the drug development pipeline to ultimately relieve the suffering of patients. Without it, many important therapeutic applications would be left on the shelf, never to be realised.”

However, for any form of cannabis to be approved for medicinal use in Australia, an application must be made to the Therapeutic Goods Administration (TGA) with supporting data to assess its quality, safety and efficacy. Currently, many promising cannabinoids do not have the

“We are at the tipping point of a global revolution that could see chronic, debilitating diseases treated in new ways.”

Professor Iain McGregor



Above: Professor Jonathon Arnold (Photography by Victoria Baldwin)



Left: Professor Iain McGregor and Dr David Allsop (Photography by Victoria Baldwin)

Below: Barry Lambert (Photography by Nuran Zorlu)

Far left: NSW Premier Michael Baird, Dr Michael Spence, Professor Iain McGregor, Dr David Allsop, Nicholas Lintzeris and Barry and Joy Lambert address the media following the gift announcement. (Photography by Nuran Zorlu)



required preliminary data required by the TGA to enable clinical trials to take place.

Lintzeris explains that the Lambert Initiative will undertake both pre-clinical and clinical studies to develop a concrete base of evidence. “Pre-clinical work will help reveal the mechanisms of cannabinoids on disease states,” he says.

“Understanding the mechanisms involved will help determine which cannabinoids (or combinations) should be prioritised in clinical studies for various conditions.”

The aim of this rigorous, systematic approach is to generate evidence that has the power to change opinion and policy. It will create a platform from which to advocate for change and ensure that patients who would benefit from medicinal cannabinoids in Australia gain access to a safe and secure supply of medicines without fear of legal recrimination.

“We could start seeing results in as little as three years,” says McGregor. “The Lambert Initiative is a game-changer for the health sector.”

Find out more at [sydney.edu.au/science/lambert](http://sydney.edu.au/science/lambert)

It's more than a year since we officially opened the Charles Perkins Centre research and education hub. SAM profiles two of the unusual research projects already underway.

# New take on age-old questions

Written by Katie Szittner (BA (Media & Comm) '11)  
Photography by Victoria Baldwin (BA '14)

At the Charles Perkins Centre researchers, teachers and students from across the University have come together under the one roof to pursue real-world solutions for the global epidemics of obesity, diabetes, cardiovascular disease, and their related conditions.

Two of the centre's unique projects focus on very different but fascinating questions - how can dog ownership benefit human health and what are the secrets to healthy ageing?

## MUST LOVE DOGS

Any dog owner can tell you how their dog makes them feel when they walk in the door. There is something deeply affecting in the pure, unbridled, undignified joy a dog shows at little more than seeing its owner, even if you've only been gone an hour.

Humans have been basking in the unconditional love of their dogs for more than 10,000 years. Dogs have been awarded full military honours, are employed throughout the human workforce and have their own film awards. Dogs belonging to presidents of the United States have long enjoyed

a higher profile than members of staff, and popular culture all over the world is peppered with Lassies, Fidos, Red Dogs and Rin Tin Tins. Loukanikos, the stray dog that faithfully attended protest demonstrations in Athens, was named *TIME* magazine's Person of the Year in 2011.

Science, however, has been less forthcoming on the benefits of dog ownership. Fragmented research has indicated the benefits of dog ownership on health, and in particular on physical activity through dog walking, but it has so far failed to provide a cohesive body of evidence on the extent of these benefits, and how and why they occur.





Manos with his dog Rozi

A new research node at the Charles Perkins Centre hopes to fill this gap, shedding light on not only how dog ownership influences human health, but also how these benefits could be harnessed as part of our healthcare system.

Created in collaboration with the Royal Society for the Prevention of Cruelty to Animals (RSPCA) NSW, the node brings together experts in public health, physical activity and exercise, disease prevention, behaviour change, health psychology, human-animal interactions, and canine health.

“We know that dogs can be a catalyst for physical activity, which is

of course a major health issue in our society, but dog ownership can also address social isolation – the lack of connection between humans,” says Associate Professor Manos Stamatakis of the Charles Perkins Centre and the Faculty of Health Sciences, who leads the new node.

“What we want to understand is why these benefits occur. Is it because of the ownership itself, or because there is another mechanism that mediates this, like walking or companionship?”

The node is one of the world’s first coordinated, comprehensive research efforts in the field, and is the first to make interventions in human

health its top priority. With one of the highest rates of dog ownership in the world, Australia is uniquely positioned to take advantage of any correlating health benefits.

“We know between 30 to 40 per cent of Australian households have a dog, and we know about two thirds of those dogs are under-walked,” says Professor Adrian Bauman, a public health expert at the Charles Perkins Centre and the University of Sydney Medical School, who pioneered research on the benefits of dog walking to human health.

“Intervention is critical,” Bauman says. “Can we actually change dog

owners? Once you have a dog you're more likely to be more active, but can we get people with dogs to walk their dogs more? Dog ownership is a great opportunity to get people moving, and that's good for human health.

"No matter what time you get home, no matter how tired you are, the dog always wants a walk and is always enthusiastic to do so. It's a wonderful mechanism for building physical activity into our sedentary lives."

For Bauman, the academic side of dog walking opened up some 16 years ago thanks to his own dog, Schroeder.

"Schroeder would bark at other dogs who were behind fences, and I interpreted that as him asking why those dogs weren't out walking like we were. He stimulated my research enquiry."

When Bauman's subsequent research paper was published in the Christmas edition of the prestigious *Medical Journal of Australia*, Schroeder was listed as a co-author. The editor of the journal was so charmed by this that he bumped Bauman's picture in the publication and replaced it with a picture of Schroeder.

For Stamatakis, the conversion to dog lover has been more recent and, somewhat improbably, was the result of a Jack Russell's "accident" in his kitchen.

Having reluctantly allowed his then-partner's dog Rufus into his apartment, Stamatakis returned home unexpectedly late to find an uncharacteristically subdued Rufus and a nasty surprise on his kitchen floor.

"He was sitting there in the corner of the hallway staring at the floor, ashamed, embarrassed, upset because he let us down. I knew that he was genuinely upset and it was like an instant connection. It felt like a Eureka moment for me," Stamatakis says.

"I said 'I have underestimated this creature. What have I been doing all this time? How have I been so stupid?'"

Although Stamatakis was initially indifferent to dogs, there are many who are unequivocally convinced of their health benefits.

The benefits of pet ownership are clear to RSPCA NSW's Executive Manager of Animal Care Services, Brendon Neilly, every day.

"We are good at identifying the benefits to animals as an organisation, and though we recognise the human benefits, we've never been able to put our finger on what they are apart from qualitative points of human wellbeing," Neilly says.



"Our partnership with the University on this project will, we hope, validate all of that qualitative information. We'll be able to say that this isn't just an anecdote, this is a real genuine value, a quantitative measure of the human-animal bond backed up by science."

Beyond the physical benefits of dog owners' increased activity, the research team hopes to clarify the psychological and social benefits of owning a dog, which become increasingly important in an ageing population.

"We know that with older age comes increasing isolation, and with that comes loneliness," Stamatakis says. "It's a major cardiovascular disease risk factor, it's a major cancer risk factor, and it's a major risk factor for depression."

"One aspect of human isolation can be addressed simply by owning a dog, because of the companionship and unconditional acceptance and love and other things that humans often do not get from other humans."

"The second aspect is that the dog can be a catalyst to tighten human social connections and increase connections."

Neilly agrees: "There are enormous benefits for animals and people in terms of social connections. If you're walking down the street and a person says hello it can be a bit weird, but if someone stops to pat your dog that's an instant social connection."

With scientifically backed data on these benefits, a path could be cleared for dog ownership as part of the human healthcare system.

"We could say to people like public transport providers, rental accommodation owners, local governments, nursing homes and community groups that it's not just anecdotal and it's not just about letting people keep pets," says Neilly.

"If we can demonstrate a physiological measure, a genuine value, we can make real improvements to quality of life. And that's for both owners and pets."

Follow Professor Stamatakis on Twitter: @M\_Stamatakis

## LIVING LONGER

Finding a cure for ageing has fascinated human beings for as long as we've been aware of our mortality. The ancient Chinese sought a fabled mushroom of immortality, the ancient Greeks searched in vain for ambrosia, and medieval alchemists the world over prepared potions of mercury, gold, jade and arsenic with unsurprisingly dire results.

Thousands of years later, with the elixir of life still evading our grasp, many of us put the secret of longevity down to the mysterious theory of "good genes".

Genetics, however, accounts for only a small fraction of how we age and how long we live, according to Professor David Le Couteur, an international authority on ageing at the Charles Perkins Centre.

"The thing about ageing is that it is for the most part related to lifestyle and environment," Le Couteur says. "Only about 20 percent of ageing is caused by the genes you are born with,

and the rest is due to an accumulation of things that you do to yourself during your lifespan."

The classic example, he says, is in Okinawa, Japan, famed for having one of the world's longest life expectancies. Okinawan families who move to the Western world experience a change in diet and exercise that reduces their life expectancy by nearly two decades. Genetics is not the reason for their longevity, it's above-average daily exercise and below-average food intake.

"Unfortunately, this means that good health as you get old is a responsibility – you can't really expect to get to the age of 70 with a body mass index of 40 and having smoked three packs [of cigarettes] a day, eaten fatty foods and consumed huge amounts of alcohol," Le Couteur says.

The key to healthy ageing, he adds, is mundane: don't smoke, get plenty of exercise, eat a healthy diet and listen to your family doctor.

However, scientists are now finding that the biological processes underlying the mundane mantra of diet and exercise could hold the secrets to healthy ageing we've been seeking for millennia.

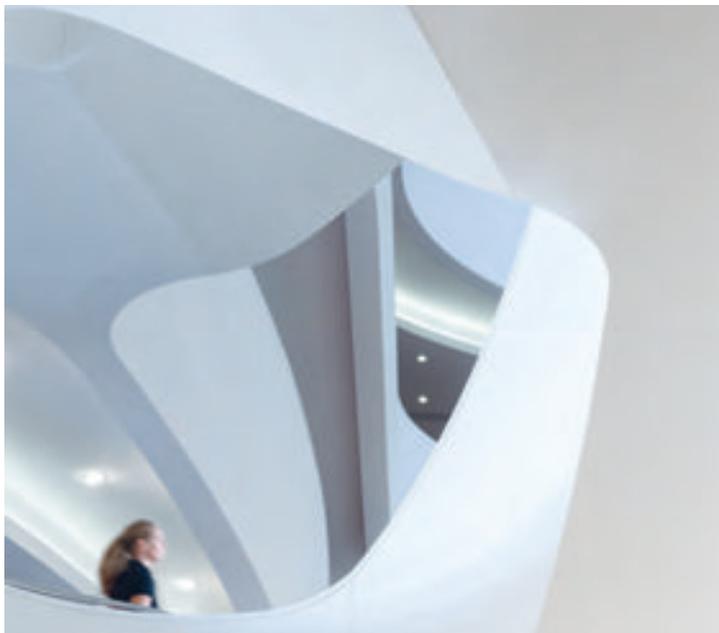
What we eat, how we exercise and, fascinatingly, how cold we get, could unlock healthy ageing at its root cause, within the cells of our bodies.

"Diet is one of the main factors that influences how we age: the main thing in biological research that has been shown to prolong life is caloric restriction, which involves reducing food intake by around 20 to 40 per cent," Le Couteur says.

"Unfortunately there's probably only a few dozen people in the world who are able to restrict their caloric intake deliberately down to that level.



The Charles Perkins Centre



It's also been shown to have negative effects on things like libido, fertility and bone density.

Together with the Academic Director of the Charles Perkins Centre, Professor Stephen Simpson, and a multidisciplinary team of exercise physiologists, biologists, nutritionists and geriatricians, Le Couteur recently found that a low-protein, high-carbohydrate diet could replicate the benefits of caloric restriction without the need to reduce food intake.

"We've done a lot of work that has shown macronutrient balance in diet – the ratio of protein, carbohydrates and fat – is a key factor that can influence the rate of ageing," Simpson says. "The big unanswered question now is what is the role of energy expenditure?"

While a carbohydrate-filled panacea of spaghetti and sourdough sounds appealing, the unfortunate consequence of the low-protein, high-carbohydrate diet is that it leads to overeating and therefore to weight gain. This means we must also find a way of avoiding obesity and its myriad of consequences for health.

"As you reduce the ratio of protein to carbohydrates you get a range of beneficial metabolic and ageing effects, but you also need to manage the excess calories that you'll inevitably eat," Simpson explains. "You either burn them off through physical activity, or potentially you can burn them off by a process of what's called wastage metabolism or mitochondrial uncoupling – burning off excess calories without exercise."

Wastage metabolism occurs on a cellular level, with our mitochondria – the energy factories of our cells – producing heat from excess energy instead of storing it as fat.

Until recently, scientists believed



Professor David Le Couteur

wastage metabolism was only possible in babies, with adults no longer possessing the brown fat cells that play home to the process. It is now understood that adults retain brown fat cells, opening a world of possibility to manipulate diet-induced heat production as a means of weight loss.

"By adding wastage metabolism and exercise to the equation, we are turbocharging the health and ageing benefits of the low-protein, high-carbohydrate diet," Le Couteur says.

"The temperature of our environment might contribute to becoming overweight. Being in a cold environment for a sustained period of time drives wastage metabolism, so this is another environmental way that we could promote health."

Unfortunately for many of us, the temperature is often controlled throughout the day – at work, in the car

and at home. It's a phenomenon that's known as indoor climate change.

"If you look at overweight and obesity in simple energy-in, energy-out terms, exercise and energy expenditure is only a small part of the problem. The major problem has been eating too many calories," Simpson says.

Even so, indoor climate change might prove to be a dark horse in the obesity epidemic.

"We all know that exercise is good for us, even if it isn't the most efficient way of burning excess calories," says Simpson. "This other form of energy expenditure that's going on all the time through wastage metabolism is potentially far more interesting."

Find out more about these and other projects at [sydney.edu.au/perkins](https://sydney.edu.au/perkins)

## AMELIA FARRUGIA

Amelia Farrugia (BMusEd '93) is one of Australia's brightest opera stars. She has performed in Australia and overseas with a host of distinguished conductors. In October Amelia returns to the Sydney Conservatorium of Music to feature in the Con's centenary festival. She shares some insights into her life behind the scenes.

Find out more about Amelia at: [ameliafarrugia.com](http://ameliafarrugia.com)

Opera Queensland's *Candide* - Image by Stephanie Do Rozario



# MY FAVOURITE



## PLACE

Balmoral Beach in Sydney has been my home for several years and I never want to move, it is paradise on Earth. Whenever I come home from my travels, I feel blessed.

## FILM

*Bridget Jones's Diary*

I know how she feels! I adore a great comedy, and *Bridget Jones's Diary* is an absolute gem that has timeless appeal.

## MUSIC

Bernstein's *Candide*

I'm currently performing in the role of Cunegonde for Opera Queensland. The musical score is pure genius.

## BOOK

*The Nightingale* by Kristin Hannah

This book is centred on two sisters in France during World War Two, one struggling to survive in the countryside, the other joining the Resistance in Paris. (*New York Times* Bestseller)



## GADGET

My iPhone 6 travels with me everywhere I go and my whole life is on it, so I don't know what I would do without it!

## FOOD

Chocolate! Enough said. (I was sent a basket of chocolates after my first performance in *Candide* for Opera Queensland).

Our alumni are leading social enterprises that are changing lives worldwide, like Pollinate Energy, which improves the lives of India's urban poor by illuminating the slums.

# Bright futures

Written by Kerry Little  
Photography by Peter Bennetts

## KATERINA KIMMORLEY

University of Sydney graduate Katerina Kimmorley (BCom LibStud '10) tells an ironic story about the seed funding for Pollinate Energy, the social business she co-founded in 2012.

"I was working as a climate change adviser for the NSW Government – it was a fantastic job and we were doing really amazing work on huge solar projects," Kimmorley says. "However, after the 2011 election, the new state government changed the approach to climate change mitigation. I lost my job but the redundancy payout allowed us to start Pollinate Energy."

That seed funding led Kimmorley to Bangalore in India, and a survey of poor, urban communities, to ascertain their willingness to pay for renewable energy products. She worked with two other University of Sydney graduates, Jamie

Chivers (BEc '08) and Monique Alfris (MCom '10), who also had renewable energy expertise. "We had been talking for quite a while about the importance of renewable energy, rather than



traditional energy sources, for people in countries with large populations," Kimmorley says.

During two months in Bangalore in 2012, they visited slum communities to assess their energy needs while investigating product design and pricing that would be sustainable and scalable. "We had run a trial and we knew people were desperate for these products," Kimmorley explains. "We also had a business model we thought would work."

The trio was conflicted about continuing with the project because each had other career opportunities waiting. "We started something but needed a strong signal that we should continue it and forego other opportunities," Kimmorley says.

"Jamie and I flew out of Delhi but when we looked out the plane window, instead of seeing the lights of a large metropolis there was darkness. I discovered I had been flying over northern India while it experienced the world's largest blackout – 700 million

people, 10 percent of the world's population – had lost their access to electricity. Media reported the blackout, but missed what I considered the real story: that every night in India, 300 million to 400 million people live without access to electricity. The blackout was our 'sign' to continue our work there."

They returned to India, and with two like-minded friends, Emma Colenbrander and Ben Merven, co-founded Pollinate Energy, a social business that seeks to provide affordable access to sustainable technologies, in particular solar energy, in slum communities. Pollinate's products are sold and distributed by "pollinators", local people who work closely with slum communities and introduce sustainable energy products. They also offer fellowships to young international and Indian social entrepreneurs.

Getting the first light into a community can take months, Kimmorley notes. "Then there is a domino effect when people see how transformative and affordable it is. You can say a thousand times over that turning on a light completely transforms someone's life. But the true meaning of that statement comes when you see the elation of each family member when they turn on a light, charge a phone, or play a song.

## EMMA COLENBRANDER

Emma Colenbrander (BIntStud '11 LLB '13) is getting used to the rhythm of a different Indian city. Usually based in Bangalore, she is currently in Kolkata, running Pollinate Energy's first fellowship program there. She is joined by a team of 10 international and five Indian volunteer fellows who are spending four weeks mapping the slum communities in the city to gauge slum dwellers' potential to switch from kerosene to solar lighting.

The fellows first identify where slum communities are likely to be. They look at waterways, railway lines, and close to markets – the areas slums tend to congregate. They then map the location of the communities



and conduct baseline surveys with slum dwellers using a customised Salesforce application.

"We create a holistic picture of what the city looks like in terms of slum population," Colenbrander says. "We ask: what is their income, their job, their access to clean water? What do they use

**“The impact of  
a solar light  
on the life of  
someone living  
in poverty  
cannot be  
overestimated.”**

for lighting and how much do they pay for it? What do they use to cook? Our survey enables us to assess their needs and their income, so we know which solar products they need and how much they can afford to pay."

Colenbrander credits the diversity of intern experience gained during her law studies at University of Sydney as a catalyst for her chosen career. "I was an intern at the Refugee Advice Casework Service, the Aboriginal Legal Service, and Amnesty International, each experience sparking my passion for social justice. I may not have known where I wanted to land

after uni, but I gained a taste for different opportunities."

Colenbrander's path is now firmly in development and social justice. Kolkata is the third Indian city within which Pollinate Energy is working to alleviate energy poverty. In slum communities in Bangalore and Hyderabad where projects are more advanced, close to 9000 solar lights have been installed, benefiting more than 40,000 people.

In Kolkata, slum communities are entrenched through generations. "Nearly every family I have spoken to has either been born into the slum, or has lived there for more than 25 years," Colenbrander explains.

Some families spend 50 percent of their income on kerosene, which would offset the cost of a solar light within three months. "Solar is going to make a particularly huge impact on their lives as they will be able to save such a large proportion of their household income," says Colenbrander. "While it's tough to see the conditions they live in now, it gives me a lot of hope that Pollinate can make a really strong difference in this city.

"I really do feel that access to energy is a basic human right yet there are 1.2 billion people in the world who are denied that right.

"The impact of a solar light on the life of someone living in poverty cannot be overestimated. I once had a customer tell me that because of the solar light she finally felt like a human being."

Emma Colenbrander is Co-founder and Chief Sales Officer at Pollinate Energy.

[www.pollinateenergy.com](http://www.pollinateenergy.com)



Photo supplied by Annabelle Chauncy

Working on an aid project while studying for a law degree inspired alumna Annabelle Chauncy to set up the School for Life Foundation to educate disadvantaged children.

# Life lessons

Written by Kerry Little

Photography by Victoria Baldwin (BA '14)

After 48 hours travelling from Uganda to Sydney enduring numerous flight delays and a missing bag, Annabelle Chauncy (BA '07 LLB '10) sounds surprisingly calm. But, as she points out, one of the key skills she needs for working in Africa is patience.

In 2007, when she was 21 and studying law at the University of Sydney, Chauncy worked on an aid project for three months in Kenya and Uganda. While there, she travelled to Tanzania, to the School of St Jude, which was founded by Australian Gemma Sisia. "When I saw that Gemma had built a school that looked just like a school in Australia, I thought 'if this Aussie woman can do it, I can do it too'."

The following year, Chauncy and David Everett, a fellow university student she had met while in Africa, created the School for Life Foundation, a not-for-profit organisation focused on making a transformational difference within communities of emerging countries through providing access to a quality education.

Fuelled by enthusiasm and, Chauncy notes, "a little bit of naiveté", she and Everett set out to build a school. "I certainly didn't start the project with a full understanding of what I was getting myself into, but that's possibly the best approach. At the time, I had half a law degree behind me so I had skills to set up the company and start to develop the business. It continued to develop organically."



Annabelle Chauncy divides her time between Sydney and Uganda, spending up to three months each year in the African country.

**“The school has made a huge difference in the lives of more than 1000 people.”**

Chauncy attributes the school’s early success to her community of students at the University of Sydney. “I went to Sancta Sophia College and they have been strongly engaged in our work,” she says. “My friends from different colleges across campus really kick-started School for Life. All these young university students with passion and nowhere to direct it got involved.”

Chauncy has benefited from the experience of leaders from a broad range of fields. “Obviously at the age of 21 we didn’t know anything,” she says. “We had to beg, borrow, steal – ask anyone who had expertise to help us. We started to pull this web of people from different sectors, and from the outset developed a strong board of directors, which has been pivotal in the development of the organisation.

“Gemma Sisia is seven years ahead of us with her school and her advice has saved us from making mistakes. I also have a strong cohort of female leaders around me from a range of professions.”

Chauncy’s mentors include: a partner at professional services firm EY, a neonatologist at Westmead Children’s Hospital and the principal of Granville Boys High school. “These three women are exceptional in their fields and add different elements to my knowledge and understanding of what I am doing,” she says. “They are amazing professionally and personally and have helped me to strategically manage the stress and the workload that come with running School for Life.”

Chauncy isn’t deterred by the challenges of creating and managing a foundation in a developing nation. “I need challenges in my career to keep me inspired and roadblocks are one way of keeping me on my toes. Having to constantly problem-solve and find different ways of making things work is a form of continuous learning.”

The school provides three meals a day for the students – breakfast, morning tea and lunch – which, Chauncy explains, are a major “selling” point. “We thought it might be difficult to maintain our enrolment as children are seen as an asset to the family as they can work on the farm,” she says. “But many families aren’t able to feed their children properly and they can see that, by coming to school, their child’s nutrition and growth levels are much higher.”



Photo supplied by Annabelle Chauncy

Chauncy and Everett have started a monitoring and evaluation study that will provide data on the impact of nutrition on learning. “When kids first come to us they have ringworm, poor energy levels and their concentration is low. Once they have a varied and well-rounded diet, the change is incredible,” Chauncy says. She is now fully responsible for funding the entire operation, which raises more than \$1 million each year. She spends much of the year in Australia fundraising, which has cut her time in Uganda from six months to up to three months a year, with Everett spending more time there.

Chauncy advises people who wish to start a social business in Africa to be patient and well informed. “It can be slow and bureaucratic, so really do your research and development and know the community you are working with,” she says.

“We have achieved a high level of community consultation that enables local people to completely own and run the school. We are not Western run. We use local people to do everything, including security, cooking, cleaning and teaching. This creates a sustainable model that can continue without us if necessary. The school has made a huge difference in the lives of more than 1000 people, so

seeing the change on the ground makes it easier to continue with passion.”

School for Life Foundation is entering its eighth year with plans for another primary vocational school and a secondary school.

The foundation aims to create long-lasting change through education. “Education is something that cannot be taken away from people,” says Chauncy. “We’ve created a model that can be replicated across the developing world. At this stage we are focusing on what we’ve created in Uganda but there has been talk of schools in other countries.”

**Annabelle Chauncy OAM is the Founding Director of School for Life Foundation (SFL). Her role includes management in Australia and Uganda of fundraising and sponsorship, marketing, media and events. She has raised more than \$3 million in five years. [schoolforlife.org.au](http://schoolforlife.org.au)**



From a family discussion to a successful non-profit organisation, Fighting Chance has come a long way in evening the odds for people with disabilities.

# Willing and able

Written by Kerry Little  
Photography by Victoria Baldwin (BA '14)

In 2009, Jordan O'Reilly (BAppSc(OccThpy) '13) and his sister Laura travelled overnight by bus through the French Alps. As the bus wound around the snow-lined mountain roads, they talked about how they could help their younger brother Shane, who had cerebral palsy, to work and live independently.

Their conversation led to a big idea, and an ambitious goal: to establish a non-profit organisation that creates innovative training programs and social businesses for young adults with significant disabilities. Fighting Chance Australia is the realisation of this goal.

Jordan O'Reilly laid the groundwork while completing his degree in occupational therapy at the University of Sydney. "Occupational therapy is a very practical degree, which teaches an incredible array of problem-solving skills," O'Reilly says. "Studying at the University of Sydney really fuelled the growth behind Fighting Chance."

He gained experience through a wide range of work placements during his degree, working in various Australian cities, including a paediatric setting, a mental health facility, a public hospital and a private hospital. "Training in occupational therapy lends itself very well to starting up an organisation in the disability sector," he says.

Fighting Chance now runs two social businesses – Avenue and Jigsaw – which offer work opportunities to people with disabilities. They adopt a 'work hub' model, which considers the challenges of the built environment for people with disabilities and provides a welcoming, accessible and supportive place where they can contribute their skills

in meaningful ways. The two businesses currently offer placements to around 60 people with a range of disabilities.

Avenue specialises in fair trade retail, importing products created by people with disabilities all around the world, and selling through an e-commerce store and community markets. Its core purpose is to offer vocational placements to people who otherwise don't get a chance, due to their disability.

Jigsaw provides socially responsible outsourcing services, particularly in the areas of document management, information audit and paperless office services. It partners with corporate and government organisations to secure contract work, and is focused on supporting people with mild disabilities who find it challenging to access jobs.

"Jigsaw offers employment, training and skills development to help our participants build the skills and experience they need to either get back into work or start their careers in a supportive environment," O'Reilly explains.

"It has been fantastic to receive support from the community to create opportunities that help people with disabilities enter the workforce."

**O'Reilly is a board member responsible for operations and culture at Fighting Chance Australia, and his sister Laura plays a pivotal role as CEO. The organisation's major fundraising event is the Tour de Chance corporate bike ride, which will next be held in mid-2016. [fightingchance.org.au](http://fightingchance.org.au)**

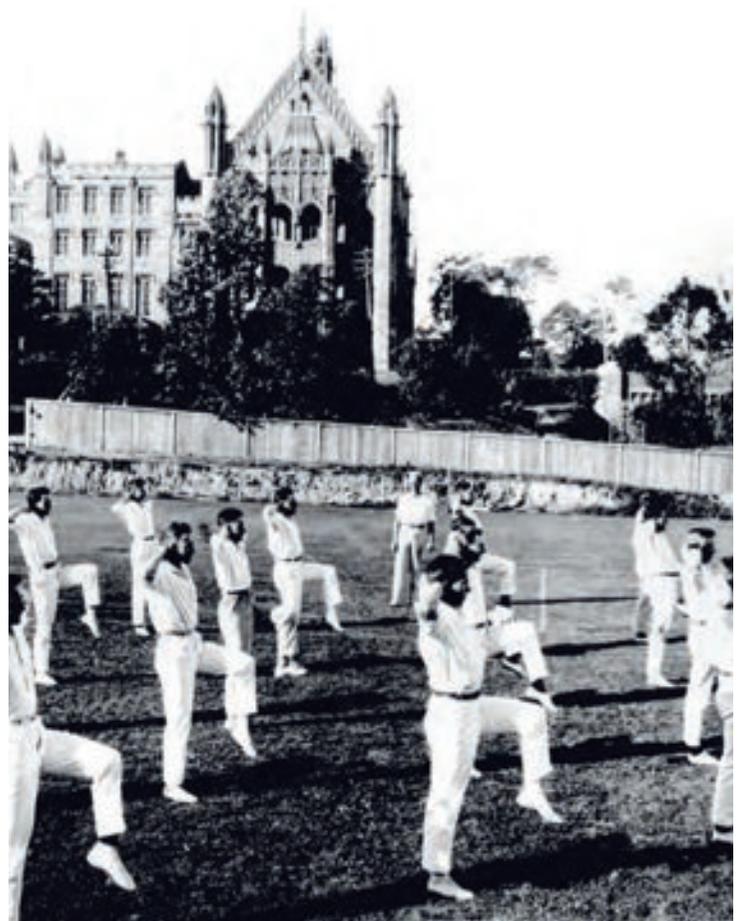
Jordan recently received the University of Sydney Young Alumni Award for his dedication to improving the lives of young Australians with disabilities. Find out more about this year's Alumni Award winners at [sydney.edu.au/alumni/awards](http://sydney.edu.au/alumni/awards)

## UNIVERSITY THROUGH THE LENS

The more things change, the more they stay the same. Technology, equipment, learning and teaching facilities have evolved dramatically since the University began 165 years ago. However, the Quadrangle and its iconic jacaranda tree have always been a source of admiration and inspiration for the University community and thousands of visitors to our Camperdown/Darlington Campus each year. It is a hub of activity for our next generation of leaders – here they study, rest and exchange ideas that enrich their experiences with us. The other constant is our students' dedication to gaining new knowledge and skills that will equip them to change lives in Australia and across the globe.



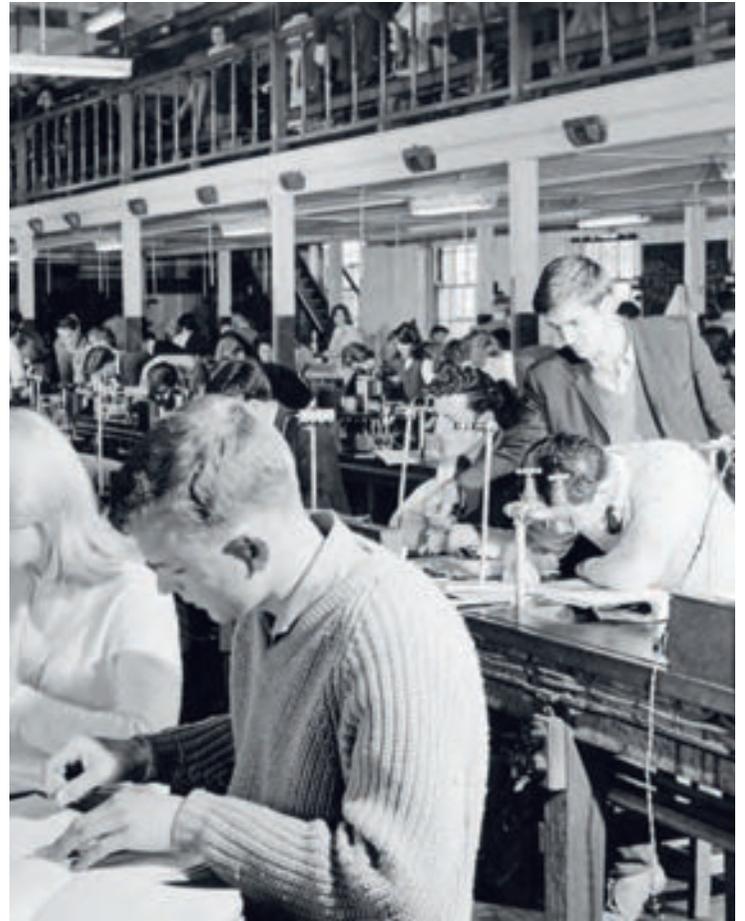
Students practising yoga in the Quadrangle, 2009.



Male students doing a physical drill, 1923 (Ref: G3\_244\_0552), courtesy of the University of Sydney Archives.



Veterinary science students in the recently built Charles Perkins Centre, 2014. Photographer Louise Cooper.



Physiology class in one of the physics laboratories, 1960 (Ref:G3\_224\_0856\_1), courtesy of the University of Sydney Archives.



A lecture in the Charles Perkins Centre auditorium, 2014. Photographer: Louise Cooper



Students in class at Hereford House (Glebe Point Road) used by Sydney Teachers College, 1910 (Ref: G3\_224\_2197\_2), courtesy of the University of Sydney Archives.

**Studying at Sydney was transformative for acclaimed novelist Geraldine Brooks. ‘I found my tribe,’ she says. Now she has a Pulitzer Prize and her fifth novel has just been published.**

# Brooks on books

Written by Caroline Baum  
Photography by Erik Jacobs

It's late on a summer afternoon when *SAM* finds Geraldine Brooks (BA '79 DLitt '07) in her writing room at home on Martha's Vineyard, Massachusetts. The Pulitzer Prize for fiction she won in 2006 for *March* sits on the sill of the tall window behind her. "It's a faceted lead crystal so it throws the light spectrum across the room," says Brooks, holding up to the light an object that resembles a paperweight.

Next to the Pulitzer is a more obvious-looking award, a sharp-pointed metal statuette. "That is the Dayton Literary Peace Prize Lifetime Achievement Award," she says, brandishing it like a weapon. "I keep it handy in case of a home invasion," she adds, demonstrating its serious heft with a characteristic giggle. Despite the seriousness with which she approaches her work, Brooks has never lost her sense of fun.

She is on the brink of undertaking an author tour to Australia in November to promote her latest novel *The Secret Chord*, about biblical character King David – about whom surprisingly little is known beyond his legendary struggle with the giant Goliath.

Brooks returns home every Australian summer to visit her family, "but never for long enough", she says, because her youngest son, Bizu, is still in school. She has the eldest, Nathaniel, to thank for sparking the idea that resulted in *The Secret Chord*. "In 2005 at the age of nine he suddenly announced that he wanted to learn to play the harp. And that set me thinking about that long ago other harpist who was also a famous warrior and a sometimes infamous womaniser," she writes in the book's foreword.





For each of her five historical novels, Brooks adopts the same methodology of intense research, inhaling everything she can read “to find out what they ate or wore or how they fought”, she says. “I am bound to the facts as far as I can know them. In this case, I was surprised to discover that in 1000 BC they did not ride horses. It felt odd having a king like David ride a mule, but I couldn’t lie.”

And so, in a curious parallel, the prophet Natan, who relates David’s story, goes about it exactly as Brooks herself did as a foreign correspondent in the Middle East: by talking to the women associated with men of power.

Although Brooks has well and truly left her journalistic career behind, she keeps a seasoned veteran’s eye on the events of that troubled region. Would she want to cover it

## “I am bound to the facts as far as I can know them.”

Her task was made more difficult when it came to capturing her characters’ voices (normally achieved through this same rigorous fidelity to original sources), “because in this case they simply are not there – outside the Bible, David has left little trace,” Brooks says. “As for the women: in the Bible, they are generally referred to as someone’s wife, or someone’s sister or mother. The fact that his wives Mikhal then Avigail are mentioned by name shows that they had some agency, some status – and that interested me.”

now? “I would be tempted if I were not a mother, especially the conflict in Yemen, which is not being given the attention it deserves. But it’s much harder now. When I was there, you could be in the wrong place at the wrong time and get hurt but now the danger is different and greater – not of being in the line of fire, but of kidnapping and having your head cut off.

“But yes, even now I think that women can move around in those places less obtrusively: extremists don’t look closely

at other people's women and the niqab is a useful disguise. My Arabic is rusty but I could still choke my way through a conversation on weaponry and human rights," she says with a dry laugh.

She thanks her rabbi in the acknowledgements in *The Secret Chord*, describing herself as an atheist who converted to Judaism when she married fellow author Tony Horwitz. "My Judaism is about history not about faith," she explains, while acknowledging that a recurring theme in her more recent novels is "what religion does to people". She and Bizu spent a fortnight in Israel researching the book's locations but Brooks admits that her Hebrew is pretty terrible.

At the University of Sydney, Brooks studied for a Bachelor of Arts specialising in government and fine arts. "I loved my courses, especially because we had quite a few tutors who were displaced Americans fleeing the draft," she says. "So when it came to teaching us about ethics and the politics of violence, they had thought deeply about it."

When she graduated, Brooks joined the *Sydney Morning Herald* as a cadet. "I thought that I had the world pretty well covered but of course they sent me to write about horse racing," she says wryly. "My knowledge of the use of tempera and other media of the renaissance era took a while to be useful."

After a modest childhood (movingly evoked in her memoir *Foreign Correspondence*) growing up in Ashfield in Sydney's inner west, university was a huge shock to Brooks. "I had dreamed of going there - I went past the entrance on Broadway on the bus while I was still a schoolgirl at an all-girls Catholic school [Bethlehem College, Ashfield]. So when I arrived I was totally unprepared for all of it, and had what I would describe as a freshman wobble. I mean there were men, God help us! And people were so polished."

To overcome her feelings of extreme shyness and social inadequacy, Brooks gamely decided to join the Sydney University Dramatic Society. "And that's where I found my tribe," she says. "I wasn't any good, mind you, and I was too much of a minnow, in awe of peers like Neil Armfield and David Marr to become friends with them. But I had my first great romance and developed strong female friendships, although my gypsy life prevented me from staying in touch with the ones who weren't journalists."

There is no trace of her former reticence now. "At Sydney Uni I used to sit in the back row of meetings about environmental issues and not say anything. Now I'm a monster," she laughs. "I'm a terrible blowhard at the table, with rafts of opinions."

Together with Horwitz, Brooks is also an active campaigner on local issues such as land preservation. On the subject of the forthcoming US presidential election she is forthright: "I am for Bernie Sanders." She feels a little distanced from American literary life "because we are far from Brooklyn" but hosts and supports the local writers centre and events at local festivals.

Although originally a city girl, Brooks always dreamed of a home in the country and has adapted to rural life with enthusiasm. When not at her desk, she rides and keeps an eye on the family's gentle flock of alpacas that feature in her Facebook posts. But her work is ethically strong: she is already well into the next novel, which returns to the American Civil War for part of its story about a racehorse and a work of art. So that sports desk cadetship and undergraduate study of art history will be put to good use after all.

"That's my Irish grandmother's influence," laughs Brooks. "I don't waste anything."



*The Secret Chord* is published by Hachette.

## GERALDINE BROOKS

2006: Pulitzer Prize for March

2008: Australian Publishers Association's Literary Fiction Book of the Year for People of the Book

2009: Peggy V. Helmerich Distinguished Author Award

2010: Dayton Literary Peace Prize Lifetime Achievement Award

# BOOKS THAT CHANGED MY MIND

Reading experiences that led our Chancellor and Professor Adam Bridgeman to see life differently.

## BELINDA HUTCHINSON AM

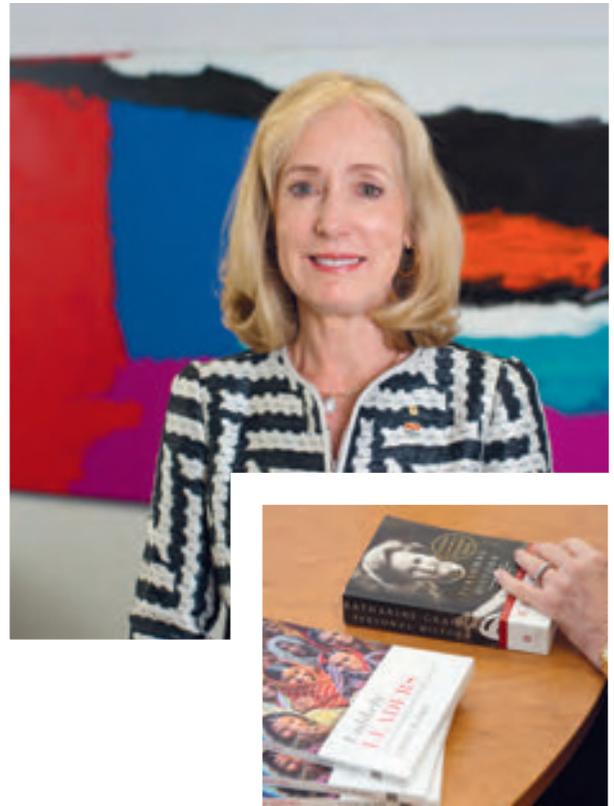
Chancellor, the University of Sydney (BEC '76)

### PERSONAL HISTORY

Katharine Graham, 1998

### UNLIKELY LEADERS

Cathy Burke, 2015



These two books are both by inspiring women who have changed how I think about leadership.

Katharine Graham took over ownership of *The Washington Post* in 1963 under tragic family circumstances, after her husband's suicide. She went from homemaker to publisher, becoming the first woman to head a major American company. Under her leadership, the *Post* ranked as one of the most respected newspapers globally, breaking the stories on the Pentagon papers on the Vietnam War and Watergate.

In her autobiography, *Personal History*, Graham is open, honest and self-effacing about her challenges, revealing her insecurities and showing her courage in confronting them.

Graham appears an unlikely leader. She was brought up in a privileged family, but had little emotional support from her distant parents and no expectation that she would ever have any kind of career. When she took over the company she had no business training, but she loved the newspaper and was determined to retain family ownership.

She paved her own way. She went on to become one of the most admired businesswomen in the United States and a prominent promoter of gender equality.

When I read the book I'd just had my first child and I was trying to juggle my career in the corporate world with my new baby. I could see how few women there were in senior leadership positions in business and government. I found

it inspiring that a woman such as Katharine Graham could achieve the success she had.

Cathy Burke is another fearless and courageous leader. As chief executive of The Hunger Project in Australia, she has dedicated her life to ending poverty and world hunger.

*Unlikely Leaders* is a collection of stories from Burke's work over two decades with people from impoverished villages in India, Bangladesh and Africa. Her stories show how these grassroots women leaders, with vision and commitment, have the power and capacity to effect sustainable and positive change for their communities.

What I take from these two books, and from many other inspiring leaders, is that leadership is not about having a traditional or expected background or set of skills. Successful leaders have a deep sense of purpose in their lives and a relentless determination to achieve their goals. Success results from their courage to step up, take risks, learn from their failures and persevere to achieve the outcome they desire.

Such leaders have motivated me to step outside my comfort zone as the University's Chancellor, because I am passionate about the importance of quality education and research, and I'm committed to making a contribution to our University.

## PROFESSOR ADAM BRIDGEMAN

Associate Dean (Learning and Teaching),  
Director of First Year Studies (Chemistry),  
Faculty of Science. Adam recently won the  
Office for Learning and Teaching's National  
Teaching Fellowship.

## WHAT WOULD GOOGLE DO?

Jeff Jarvis, 2009



We may not all agree that Google always lives up to its motto "Don't be evil", but there are few that would deny its huge influence on our lives and apparent omniscience. We have watched the company grow and extend its reach into our lives, the way we work and the way that our students interact with each other, the world and us. This book offers an absorbing description of how Google succeeds without, seemingly, charging us a cent.

The fascination of this book for me comes – as the title suggests – in considering how I can innovate, however modestly, in Google-like ways as a teacher. Can the approach of a company that preaches openness, constant renewal and the use of data be applied to the academic world?

Instead of erecting walls around our classrooms and guarding our resources, why not open them up and trust how our students and colleagues around the world use and develop them? The approach "do your best and link to the rest" is as good for keeping eLearning sites fresh as it is for businesses. Google makes mistakes but makes them well: can we innovate in the classroom, be open with our students about our approach and depend on them to help us continually improve?

As Jeff Jarvis argues, Google collects and uses data phenomenally well without us really noticing that it is doing so. We are just beginning to learn how to do this in education and how to let go of the controls. At its core, Google search ranks on numbers and trusts that the crowd's choices reflect quality. Jarvis celebrates this.

There are many books, blogs and opinion pieces published on the disruption that is coming to higher education and Google's probable role. Although Jarvis warns us about this, the appeal of his book is getting us to think how a different approach to openness, trust and data can succeed in a world where facts are available instantaneously.

**Adam Jacobs knows how and when to seize opportunities. This is what he did in 2011 when he and four others founded Australia's most ambitious online fashion retailer, The Iconic.**

# Clothes maketh

Written by Lynne Blundell  
Photography by Victoria Baldwin (BA '14)

It was a move that has paid off but, like all entrepreneurial ventures, success was never certain and for Adam Jacobs (BA '07 BCom '07) personally the timing wasn't ideal. When the opportunity to start an online business arose he was in Copenhagen working for Boston Consulting and about to embark on an MBA.

"I had to choose between doing an MBA and coming back to Australia and taking the risk of starting up a company," Jacobs explains. "In the end I decided it might not be the right time but it was the right opportunity and I took the risk and the plunge. I didn't do the MBA but I feel like I've done 10 MBAs since."

Berlin-based Rocket Internet, which incubates online businesses worldwide, saw an untapped market for an Australian online fashion retailer offering local and global brands. The company approached Jacobs and his associates and The Iconic was born.

Australian fashion shoppers took to the concept from day one, so much so that the business had to change warehouse premises four times in the first six months.

According to Adam Jacobs, what makes the Iconic so attractive to shoppers is its customer-centric philosophy.

"From day one we had a natural focus on delivering a far

superior shopping experience to what Australian customers had seen before. We built a very fast delivery model – up to three hours in Sydney and free overnight around the country."

The team put together a wide range of brands – more than 700 – and a great returns proposition: a free 100-day return. They invested heavily in the technology behind the shopping experience via the website and mobile phone app.

"We had to figure out what was the next big step forward in the online shopping experience and to ask 'How can we push the boundaries to bring that to the customer?' By putting the customer first, we naturally created this virtual cycle of growth – the more customers we served, the more they'd tell their friends."

Jacobs and his team decided to do in-house warehousing, to understand exactly how it operated and look for opportunities for improvement. They worked closely with Australia Post to design a delivery process and the result was a one-day turnaround. A customer who places an order before 10pm receives it next morning at breakfast.

Four years later, The Iconic hasn't changed what it does, but the how has changed a great deal.

"The real challenge for retail is how technology is

changing our abilities as retailers,” says Jacobs. “We love to quote Amazon CEO Jeff Bezos: ‘It’s still Day One when it comes to e-commerce.’ We’re constantly thinking about what’s next for our customers and trying to push the boundaries through innovation.”

Three recent examples include Saturday delivery, same-day delivery around the country and a new shopping app targeting mobile phone shoppers.

“We’ve seen a huge increase in mobile traffic in the past year. That’s why we’ve created this app to enhance the experience. It’s powered by a completely new technology that will allow us to produce innovations more quickly in the future.”

Social media is also critically important to The Iconic, with more than half a million followers on Facebook and 100,000 plus on Instagram. Where Facebook is focused on trending topics important to specific communities, Instagram is a highly visual medium well matched to fashion.

“Instagram is a very powerful channel for us. When we launch a new brand we talk about it first on Instagram. We get direct feedback from customers on what they think about it and they share it with their friends.”

When he looks back at the journey so far, Jacobs points to his education as playing a vital role, with his Arts/Commerce degree and double major in philosophy giving him a useful set of strategic skills around “critical thinking, forming a good argument and problem solving”.

Studying philosophy also helped him to analyse large pieces of complex information very quickly and to find patterns in that information.

When asked for tips to pass on to potential entrepreneurs, Jacobs offers two.

“When you give more to people than you expect back, opportunities are more likely to come your way and you tend to generate good luck. I find that I achieve more by taking the humble approach, learning from what goes right and wrong, and really committing myself to your next attempt.”

And his second insight:

“I try to dispel the thought that a career is like a ladder, where you climb to a potential end point. I prefer to see it as a maze. You don’t really know where it’s going to end but what you should be doing is making the right call at the next turn. And you make that right call based on what’s in your gut and what you’re really enjoying at the time.”



Known for his pioneering work in modernising general practice in Australia, late alumnus Dr Edmund Bateman was a great Australian who had a vision for affordable healthcare.

# The good doctor

Written by Lynne Blundell

Photography by Sasha Woolley/Fairfax Syndication.

In the 50 years since Edmund Bateman (MBBS '65) graduated from the University of Sydney Medical School, he was a suburban GP, a health services entrepreneur, a prominent businessman and a philanthropist.

So when Bateman, the founder of Primary Health Care, established his first 24-hour medical centre in the 1980s, he had a vision – access to high-quality healthcare for all people in Australia regardless of their socioeconomic status and ability to pay.

Thirty years later that vision has been more than realised. Today the sort of care provided by Primary Health Care is considered the norm. But this wasn't always the case.

From that first medical centre in the Sydney suburb of Brookvale, Primary Health Care now has 71 medical

centres, about 2000 pathology collection centres across metropolitan, regional and remote Australia, and a radiology practice that provides about 2.5 million medical imaging examinations each year. For the founder it was a dynamic

journey. After graduating from the University of Sydney in the mid 1960s, Edmund Bateman trained as a general practitioner at the Mater Public Hospital in Sydney.

It was here that he saw first hand the value of a full range

of outpatient services under the one roof – general practice, radiology, physiotherapists and specialist clinics.

“The Mater Hospital was the blueprint for our medical centres today, as I saw the benefit to patient and doctor from this comprehensive style of medical practice,” Bateman told *SAM* during a recent interview.

**“I had the opportunity to receive a world-class medical education.”**

As a young doctor during the 1970s and 80s Bateman, like most GPs, worked long hours in isolation from other sectors of the healthcare system and was frustrated by the lack of access to comprehensive medical care for many patients.

“Patients’ access to medical care was impacted by their ability to afford that care,” he said. “I recall one of my patients was refused a critical operation because of her parents’ inability to afford the surgeon’s fees. Even with the introduction of Medicare, bulk-billed medical services were a rarity initially.”

Over time the role of the GP changed. Whereas GPs historically catered to a patient’s full range of needs, including delivering babies and administering anaesthetic, this breadth of care reduced with an increased emphasis on specialisation.

When he opened the first Primary Health Care medical centre, Bateman was treated in the manner of many pioneers – with scepticism and resistance. The centre was ahead of its time, opening up access for patients to a wide range of medical services that were bulk billed. Comprehensive medical care was available on site 24 hours a day, 365 days a year.

“Our model of care at our first centre in Brookvale was significantly different to the norm of the time,” Bateman said. “The greatest challenge was attracting the right-skilled doctors to the centre – particularly those who were also willing to work a mix of shifts including midnight to dawn and weekends. During those early days, there was significant scepticism and opposition from the medical profession and I recall working many midnight-to-dawn shifts.”

For patients the concept was an absolute winner from day one and the medical centre was an immediate success. Similarly, for doctors, the model of care increased their interaction with the other providers in the healthcare system, including other GPs, physiotherapists, radiologists and subspecialists.

“It also increased the breadth and depth of the clinical skillset of the GP due to the increased range of patients, equipment and facilities at hand that made for a more stimulating and challenging environment,” Bateman said.

The model of care evolved over time as Bateman could afford to invest in more services, equipment and facilities within the centre. Today that first medical centre at Brookvale has evolved into a multi-specialty site with more

than 50 medical professionals and licensed MRI (magnetic resonance imaging), ophthalmic specialty facilities and multi-theatre day surgery.

After retiring as managing director of Primary Health Care, Dr Bateman remained as a board member. He believed its model of care had made an important contribution to the success of the Australian healthcare system, a system that is “the envy of the rest of the world”.

“I believe what we do at Primary is not only good medicine – it genuinely offers superior outcomes for doctors, patients and payers,” Bateman said. Outside of Primary Health Care, Bateman and his wife, Belinda, were very active in beef cattle production. They became pioneers again: in importing

and transplanting frozen cattle embryos for herd improvement. They won numerous awards for their Murray Grey cattle at the Sydney Royal Easter Show and other interstate shows and were the first to export a Murray Grey Bull to the United States.

As for the future of healthcare, Bateman wanted to see greater emphasis from regulators and governments on ensuring appropriate funding for care of patients in the community, pre- and post-hospital care – which he felt was being overlooked.

Any exciting developments in the field? Bateman believed genomics would play an increasingly central role in healthcare during the next decade.

“The cost of sequencing a genome in 2001 was \$1 billion and required collaboration of all major universities across the world. Today that same genome can be sequenced by one of our pathology laboratories for a few hundred dollars.

“The possibilities and insights from understanding the genetic basis for disease holds a promise of changing how we personalise healthcare delivery, with potential for major advances in disease management and patient care.”

Bateman had fond memories of studying medicine at the University of Sydney. “I had the opportunity to receive a world-class medical education and formed friendships with fellow students that have lasted my lifetime.

“Most importantly, I also met my wife Belinda, the love of my life, and my closest adviser while she was studying a Bachelor of Arts at the University.”

**Sadly, Dr Bateman passed away before this edition of SAM went to print. We dedicate this article to an inspirational leader who changed the face of our healthcare services.**



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Professor Sally Wood and colleagues are digging deep into big data, exploring its potential to improve the bottom line and deliver more personalised healthcare.

# Big data, better health

Written by Christopher Maunder  
Photography by Victoria Baldwin (BA '14)

Big data, so the headlines tell us, is the panacea to all society's problems. But what does this latest management buzzword mean? What's behind its meteoric rise into the modern psyche? And is it really new?

"The concept of using data to prove or disprove a hypothesis clearly isn't new," explains Professor Sally Wood, from the Discipline of Business Analytics at the University of Sydney Business School. "But testing has often relied on assumptions about the process or model which generated the data."

"The data-rich world we now inhabit allows us to relax these assumptions and consider a richer, potentially infinite class of data-generating processes. Incorporating this uncertainty not only gives us a deeper understanding of past behaviour, but also enables us to make much more accurate predictions of the future."

For Professor Wood, who studied a Bachelor of Chemical Engineering at the University of Sydney before undertaking an MBA and a PhD, there is no single, universally accepted definition of big data. However, she is clear on what it is not.

"For me it's not the size of the data that matters, but what you do with it that counts," she explains. "So it's not about the existence or storage of huge amounts of data – although

that is often part of it – it's more about the information and knowledge you can extract from it using predictive analytics," she explains.

Wood attributes the meteoric rise of the popular term "big data" to the rapid digitalisation of society. "Nowadays it's so easy to capture and store vast quantities of data on almost all aspects of life from technology like smartphones and activity trackers," she explains. "These things simply didn't exist that long ago and they are enabling more people to leverage the power of data."

Professor Wood is working with colleagues from around the University not only to harness the power of big data for business, but also to gain a deeper understanding of a range of scientific disciplines.

"To date, we have principally seen big data used in the business world, and there are some fantastic examples of its application, but there are also massive opportunities in other areas such as health and the sciences, which is really exciting," she says.

In business, Professor Wood believes the rise of big data has increased awareness of the value of evidence-based decision-making using rigorous analytics.

“People are finally starting to grasp that nine times out of 10, data-driven models will beat gut instinct at predicting the future – so the use of analytics with real-time experiments can create genuine competitive advantage,” she says.

“For example, you can use real-time experiments to mitigate your exposure to risk; to better understand your customers; and to discover what it takes to make your people perform at their peak. In fact you can use them to understand any aspect of your business, and the more you know, the greater your competitive advantage.”

Results of a recent survey undertaken by the *Australian Financial Review’s* BOSS Magazine in conjunction with the University of Sydney Business School confirm that Australian businesses are starting to get to grips with big data. Respondents showed a fairly good understanding of what big data is; yet 58 percent said their companies weren’t using big data.

“That doesn’t surprise me,” says Professor Wood. “We are seeing pockets of innovation in corporate Australia, particularly in the tech sector, but there are still plenty of organisations which haven’t yet got to grips with the value of big data and are lagging behind their international peers. This provides nimble organisations with a massive opportunity to gain market share and drive shareholder value, particularly in the domestic market.”



As good examples of companies using big data to create competitive advantage, Professor Wood cites some of the major international retailers from the United States and some of the big European insurers.

“They are using big data to micro-segment – to understand customers as individuals, rather than categories,” Wood says. “This enables them to tailor their products, services and communications specifically, providing a better experience for the consumer.”

While Professor Wood is infectiously enthusiastic about the value of big data to business, it’s when she starts talking about its potential application in healthcare and the sciences that she gets really excited. With healthcare systems around the world struggling to provide high-quality care under budgetary constraints, Professor Wood believes big data provides an opportunity to unlock efficiencies and improve patient outcomes.

“In the same way that big data enables corporations to hyper-target individuals, it also gives us the opportunity to provide much more personalised healthcare and improve individual patient journeys,” she explains.

“For example, by capturing individual patient data and analysing it against that individual’s norms, rather than benchmark category norms, doctors will be able to identify potential health issues quicker and provide potentially life-saving treatment. This is just one way that big data can make a massive difference to improving outcomes.”

Professor Wood also sees huge opportunity in science and is working with Professor Hugh Durrant-Whyte from the Faculty of Engineering and others to explore how big data can help advance the life, earth and social sciences.

“It’s really groundbreaking stuff,” she says. “In the area of life science, for example, we are looking at how we can create a map of the metabolic system. In earth science, Professor Durrant-Whyte is looking at using big data to better understand the geology of vast swathes of central Australia. And in social science, we are investigating how we can predict what personal characteristics might lead to criminal behaviour, and how we can use data not only to prevent crime but also improve detection.”

While she sees enormous benefits to its application, Professor Wood is acutely aware of the Orwellian undercurrents of big data.

“I completely understand people’s concerns and there needs to be serious debate about what legal and ethical protocols should be in place to protect the consumer,” she says.

“I personally believe that currently not enough data belongs to the individual and I think that needs to change, but the data is already out there, and by harnessing it for good, I believe we can have a positive impact on business and society.”

“Be not afraid of greatness.  
Some are born great, some  
achieve greatness, and some have  
greatness thrust upon them.”

William Shakespeare, *Twelfth Night*

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## TELL US WHAT YOU THINK

We received lots of comments  
on the new SAM and we've  
made some changes based  
on what you said. Keep the  
feedback coming!

Tell us what you think via  
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# CLASSNOTES

Share your stories with us –  
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**Dr Graham Toulmin AM (BDS '73)** has recently returned to the Democratic Republic of Congo (DRC) to continue his humanitarian work providing dental services and training to local communities. Graham first went to the DRC, along with his wife Wendy Toulmin AM and young family, as an Anglican Church missionary in 1987. The family lived there for four years until conflict and anarchy forced them to evacuate and return home.

After returning to Australia in 1991, Graham and his wife made many return trips to the DRC to build on their great work. In recognition, they were both named members of the Order of Australia in 2009. It was after Graham and Wendy's most recent trip, in September 2014, which they thought would be their last, that the husband-and-wife team made the decision to cut short their retirement plans and return to Africa for a four-year term.



**Andrew JD Scott (BSc(Arch) '85 BArch '86)** has become the first Asia-Pacific Economic Cooperation (APEC) Architect to be registered in Canada after

recently moving there. His architectural design and consultancy work has taken him to the United States, Malaysia, Indonesia, the United Arab Emirates and India.



**Simon Blair (BA '02 LLB '03)**, along with his film-making collective, recently won an award at the Adventure Pro Film Festival for the film *Bluetopia*. Using aerial drone technology, the film represents climbing, base jumping and other adventure possibilities in the NSW Blue Mountains.



**Lisa Sarzin's (LLM '02)** recently published children's picture book, *Stories for Simon*, about the National Apology to the Stolen Generations, has just been shortlisted for the Speech Pathology Book of the Year Award. All royalties from the book are being donated to the Goodes O'Loughlin Foundation, a charity that provides educational opportunities for Aboriginal and Torres Strait Islander children.



**David Parra-Gongora (MMD '03)** is a Communications Coordinator at Chevron in Colombia to help protect and promote the culture of one of the largest Indigenous groups in the country, the Wayuu community.



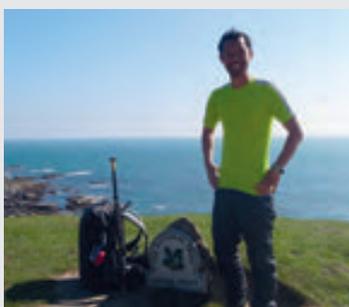
**Tahnee Westbury (BAppSc(OccThpy) '03)**, who owns and operates the Hopalong Occupational Therapy for Children clinics in Peakhurst and North Strathfield in NSW, recently won the 2015 Hurstville City Council's Business of the Year award.

**Christopher Richardson (BA(Hons) '05 MIntSec '11)**, is celebrating the publication of *Empire of the Waves: Voyage of the Moon Child*, his first novel, which was 12 years in the making. The book, which he started writing when as an undergraduate student, is an epic maritime fantasy for younger readers.



**Paul Cutlan (MMus '13)** has released his debut album, "Across the Top", which documents a body of work for strings and bass clarinet written during his postgraduate

studies. The ensemble features other graduates of the University including Oliver Miller (BMus '00), James Eccles (DipMus '99), Brett Hirst (MMus(Performance) '07), Mary Kiek (MAppSc(MusPerf) '06) and Liisa Pallandi (BMus(Perf) '11).



**Tony Chan (BA '04 LLB '06)** was presented with the 2015 Melita Hume Poetry Prize, awarded to a UK-based poet for a full debut collection. Chan composed a sonnet on each day of a 78-day, 2200-kilometre solo trek across Britain earlier this year. The collection, *Four Points Fourteen Lines*, will be published in early 2016.



**Dr Franklin Obeng-Odoom (PhD '12)** was elected as a fellow to the prestigious Ghana Academy of Arts and Sciences in July, becoming the youngest of current fellows and one of the youngest fellows to have been elected since the academy was established in 1959.



**Andira Putri (BCom '13)**, who returned to Jakarta after graduating, has become a consultant for McKinsey & Co in Indonesia, looking after clients across Southeast Asia.

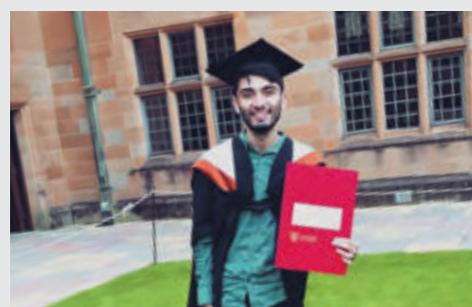
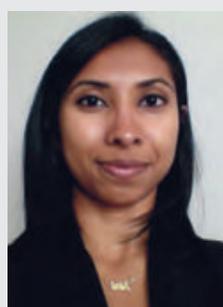


**Aurelien Strippoli (MIntBus '14)** has just commenced in the role of Commercial Director at Wine Vine TV, a start-up that produces videos for the wine industry and fosters a global online community.



**Congzhou Xie (MMediaPrac '10)**, who returned to Shanghai after graduating, is now Communications Manager at pharmaceutical company Boehringer Ingelheim, helping to educate people with Parkinson's disease and lung cancer about their conditions.

**Noraini Abdul Rahman (BA '13)**, Research Coordinator at the Neurodevelopment Research Centre, has spent the past year and a half in Singapore as part of the longitudinal study Growing Up in Singapore Towards Healthy Outcomes (GUSTO), which works towards understanding child development in Singapore.



**Shahbaz Malik (MMediaPrac '15)** has begun to make his mark in the media having recently landed an advertising role at Bauer Media – the company that produces magazines such as *Women's Weekly*, *Empire*, *Cleo* and *Harper's Bazaar*.



“We hope our  
gift will inspire  
more support  
for music and  
the arts.”

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Anthony and Sharon Lee's gift to the University of Sydney established the Sydney Conservatorium of Music's first jazz scholarship. Their passion for the genre and a desire to help talented, underprivileged musicians inspired their gift.

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