

# UNSW

ISSUE 1 2019

magazine

## Young Woman of the Year

How Angelica Merlot  
is shaping the new  
frontier of cancer research



### Inside Opal Tower

Engineering Dean Mark Hoffman describes what went wrong

### Liquid gold

The breakthrough that offers clean water to the world

### Surviving our roads

Simple steps to keep more pedestrians and cyclists alive

## From the Vice-Chancellor

Welcome to the first edition of *UNSW Magazine* for 2019.



On delivering the Gandhi Oration earlier this year, The Reverend Tim Costello reminded us of the power of ordinary people to do good, drawing on Bapu's timeless advice that "in a gentle way you can shake the world".

Alongside an edited transcript of Costello's Oration, this issue of *UNSW Magazine* is overflowing with stories of the many ways UNSW students and staff make a positive impact – both gently and quite powerfully – on the world.

I found it heartwarming to read about the spirited display of inclusion and community that was our third appearance at the Sydney Gay and Lesbian Mardi Gras, and to learn that the Australia Ensemble, which has been resident at UNSW since 1980, has exciting plans for the future, after four decades delighting classical music fans across Australia and the world.

There is ample inspiration to be found in the story on Dr Angelica Merlot's pioneering work on drug-resistant pancreatic and brain cancers, as well as in news of our University's new global outreach efforts to improve eye care services in Uganda and access to electricity in Malawi.

As always, UNSW pushes the boundaries of what it means for a university to serve society. But what is most clear reading these stories is the depth and breadth of the impact UNSW people make.

I hope that you enjoy exploring this edition of *UNSW Magazine* as much as I did. Our people can and do "shake the world" in the most diverse and inspiring ways.

**Professor Ian Jacobs**

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The Australia Ensemble, the renowned chamber music group resident at UNSW Sydney, is performing much-loved classics and invigorating new works for its 40th season. It promises to be a worthy birthday celebration.

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**Cover image:** Angelica Merlot, cancer researcher and the NSW Young Woman of the Year.

**Photo:** Anna Kucera

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# UPFRONT



Ocean impacts and diverse biology: Dr Daniel Falster and Dr Laurie Menviel.

## Top honours from the Australian Academy of Science

Scientia Fellow Dr Laurie Menviel of UNSW's Climate Change Research Centre and Dr Daniel Falster of the Evolution & Ecology Research Centre are among 20 Australian scientists recognised with honorific awards by the Australian Academy of Science.

Dr Menviel, an early career researcher and ARC Future Fellow who received the Dorothy Hill Medal, aims to help improve projections of climate and sea-level rise using research focusing on the role of ocean circulation in climate change. She has made major contributions to understanding oceanic circulation, its variability and its impact on global climate, the carbon cycle and the cryosphere.

"Given increased atmospheric greenhouse gases, this knowledge is crucial to improving climate and sea-level projections," says Dr Menviel. "This year my research will focus on understanding some of the warmest periods of the recent past and attempting to pinpoint the feedbacks that led to high latitude warming, loss of continental glaciers and higher sea-levels."

Ecologist and early career researcher Dr Falster received the Fenner Medal for his contribution to predicting and understanding the distribution of plant types.

"I use maths and modelling to understand why evolution favours diversity of plant types, and why the mix of plant types varies from place to place," said Dr Falster, who is also an ARC Future Fellow. "Computer models and large data sets have enabled us to test fundamental ideas about the processes shaping biological communities."



A mother and child at one of the cancer screening clinics in Northern Uganda.

## Cancer screening expands Uganda health program

More than 1500 women from northern Uganda have been screened for cervical and breast cancer as part of a community health program set up in part by UNSW.

Launched in 2016, the Transforming Community Health Program is a partnership between UNSW, Gulu University and the Ugandan Health Ministry to improve women's and children's health, reduce non-communicable diseases and mental illness, and introduce online learning in the Gulu University Master of Public Health program.

Before the program, Ugandan women had some of the poorest prospects in the world when it came to surviving cervical cancer. Now cancer clinics for women are being launched in health centres across northern Uganda.

"By the time the five-year plan for the Transforming Community Health Program finishes, we should have really well-trained nurses and midwives in cervical cancer screening in all the major health centres across northern Uganda, as well as trained health educators, researchers and clinicians," says Professor Robyn Richmond, of UNSW Medicine.

The UNSW team also surveyed women about domestic violence to better understand the underlying social issues affecting efforts to provide better health services for women.

The group is screening children for aural, ocular and oral health this year, and will survey non-communicable diseases among those seeking information on nutrition, tobacco use and alcohol consumption, with emphasis on cardiovascular problems and mental health.

## LEADING RECYCLING INNOVATION



• UNSW will lead the new NSW Circular Economy Innovation Network, a state government initiative to drive waste management and recycling. It will link industry with government, local

councils and researchers to stimulate new ways of tackling the challenges of the circular economy. Founding Director of UNSW's Centre for Sustainable Materials Research & Technology (SMaRT), Professor Veena Sahajwalla (pictured), has been appointed Executive Director of the new network. "We need to rethink attitudes to all of the materials we discard and start to see them as renewable resources if we want to live more sustainably," she said.

## KELLEHER LEADS KIRBY INSTITUTE



• Leading international HIV researcher and clinician Professor Anthony Kelleher is the new Director of the Kirby Institute. The Dean of UNSW Medicine, Professor

Rodney Phillips, said Professor Kelleher (pictured) was "an accomplished and highly respected academic and clinician in the field of immunology and HIV research, with a long career in various leadership roles across the Kirby Institute, UNSW Sydney and St Vincent's Hospital, Sydney". The Kirby Institute's inaugural Director, Professor David Cooper, passed away last year. The Kirby Institute has been at the forefront of infectious disease research, in Australia and globally, for more than 30 years.

## JOHNSTON WINS CLARKE MEDAL

• Professor Emma Johnston, Dean of Science, is the winner of the Royal Society of NSW 2018 Clarke Medal, for her research on the impact of human activities in complex marine ecosystems. "A deeper understanding of our coastal ecosystems is critical to human survival in a rapidly changing world," Professor Johnston said. She is now leading the development of molecular approaches to monitoring the biodiversity and functioning of estuarine ecosystems. The Royal Society of NSW Clarke Medal is one of the most highly prized awards for natural sciences, with the disciplines of botany, zoology and geology considered in rotation every three years.



UNSW President and Vice-Chancellor Professor Ian Jacobs at the summit.

Photo: Maja Baska

## The big question: why does your work matter?

More than 200 of the world's brightest minds converged on UNSW for an event that underscored the need for higher education institutions to outwardly champion the value and significance of their research.

The Times Higher Education Research Excellence Summit: Asia Pacific at UNSW Sydney in February challenged university leaders and researchers from around the world to better showcase how they are tackling the world's major problems.

UNSW President and Vice-Chancellor Professor Ian Jacobs implored higher education leaders to continue to fight for research in the public interest and to work better together.

Professor Jacobs said flagging enthusiasm for public funding for universities and research was a challenge.

"Academics and university leaders must be proactive in sharing their stories and emphasising the link between universities and the research that, ultimately, advances society," Professor Jacobs said. "We have to make our communities care enough to champion our work and influence the government to care as well."

John Gill, editor of *Times Higher Education*, said negative media coverage in some places around the world had contributed to the disconnect between universities and the public.

Closing the event, Professor Jacobs said: "We have reinforced the value of ... research. We have reinforced the importance of linking our research and educational efforts more closely. And we have formed a consensus ... that the research produced in our part of the world has enormous potential yet to be tapped."



One of the world's leading scholars of international environmental law: Scientia Professor Rosemary Rayfuse.

## Law professor elected to the Academy of Social Sciences

UNSW Scientia Professor Rosemary Rayfuse has been elected a Fellow of the Academy of the Social Sciences in Australia (ASSA) for distinguished contributions to her discipline and to society.

ASSA is the peak body devoted to the advancement of knowledge and research in the social sciences within Australia.

The new Fellows have significantly advanced research knowledge and developed new approaches to areas as diverse as accounting, linguistics, political science, psychology and law.

Professor Rayfuse researches and teaches in the area of public international law. She is one of the world's leading scholars of international environmental law and specialises in areas such as law of the sea and climate change law.

Environmental law is a field for which Professor Rayfuse has quite literally put her body on the line. She has undertaken adventures in some of the wildest places on Earth, including the Arctic, Antarctic and Greenland. In 2006 she became the first Australian woman to attempt to ski from the North Pole to Canada, to raise awareness of polar governance issues.

ASSA is one of the country's four learned academies. This year, it was noted that 53% of the ASSA Fellows are female, including leading practitioners and Indigenous scholars.

Professor Rayfuse joins Professor Ross Buckley, Professor Janet Chan, Professor Megan Davis, Professor Martin Krygier, Professor Jane McAdam, Professor Louise Chappell and the Dean George Williams as Fellows of the Academy representing UNSW Law.

## COVETED ROME RESIDENCY



- Award-winning sculptor and UNSW Art & Design graduate Alex Seton has been awarded the coveted Mordant Family/ Australian Council Affiliated Fellowship

to study in Rome. The Fellowship will enable Mr Seton (pictured) to spend two months in residence at the prestigious American Academy. Mr Seton, who graduated from UNSW in 1998 with a Bachelor of Art Theory and History, is renowned for his contemporary applications of traditional marble carving techniques that explore difficult human experiences. He also works in sculpture, photography, video and installation. Most recently, Mr Seton's work has shone a light on the plight of refugees and migrants around the globe.

## FIRST RESEARCH CENTRE IN CHINA

- UNSW Sydney has opened its first overseas research centre in Yixing, China, a facility that will drive research and commercial opportunities in environmental protection, especially water treatment, resource recovery and environmental management and sustainability. The UNSW Centre for Transformational Environmental Technologies (CTET) will operate through the Torch Innovation program in partnership with Yixing Industrial Park for Environmental Science and Technology, the only hi-tech (Torch) zone focused on the development of an environment protection industry in China. The Centre has already secured more than \$3 million in funding from partners including the Jiangsu Industrial Technology Research Institute (JITRI), Goldwind Environment and Puxin Environment for research activities at UNSW Sydney and in China.

## WINNERS AT VETERANS' AWARDS

- The outstanding work by two UNSW Canberra alumni and associated businesses was recognised at the Prime Minister's Veterans' Employment Awards. Ben Whitham from Penten Pty Ltd was the winner of the Veteran Entrepreneur of the Year, whilst BCT Solutions was named Outstanding Employer of the Year. General Manager BCT Solutions, David French, said that participating in the UNSW Canberra mentoring program was a valuable way of supporting veterans' transition to the civilian workforce. The awards recognise businesses that support and employ veterans and ADF spouses, as well as veterans who are making significant contributions to their workplace.



Professor Lisa Harvey Smith: UNSW is already well engaged in developing diversity of talent and an inclusive culture.

## Ambassador for women in STEM joins the team

Australia's first ambassador for Women in STEM, astrophysicist Professor Lisa Harvey-Smith, has joined UNSW Sydney as Professor of Practice in Science Communication. UNSW has also been named the host organisation for her Women in STEM Ambassador role.

Professor Harvey-Smith is an award-winning astrophysicist with 15 years' experience conducting and publishing fundamental astrophysics research at universities and research institutes across the world. She is a presenter of the popular ABC television show *Stargazing Live*, author of *When Galaxies Collide* and a prolific public speaker.

Professor Harvey-Smith says she is excited by the new challenge after more than a decade of research and is looking forward to "helping smash barriers to inclusion in STEM and to creating a stronger, more inclusive STEM sector fit to drive Australia's economic success in the coming decades". A mainstay of that work is helping to develop and launch Australia's 10-year plan for Women in STEM.

Dean of Science, Professor Emma Johnston, said she was thrilled to welcome Professor Harvey-Smith to UNSW: "We are proud to welcome Lisa to UNSW as Australia's first Women in STEM Ambassador – the appointment is crucial for Australia, as we need more women to enter, stay, and succeed in STEM areas. One way to work towards that is to ensure girls and women have role models to look up to, and Lisa is an inspiring scientist and communicator."



Professor John Church: We are dangerously close to triggering "many metres of sea level rise over coming centuries".

## Global sea level expert wins leading climate change award

The world's top sea level expert, UNSW Sydney Professor John Church, is the first Australian to win the BBVA Foundation Frontiers of Knowledge Award in Climate Change for his work projecting and interpreting the threat of global warming on accelerating increases in sea levels.

Professor Church is recognised for narrowing the causes of rising seas, linking satellite observations with in-situ measurements and numerical modelling to identify the human impact on sea level changes and discovering that the rate of increase is accelerating over time.

He shares the prize and €400,000 (\$633,000) prize money with French space geodesist Anny Cazenave, a specialist in satellite altimetry (the measurement of the form and dimensions of Earth) and British climate scientist Professor Johnathan Gregory, an expert in ocean heat uptake and climate sensitivity.

Forecasts developed from their research warn that without drastic greenhouse gas reductions, sea levels could rise more than one metre by the end of this century, threatening the homes of 100 million people. Their findings have been instrumental in improving the understanding of how the Earth system works, enabling more solid projections.

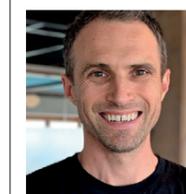
"This award is a recognition of the importance of the science, the progress that has been made over recent decades, and of course the role that the three of us have made in contributing to the science," says Professor Church.

The award was presented at a ceremony in Madrid in June.

## PM'S FOND VIEW OF UNSW

- UNSW Sydney President and Vice-Chancellor Professor Ian Jacobs offered congratulations to Prime Minister Scott Morrison on his re-election in May. "As many of you will know, Mr Morrison is a UNSW alumnus and the first of our alumni to hold the role of PM," Professor Jacobs said. Speaking about UNSW last year, Mr Morrison said: "It's a great institution ... UNSW is going to play a huge part in Australia's economic future [and] Australia's future when it comes to technology and innovation – the future of science and technology – and leaders into the future. I thank UNSW for all the opportunities I had when I went there and I know that it's going to be an institution that continues to serve Australia well." Mr Morrison's appointment follows the re-election of NSW Premier Gladys Berejiklian, who is an alumna of UNSW.

## THE SCIENCE OF SUCCESS



- The science behind innovation, and what makes some start-ups thrive while others fail, is the focus of the world-first Future Minds Lab at UNSW. The

purpose-built research and applied science lab will include 20 scientists, designers and psychologists. They will work with industry on the brain science and psychology behind new tools for businesses and workers dealing with change. Founder and director Professor Joel Pearson (pictured) says the centre wants "to help supply the Australian workforce with the skills they will need for the future of work".

## KAYESS EXPANDS UN ADVOCACY

- Rosemary Kayess, an internationally respected lawyer, researcher and academic and Director of Engagement at UNSW Sydney's Disability Innovation Institute, has been elected to Vice-Chair of the United Nations Committee on the Rights of Persons with Disabilities. The committee monitors implementation of the UN Convention on the Rights of Persons with Disabilities. "I'm honoured to be appointed to the executive of the committee and look forward to the opportunity to bring my legal and public policy knowledge to promote the rights of people with disability," Ms Kayess said. Her research and advocacy fields include access to justice, social inclusion, housing and employment for people with disability.



Connie Levett (right) is helping students develop skills relevant to modern newsrooms.

## New publication puts students in the beating heart of a newsroom

**N**ewsworthy, a news website featuring writing, audio and video produced by School of the Arts & Media students, is adding a new voice to Australia's news media industry.

A network of contributors from across the Faculty of Arts & Social Sciences are also contributing to the site, which is run under the guidance of a former editor of *The Sydney Morning Herald* news app, Connie Levett.

Ms Levett, who has more than 30 years' experience in the industry, came on board as Newsworthy's editor because she saw the value in students gaining practical experience in online publishing.

"Newsworthy is about student learning," Ms Levett says. "The experience of working in a high-powered digital newsroom ... it can be a brutal world. You need some basis before you get thrown into that."

"We made a decision to have a place where the students could publish their work, because one of the big things when you're leaving university is to have a portfolio and get that first job."

The publication aims to cover topics including justice, society, technology and gender. Ms Levett believes Newsworthy provides a point of difference by covering the issues facing 21st century Australia through the eyes of the generation who will live it.

"We wanted to have a flavour of youth, both in terms of subject material and contributions. We want to mould our coverage to something that talks to our students and to the things they are engaged with."



"Outstanding track record of leadership": The inaugural UNSW Provost, Professor Anne Simmons.

## Simmons appointed inaugural Provost

**P**rofessor Anne Simmons has been appointed the inaugural Provost at UNSW Sydney.

The recent Pro Vice-Chancellor, Academic Excellence and UNSW alumna has served in senior leadership roles in Australian higher education for 20 years. As UNSW Provost, Professor Simmons is the senior deputy to the Vice-Chancellor and a member of the University's Management Board.

UNSW President and Vice-Chancellor Ian Jacobs highlighted Professor Simmons' breadth of experience in university leadership.

"Anne has an outstanding track record of leadership at UNSW and her experience and skills make her an ideal candidate for this important new role," Professor Jacobs said.

Professor Simmons said she was delighted and honoured to join UNSW as its first Provost.

"I look forward to helping the Vice-Chancellor and the University deliver on UNSW's strategic plan over the coming years."

Professor Simmons has been the head of two schools in the Faculty of Engineering, and has had a successful career in industry with the Nucleus Group, which included Teletronics and Cochlear.

She chairs the Australian government's Advisory Committee on Medical Devices and is a member of other national committees involved in the medical technology area.

She is a Fellow of the Institute of Engineers Australia, a Fellow of the Australian Academy of Technology and Engineering and was made a Member of the Order of Australia (AM) for services to biomedical engineering in 2013.

## CAMPAIGN AGAINST PFAS CHEMICALS

• UNSW researchers are collaborating with several industry partners in a \$3 million campaign to develop sustainable remediation technologies to clean up emerging contaminants in water. PFAS chemicals, which recently have been associated with serious contamination at firefighting training facilities, airports and industrial sites, are the target of the program. The chemicals are also more widely present in the broader environment. The work is being led by Professors Mike Manefield and Denis O'Carroll and a research team from UNSW's Water Research Centre.

## HYDROGEN STORAGE FOR RENEWABLES

• Researchers at UNSW Sydney with partners H2Store are developing a first-of-its-kind hydrogen storage system that could mean cheaper, safer storage for renewable energy. Professor Kondo-Francois Aguey-Zinsou and his team at UNSW's School of Chemical Engineering expect the system will provide a new alternative for energy storage within two years. Professor Aguey-Zinsou says the invention will be more efficient, more long-lasting and safer than current power storage solutions for home solar systems, such as the Tesla Powerwall battery. The team hopes to have a 5kW home storage system on the market late in 2020.

## SOLAR EFFICIENCY RECORD



• The UNSW Sunswift solar car team has cruised into the record books, driving from Perth to Sydney to set a Guinness World Record for the lowest energy consumption while driving across Australia in an electric car. The team of 14 students completed the 4100km journey two days ahead of schedule, averaging 3.25kWh/100km, about 17 times less than an average Australian car. Travelling an average of 600 kilometres a day, the car used about the same energy each day as a standard household. UNSW Dean of Engineering Professor Mark Hoffman said the feat showed the potential of electric cars for Australia's future.



A still from Angelica Mesiti's ASSEMBLY, 2019.

Photo: Bonnie Elliott

## Venice Biennale entry examines the power of 'the people'

**A** three-channel video installation created by UNSW alumna Angelica Mesiti is entered in this year's Venice Biennale, one of the most prestigious cultural institutions in the world.

The work, *ASSEMBLY*, was created by Ms Mesiti during a two-month residency at UNSW Art & Design. In it, she says, a communal gathering is a means for making those with authority recognise the collective power of 'the people'.

"*ASSEMBLY* is looking at all the meanings of that word, at this historical moment where we are dealing with multiple crises, whether it's political, humanitarian or environmental," she says. "More than ever, we feel the human need to assemble, to come together, to exchange, for individual voices to be heard, that are coming from different perspectives."

She says the idea is explored through a series of translations and reinterpretations, both musically and choreographically, through performance and a range of generative actions.

The artist used the high recognition factor of the Venice Biennale to approach the eminent writer David Malouf, who allowed her to use his poem *To Be Written in Another Tongue*. Other collaborators include composer Max Lyandvert and curator Juliana Engberg.

The artist doesn't want to be seen as a representative of a nation – "it's too heavy a mantle" – but has put a lot of thought into presenting the diversity of Australia in *ASSEMBLY*.

The Venice Art Biennale runs until 24 November.



Left to right, from top: Professor Sally Dunwoodie, Professor Helen Christensen, Dr Louise Causer and Conjoint Professor Jane Butler.

## Academics honoured with prestigious NHMRC awards

**F**our UNSW Sydney academics have been honoured with National Health and Medical Research Council (NHMRC) 2018 Research Excellence Awards for outstanding contributions to health and medical research.

Scientia Professor Helen Christensen, Director of the Black Dog Institute and Professor of Mental Health at UNSW Medicine, was awarded the Elizabeth Blackburn Fellowship in Public Health. Professor Christensen is a leading expert on using technology to prevent and treat depression, anxiety and suicide.

Medical epidemiologist Dr Louise Causer, from The Kirby Institute and UNSW Medicine, was awarded the Frank Fenner Early Career Fellowship. Dr Causer's work focuses on point-of-care diagnostics for sexually transmitted infections. Point-of-care testing allows people in remote areas to be tested and treated in one visit.

Conjoint Professor Sally Dunwoodie, a biomedical researcher at the Victor Chang Cardiac Research Institute, was awarded the NHMRC's Project Grant. Professor Dunwoodie and her team are examining the impact of environmental factors on prenatal cell division. Their work could prevent some developmental defects.

Conjoint Professor Jane Butler, principal research scientist at NeuRA and conjoint academic at UNSW Medicine, won the Elizabeth Blackburn Fellowship in Clinical Research. Professor Butler's work is on neural control of respiratory muscles. Her research aims to improve respiratory health in the critically ill and those with quadraplegia.

## \$25+ REVIEW CONSOLIDATES PURSUIT OF GLOBAL GOALS

• A revised strategic framework, known as \$25+, is being developed for the University's keystone 2025 Strategy. An extensive consultation process involving staff, students, alumni and external partners is taking place to inform an options paper expected in October. New priorities identified in the process will then be confirmed when the new strategic framework is finalised and announced in early 2020. The President and Vice-Chancellor, Professor Ian Jacobs, said the 2025 Strategy was backed by a planned \$3 billion funding investment and underpinned the University's ambition to become Australia's global university.

## NATIONAL HONOURS FOR TEACHING EXCELLENCE



• Academics from Science and Art & Design have taken out accolades in the 2018 Australian Awards for University Teaching. Associate Professor Elizabeth Angstmann (pictured, left) was recognised for developing online and face-to-face materials and experiences for first-year physics students, encouraging active learning and problem solving. Associate Professor Snepvangers was recognised for developing innovative resources in the field of creative professional experience in art, design and media, especially by fostering placements in small and large organisations such as start-ups, collectives, galleries and design divisions of companies.

## INDUCTED INTO THE ACCOUNTING HALL OF FAME

• Business School academic Scientia Professor Roger Simnett has been inducted into the Accounting Hall of Fame for his impact on accountancy. "I feel an overwhelming sense of pride and gratitude at being recognised by my peers for the contributions I have made as an audit researcher, educator, and my contribution to practice and standard-setting, both in Australia and internationally," Professor Simnett said. He is only the fourth UNSW Business School academic to be awarded the prize and joins Ray Ball, Philip Brown and Ken Trotman as inductees.

# Dancing with the enemy

Scientia Fellow Angelica Merlot is determined to outmanoeuvre some of the deadliest cancers, writes *Lucy Carroll*.

**D**r Angelica Merlot has achieved what many medical researchers could only accomplish in a decades-long career.

She completed a PhD in anti-cancer drug development at the age of 24. Four years later, she became the youngest recipient of a National Health and Medical Research Council Grant.

Now, at 29, she leads a research team at UNSW Sydney exploring targeted treatments for some of the deadliest forms of cancer.

The UNSW Scientia Fellow, who is based at the Children's Cancer Institute, this year achieved another first: in March, she received the NSW Young Woman of the Year

award for her work developing new targeted medicines that combat drug-resistant cancers and cancer spread, with a specific focus on pancreatic and brain cancer.

"The power of research is that every day you can discover something new, solve problems and push barriers using your curiosity to address some of the major health issues in the community," Dr Merlot says. "For me, a career in medical research is about a lifelong discovery and education."

Dr Merlot received her award at a ceremony in Sydney for the NSW Women of the Year Awards. The Premier, Gladys Berejiklian, congratulated the winners and finalists in seven nominated categories. "Your achievements," Ms Berejiklian said, "are paving the way for generations of women to come."

Dr Merlot hopes the award will encourage more women to study science and medicine and pursue careers in health and cancer research. She believes it will raise the profile of cancers with poor survival rates and

generate funding for more research.

"There are almost 150,000 people diagnosed with cancer in Australia each year. It is wonderful to be acknowledged for the work the researchers do behind the scenes," she says.

Born to French and Syrian parents, Dr Merlot is the youngest of three girls. "My father was a high school maths teacher and my mother taught French. They encouraged us to do what we enjoyed. But also instilled a real drive to learn."

After receiving her undergraduate degree in medical science at The University of Sydney, she went on to complete a PhD with a team that is developing metal-binding agents, a new class of anti-cancer drugs.

"In high school, I was influenced by medical television shows and my biology teacher. I think that sparked my interest in medical science in general and how each cell in the body is quite different, but they all work together as one combined unit which is so fascinating," Dr Merlot says.

As an undergraduate she became focused on cancer research. "Seeing the impact cancer was having on the community and my family pushed me to pursue cancer research. It's been hard work. I'm very determined and passionate and that has helped along the way."

Her interest in aggressive cancers, such as pancreatic and brain cancer, was motivated by lack of improvement in survival rates over the past decades, largely due to late diagnosis, a lack of screening programs, low awareness of symptoms and a lack of treatment options. Pancreatic cancer has some of the lowest survival rates, often diagnosed too late and at an advanced stage, with about 90% of patients dying within five years of diagnosis. The five-year survival rate for brain cancer is about 20%. It kills more children than any other disease.

After moving to UNSW Medicine as a Scientia Fellow in 2018, Dr Merlot focused on understanding the mechanisms by which cancer cells grow and adapt to their environment, why drugs become less effective and the development of nanoparticles to improve drug delivery.

Her work into metal-binding agents contributed to a phase 1 multi-centre clinical trial in Australia, treating patients with advanced tumours.

"Metal-binding agents have been shown to deprive cancer cells of essential metals such as copper and iron that are vital for cancer cell growth and proliferation. These agents have been tested on advanced cancers and they take advantage of the fact that cancer cells have altered metal metabolism and require a greater amount of these essential nutrients than normal cells," Dr Merlot says. "These drugs have been shown to be effective in drug resistant cancers that are no longer able to be treated by standard chemotherapy. Metal-binding agents have also been shown to not only stop the growth of the primary tumour, but also block metastasis."

These metal-binding agents work on a broad range of cancer types but also target specific proteins such as NDRG1 which can act to suppress the spread of cancer.

"One of my current projects looks at



*'The future of treatment won't be about one miracle cure; it will be about a combination of treatments that will provide the best survival outcomes for each unique patient.'*

developing nanoparticles prepared from a protein found in the body known as human serum albumin. We've seen that this protein helps the delivery of these metal-binding drugs and helps their anti-cancer activity."

Most of Dr Merlot's project-based work takes place at the Children's Cancer Institute labs, at UNSW's Kensington campus, where a typical day involves conducting experiments in the lab, working with mouse models, patient tissue, writing grants and publications and supervising staff and students.

Dr Merlot believes the next two decades of cancer research will be defined by improvements to personalised medicine through better understanding of the genetics of the disease to predict patient response to therapy.

"The future of cancer treatment will be making sure that every patient receives the right treatment for their cancer type. In the age of personalised medicine, identifying precise molecular characteristics and genetics are critical for clinicians to identify which types of drugs are most suitable and effective for each patient," Dr Merlot says.

For breast cancer, screening programs and identifying genomic classifiers or proteins

such as HER2 have been important in improving and defining treatment options for years. But for other cancers, such as pancreatic or brain, with no detection tests and complex molecular diversity, there has been little progress.

"My hope is that cancer will become a more manageable disease. Something that is less feared and dealt with like any other disease. There is significant stigma around the word 'cancer' – there are cancer types that are deadly, which we hope to revolutionise, but there are many cancers that you can survive or live with for many years now."

Dr Merlot emphasises the importance of funding early career researchers, particularly in areas such as pancreatic and brain cancer that have traditionally been under-funded.

"More funding equals more research which means better outcomes for patients. We've seen improvements in breast cancer, melanoma and prostate cancer survival rates but brain and pancreatic cancer still have a dismal prognosis," she says.

Dr Merlot's current projects are investigating part of a human cell called the endoplasmic reticulum (ER). The ER is a type of organelle, or subunit within a cell, that has been shown to help cancers grow, spread and develop drug resistance.

"I'm looking at understanding how this part of the cell helps to induce cancer progression. This knowledge will help to identify new targets and therapeutics to stop the advancement of cancers," she says.

Some of the major advances in cancer now, says Dr Merlot, are understanding the tumour itself – how it consists of more than just cancer cells but other important cells that help the cancer adapt and survive. A major area of advancement is immunotherapy and understanding of the interactions of the immune system with cancer. Immunotherapy can help boost the immune system to attack the cancer.

"We are understanding more about the genetics of the disease and, with a more personalised approach, we are hopeful that we can improve survival rates for children and adults with cancer," she says.

Photos: Anna Kucera

# Marching fearlessly

UNSW's third appearance at Mardi Gras created a sense of empowerment for students and staff, writes *Lori Youmshajekian*.

**B**eyond policy and words, the Sydney Gay and Lesbian Mardi Gras in March was a chance to exhibit UNSW Sydney's commitment to community and inclusion.

A towering float of Clancy the Lion, the official UNSW mascot, led the way for more than 80 students and staff parading along Oxford Street for the 'fearless' 41st Mardi Gras.

"It was a true and generous collaboration with staff and students from Engineering, Art & Design and Built Environment," UNSW event organiser Fergus Grealy says.

"For the young LGBTIQ+ community, making networks within the University, especially finding commonalities with students they wouldn't have much interaction with, was a really positive experience."

The cross-faculty collaboration marks the third year that UNSW has participated in the annual parade.

"It was a really heart-warming experience. We were able to see the tangible and positive impact it had on the student community – they were really empowered," Mr Grealy says.

"We want to make sure students feel they are heard and respected and are our partners. I think this was a good example of that."

The student-led initiative is supported by the Division of Equity Diversity and Inclusion (EDI) – the advocate for a sense of belonging for all staff and students on campus.

Deputy Vice-Chancellor, Equity Diversity and Inclusion, Professor Eileen Baldry says Mardi Gras is a platform for the University to engage in conversations about the challenges facing the LGBTIQ+ community.



UNSW's Mardi Gras marchers were emblazoned with a gold representation of the University's mascot, Clancy the Lion. Photos: Nyasha Nyakuengama

"Our participation is both a symbol and a genuine activity that signals our commitment to that group of students and staff," Professor Baldry says. "It is one of the key ways we can show our support for the LGBTIQ+ community and celebrate with them."

Initiatives pioneered by the Division draw attention to a range of community

issues, aiming to start conversations and lead debates on campus and in the wider community.

Five new Diversity Champions commenced in January 2018 to make change in equity, diversity and inclusion as part of the Division's key priority to make UNSW a place for everybody.

The Division also offers training to the community – educating individuals on disability, flexible work and women in leadership, among other resonating topics.

"The end goal for the Division is for inclusivity, diversity, respect and equity to be the normal way that the University works – these behaviours shouldn't be considered remarkable any longer," Professor Baldry says.

"The more equitable, diverse and inclusive we become, the more innovative and extraordinary research and teaching we will have."



When the Opal Tower at Sydney Olympic Park started cracking, residents were fearful their home was falling down around them. Lachlan Gilbert asked the Dean of Engineering, Mark Hoffman, about his leadership of the investigation into the building's structural integrity.

Mark Hoffman.

**LACHLAN GILBERT** Can you tell me about how you came to be involved in the Opal Tower investigation?

**MARK HOFFMAN** On Christmas Eve, some people living on the 10th floor of the Opal Tower heard a loud bang and they went out and saw that some external walls had cracked, so they called in the onsite building manager. The building manager got the authorities involved and they cleared the building.

And on the morning of the 27th, the then NSW Minister of Planning, Anthony Roberts, decided that he really needed some independent advice. And so I was contacted, as was [Newcastle Emeritus Professor] John Carter, who is a geotechnical engineer, because a lot of the rumours flying around at the time were saying there was an issue with the foundations, and that's his area.

**LG** So how did that conversation go?

**MH** I was about to head off on a family holiday – I was actually at Bunnings at the time when the Planning Minister calls up. So I went through all this about the Opal Tower with him in Aisle 17 of Bunnings at Chatswood with my nine-year-old daughter going, 'Dad, this is boring, come on!'. Anyway, that afternoon John [Carter] and I went out to the site for a look around.

It was quite obvious, early on, that there was a significant issue with reinforced concrete fracture.

And that's when we got [UNSW Head of Civil and Environmental Engineering] Professor Stephen Foster involved. Steve actually wrote the Concrete Structures Standard for Australia, so he was a great asset to have onboard.

**LG** Were there residents still in the building when you arrived?

**MH** On the afternoon of the 27th we were going in as everybody else was coming out – the lifts were packed with people who were trying to move. There were some pretty distressed-looking people too, I have to say.

**LG: What were your first impressions?**

**MH** We worked out quite quickly it wasn't the foundations at all – they were fine. So we

CONTINUED PAGE 12

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started reviewing the site, doing calculations, speaking to people. The engineering company WSP was very open and helpful, as were the builders, Icon. We worked through it all and came out with an interim report on the fourth of January, because people just wanted to know what was happening.

#### LG What were your findings?

**MH** We identified a combination of design and construction issues which we confirmed in the final report on February 22. Essentially, there were some changes made to the initial design during the construction process which raised the loads on some beams. There were then some inappropriate aspects to the construction, and when combined, they led to the damage. The ultimate issue was, however, around design approvals and monitoring during construction. This meant some non-standard practices slipped through.

#### LG Can you elaborate?

**MH** In one case the initial approved design was changed, specifically to reduce the amount of grout between a pre-cast concrete panel and the hob beam. When the amount of grout was reduced then the local load on the hob beams increased. In the level 10 case, which was heard on Christmas Eve, it was incorrectly placed electrical conduit and reinforcing steel, and a repair to the panel, which reduced the

hob beam's strength, and so it failed.

Another beam was found to have failed because a lower strength concrete was used. Different strengths of concrete are often used when you're building a large building. And of course, they're bringing trucks in all the time to pour the concrete, and during this process they poured one of the beams with a lower strength concrete than the others.

Then we had to ask, why wasn't this dealt with at the time? We discovered that various versions of the design drawings indicated different strengths of concrete. Some people were claiming 'this is what it should be', while others pointed to another design document and said 'no, this is what it should be'. It was not immediately clear to us who were correct. What was clear, however, was that one beam was made from lower strength concrete than the others and it was the one that failed. There was also a grouting issue.

#### LG So what were your recommendations?

**MH** The first recommendation was around the process to fix the structural damage in the building. Very quickly, the risk factor was reduced by inserting some grout and bracing around the damaged sections. Some highly reputable independent engineering teams have designed structural rectifications and by the time they're finished, it will be far stronger than it would have been normally.

Other recommendations were about how to avoid these incidents in the future.



The Opal Tower will now be far stronger than it would have been before the damage was repaired.

Photo: Shutterstock

Australia's National Construction Code is based on the principle that we want our buildings to be structurally safe. And they are! But the full breadth of consumer expectations regarding building quality is not really addressed in that code. This is left to the state governments, and they have been lax in this regard.

In NSW to date, much has been vested in a sign-off from a building certifier, and then it's all okay. Now in the case of Opal Tower, the certifier had done that, and had done nothing wrong that we could see. But the certifier's job is not to check that everything's okay, it's just to check that all the appropriate approvals have been signed off. So the certifier basically signs off on a whole tiered approach where somebody signed off something that wasn't right. But there's no real double-checking, nor is it transparent.

#### LG How was it not transparent?

**MH** For example, we had a ministerial directive and it still took us quite a lot of time to get some of this documentation – people weren't being obstructionist, they just couldn't access it easily. We recommended that all of this documentation should be on a curated website. If it's transparent and people's names have been put on it, they have a far different approach to doing the work than when they know that it's just going to be filed away in some 'drawer'.

#### LG What were other recommendations?

**MH** NSW doesn't register engineers so anyone can basically put up a website and say 'I'll manage the project and sign off on designs and check the construction'. And so we've recommended the registering of engineers.

Another issue is there's no clear process for changing an original design. When you're building, things happen, designs need to be changed or, for example, the concrete truck that came in and poured the concrete for that beam – it was the wrong truck. With hundreds turning up in the course of the building, it's no surprise there's one mistake. There should have been a formal sign-off process by qualified and registered people and there wasn't.

The same independent checking would have clarified the design ambiguities we also identified.

What we've said is, designs and any changes to them have got to be signed off by qualified and registered engineers. Once that is in place, your system becomes much more robust and it's not that much more expensive, if one focuses on critical components.

#### LG It looked like a stressful time for the residents who had to find somewhere to live really quickly around Christmas. What was your impression of that?

**MH** The builder acted extraordinarily well. As soon as it was clear that people had to leave they found them accommodation and they gave them a living allowance for a long period of time.

#### LG A newspaper opinion piece in February made the point that in one sense, the people living in the Opal Tower were

lucky that it happened on Christmas Eve because it got such wide media coverage. The article implied there were many unreported other cases in NSW. What do you think about that?

**MH** There are very rarely major structural issues with the design and construction of buildings in Australia, as we saw here. However, things are often not built as they should have been, such as leaking showers, leaking pipes, or the electrical work is not quite done as it should have been. All of these issues are happening way too often and that's the gap in the system.

So yes, quality is a real issue. But the safety through the National Construction Code is more robust. From a quality point of view, there are definitely problems in the construction industry, from an overall building structural safety point of view, we're in reasonable shape.

**LG So what do you think will happen moving on from this?**

**MH** I think this whole incident will be a real watershed for the construction industry and the way it's regulated in NSW. There'd been a number of reports and anecdotal discussions about these sort of problems but no one really wanted to grasp the nettle. But now the Opal Tower incident has brought it all into very sharp focus, so hopefully the construction industry will be the better for it.

Professor Randolph hopes to see the balance of power shift towards the consumer, with increased transparency, extensive building documentation, and more information about track records.

"Thousands of consumers are buying properties and they really don't know whether they're good, bad or indifferent.

"We need to get this information and knowledge into the hands of the consumers which will help shift the balance into their hands rather than have it all on the side of the developers.

"The good developers will welcome it and welcome a more knowledgeable consumer," he says. "The bad ones will be squeezed out of the market."

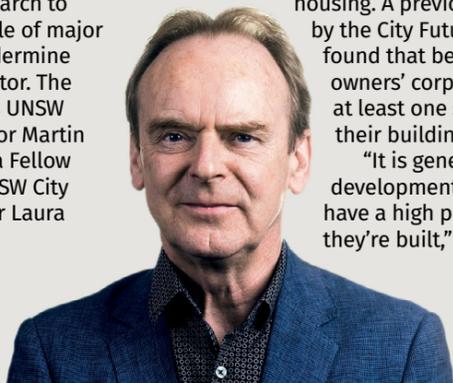
## Researchers to investigate major building defects

The City Futures Research Centre is investigating the multi-unit housing sector and will propose changes to protect people buying units.  
By Ben Knight.

UNSW Sydney's City Futures Research Centre will address the severe and growing concern about building quality issues in the multi-unit housing sector.

The centre has been awarded a \$273,702 ARC Linkage Grant for a two-year project to tackle major defects in strata housing in NSW.

The project, led by UNSW City Futures Director Professor Bill Randolph (pictured), will build on previous research to accurately identify the scale of major defects threatening to undermine the multi-unit housing sector. The project team also includes UNSW Built Environment Professor Martin Loosemore, UNSW Scientia Fellow Dr Hazel Easthope and UNSW City Futures Research Fellow Dr Laura Crommelin.



As well as identifying the prevalence of significant building defects, the project will seek to understand the causes and provide innovative solutions to improve housing quality, which could bring about sweeping changes to the sector.

The multi-unit housing sector in Australia is estimated to be worth more than \$1 trillion and provides almost half of new Australian housing. A previous study conducted by the City Futures Research Centre found that between 72% and 85% of owners' corporations had identified at least one significant defect in their building.

"It is generally recognised that developments in residential buildings have a high proportion of defects when they're built," says Professor Randolph.

# In search of hope

We all have the power to change the course of history, says Tim Costello in this edited version of his Gandhi Oration delivered at UNSW.



Reverend Tim Costello delivers the Gandhi Oration.  
Photo: Jacquie Manning

For most of his extraordinary life, Albert Einstein hung portraits on his wall of two scientists, Isaac Newton and James Maxwell, as role models to inspire him.

Near the end of his life, Einstein replaced them with a portrait of the Mahatma Gandhi.

Einstein said he realised he needed role models, not of success, but of humility. He called Gandhi one of the greatest moral leaders of all time.

Einstein wrote: “I believe that Gandhi’s views were the most enlightened of all the political men of our time.”

Gandhi was a great revolutionary but his revolutions were peaceful. He fought injustice by practising justice, he fought against violence non-violently, he opposed discrimination by embracing the oppressed. His ideals of non-violence and universal humanity still inform and inspire.

He said all our activities should be centred in truth. He said truth would always conquer untruth.

In this era of the post-truth 21st century, where politicians stoke irrational fears to hold on to power, we certainly need devotion to truth.

## HOW RELEVANT IS GANDHI’S PHILOSOPHY?

It is undeniable that Gandhi was one of history’s momentous figures. Seventy-one years after his assassination, Gandhi’s global influence is still enormous. The fundamental issues he addressed – poverty and hunger, violence, war and injustice – remain with us as we struggle with the mixed benefits of globalisation, retribalisation,

the marginalisation of minorities.

Still relevant are Gandhi’s Seven Deadly Social Sins that lead to disconnection and violence: Wealth without work, Pleasure without conscience, Science without humanity, Knowledge without character, Politics without principle, Commerce without morality and Worship without sacrifice.

**GLOBALISATION** Gandhi was not against globalisation. But he did believe that it could lead to environmental hazards and hyper-consumerism. He was right.

Some development and connectedness has been greatly improved but richer nations still get richer and poorer nations remain poor.

We must look beyond our borders to the wellbeing of our 7.4 billion brothers and sisters on the planet.

A socially just society must put people first – not property or profits.

**SOCIAL JUSTICE** Why do some people get more than they need and some people miss out? I have always felt that the great lottery of life is unfair.

If injustice was merely a matter of evil people somewhere committing evil deeds, it would be easier to cope with. Gandhi said it was “not caring” that was the real problem in this. He said we win justice quickest by rendering justice to the other party.

But what exactly is social justice? Some on the Left would argue it means equality of outcomes, those on the Right are more likely to argue for equality of opportunities. The Oxford Dictionary defines social justice as:

“Justice in terms of the distribution of wealth, opportunities and privileges within a society.”

I would add to that definition. Social justice is about all having equal rights to basic liberties and needs and a just society is one that challenges injustice and values diversity. It is about sharing a common humanity. It is about fairness.

**WORLD VISION’S WORK** Gandhi believed in the power of small communities to overcome poverty and injustice.

Over the past few years, World Vision has been working to demonstrate how community-led development can provide an effective model for change.

We recognise that poverty is not just limited to a low income, but also includes a lack of access to services and essential goods. It includes financial poverty, but also inequity of opportunity, health, education, information, protection and civic participation.

At home, we know that enormous gaps exist between Indigenous and non-Indigenous Australians.

There needs to be change in the way that funding is provided to support Indigenous development.

Our approach provides opportunities for the Indigenous communities we work with to determine their own objectives, their own measures of success and a way to realise their own vision for the future.

**THE CHALLENGE AHEAD** I’ve learnt that ordinary people can change the course of history.

A fair and just society will encourage democratic principles of equality, opportunity, and mobility. It will also provide a legal framework for human rights.

Every just society must try to reduce the gap in income and wealth among its citizenry. This is achieved through some form of monetary redistribution and taxation and political will to do the right thing.

Polling from the Australia Institute consistently shows that the Australian public would prefer higher levels of spending on public services than lower tax collection.

In a just society, there must be a political and legal framework that protects and enhances the rights of the people. Laws that discriminate against specific groups (racial, ethnic or religious), under the guise of protecting the majority of people or preserving a way of life, are morally wrong.

They must be challenged.

## CAN POVERTY AND INJUSTICE BE SOLVED?

Our world is characterised by paradox. Overall globally, there is unparalleled prosperity but we are beset by political, economic, social and environmental issues.

There are many reasons why global poverty endures, and also some challenging truths to face.

Political will is vital, as is global stability and the protection of the natural world.

The solution also requires compassion and global citizenship by all people to ensure politicians have a mandate to act.

I don’t suggest for a moment that the solution is easy. But we have made some great advances.

Literally millions of children who are alive today wouldn’t be if we hadn’t given it our best shot. Millions more receive an education.

Currently, World Vision is deeply involved in working with other aid organisations and governments around the world to achieve Sustainable Development Goals.

These are a set of 17 globally agreed goals and targets designed to end extreme poverty by 2030.

**FOREIGN AID** Of every dollar donated to World Vision, 83.3 per cent goes to field programs and advocacy work.

Wherever World Vision works, our focus on equity is for all people.

Meanwhile, overseas aid provided by the federal government has hit rock-bottom. Australia spends \$4.04 billion on overseas aid – that’s just 0.22 per cent of our gross national income (GNI), or 22 cents in every \$100. This is set to drop even further to just 19 cents in every \$100 of GNI by 2021.

This means that, despite being one of the wealthiest and lowest-taxing nations and one of the most robust economies in the world, Australia is one of the least generous when it comes to aid.

**A MORE SECURE WORLD** Providing aid is the right thing to do in a moral sense, but it also advances global security.

The challenge from international terrorism is a call to concern ourselves with the fate of the marginalised in poor countries where aid can reduce the breeding grounds for violence and fanaticism.

Economic modelling from The Australian National University has found that every additional \$1 spent on Australian foreign aid in Asia has resulted in \$7.10 in Australian exports.

Our consciences call us to encourage economic development and reduce global poverty. But it is also in our national interest to do so.

We now need to ask ourselves as a nation what more we can do to inspire justice.

I believe there is an urgent need for



The annual Gandhi Remembrance Ceremony and Gandhi Oration is held at UNSW in co-ordination with India’s Martyrs’ Day, the anniversary of Mahatma Gandhi’s assassination on 30 January 1948. The Remembrance Ceremony is held at the Gandhi bust on the Library Lawn (pictured).

ordinary Australians to continue to engage on the issue of refugees and inform the debates about an offshore detention system that imprisons vulnerable people.

When we are either complacent about this issue or complicit in the punitive approach to asylum seekers, we have lost something that sits at the core of our democratic ideals.

## CAN ETHICS AND PROFIT GO TOGETHER?

Can ethics and profits mix? Absolutely. Companies that lay the framework for business ethics in all facets of operations are more likely to become and remain profitable than those that conduct business in an unethical manner.

There are many inherent challenges to moral leadership in a nation wedded to the notion that “the richer I am, the happier I will be”.

It’s really important that businesses realise they are trading in a global village and they need a global ethic. Too many in this nation are constantly fearing about tomorrow and living one day at a time.

They are always looking for the light at the end of the tunnel.

But what if WE are the light at the end of that tunnel? What if we are the only light?

## WHAT WE MUST DO

In Gandhi, we find a source of optimism – a belief that our world can change for the better.

All of us have to be a part of the solution. We all have gifts, privileges and talents to make a difference.

To quote Mahatma Gandhi, “in a gentle way you can shake the world” with the power of your beliefs, with the power of your conviction, with your devotion to the invincible truth. “Love and truth are faces of the same coin, both very difficult to practise, and the only things worth living for.” So let’s live in hope, be productive and useful. Once we choose hope, anything’s possible.

Reverend Tim Costello is one of Australia’s leading voices on social justice and humanitarian issues. He is the Chief Advocate for World Vision Australia.

Hear the full speech at [www.centreforideas.com/article/tim-costello-ordinary-people-can-change-course-history](http://www.centreforideas.com/article/tim-costello-ordinary-people-can-change-course-history)

# How a liquid metal discovery could solve a global challenge

A tenth of the planet's population could get access to clean drinking water at low cost thanks to breakthrough research by Professor Kourosh Kalantar-Zadeh. By Lachlan Gilbert.



When UNSW chemical engineer Professor Kourosh Kalantar-Zadeh first placed a chunk of aluminium into some liquid gallium, he was hoping nature would reveal some more of her secrets to add to our knowledge of the mysterious world of liquid metals.

But after seeing the results – sheets of aluminium oxide that formed at the surface of the gallium – he soon recognised a practical use of his discovery that could help achieve one of the biggest challenges facing the planet: giving people in the developing world access to clean drinking water.

Professor Kalantar-Zadeh wondered whether the extremely porous and layered wafers of aluminium oxide that emerged from the liquid gallium could be used to filter water polluted with toxic chemicals and make it drinkable.

“When we tested it, we pushed water contaminated with 10 times the safe level of lead in it through the filters and found the filtered water was completely safe and drinkable,” Professor Kalantar-Zadeh says.

In 2000, the Millennial Summit of the United Nations identified clean water access as one of the challenges facing humanity. It is estimated that 800 million people, or one in 10, do not have access to clean water.

What made Professor Kalantar-Zadeh's discovery a possible solution to this challenge was the fact the water filter



Professor Kourosh Kalantar-Zadeh.

material could be made so cheaply using simple equipment and at room temperature.

“If you really wanted to, you could make this in your kitchen,” he says.

“We published this concept and released it to the public domain, so people around the world can use the idea for free and implement it for enhancing the quality of their lives.

“This is all about a new paradigm. We haven't even begun to explore how we can use liquid metals as a base for manufacturing things that are cheap, green and safe for humans.”

Professor Kalantar-Zadeh says a German manufacturing company is looking into replicating the technology to produce portable water filtration devices at low cost. The portable filtration products that already remove heavy metals from water are prohibitively expensive to use in developing

countries, coming in at more than \$100 a unit. By contrast, each aluminium oxide filter produced from liquid gallium can be produced for as little as 10 cents.

Professor Kalantar-Zadeh says the technology can be put to good use in Africa and Asia in places where heavy metal ions in the water are at levels well beyond safe human consumption.

“You pour the contaminated water in the top of a flask with the aluminium oxide filter. Wait two minutes and the water that passes through the filter is now very clean water, completely drinkable. And the good thing is, this filter is very cheap,” he says.

“Up until now, to produce aluminium oxide, you needed to process aluminium at above 1000 degrees or use other energy intensive processes. Now we're talking about something you can do even under the sun in summer at 35 degrees.”

Professor Kalantar-Zadeh was awarded an ARC Australian Laureate Fellowship soon after joining UNSW's School of Chemical Engineering as part of the University's SHARP program in 2018.

His research that details the science behind making the water filter material was published in the journal *Advanced Function Materials* with former colleagues from RMIT. The work was funded by The ARC Centre for Future Low-Energy Electronics Technologies (FLEET).

# First to 100 – and planning for many more

UNSW is the first university to graduate 100 Indigenous Law students. The University's commitment to law reform to benefit Indigenous people is as deep as ever, writes *Belinda Henwood*.

The many and significant achievements of the first 100 Indigenous graduates from UNSW Law form a story that demands to be told, Dean of Law, Professor George Williams, says.

“The graduation of 100 Indigenous students from UNSW Law is a significant milestone. These students have gone on to extraordinary careers, ranging from high judicial office through to political and community service,” Professor Williams said at a celebration in March for the respective alumni and the ‘community’ of their families.

“Their success reflects the efforts of the students themselves, their families, their teachers and the many others who have provided support to ensure that they have access to a world-class legal education.”

Pro Vice-Chancellor, Indigenous, Professor Megan Davis, said at the event that the proudest and most active Aboriginal and Torres Strait Islander lawyers came from UNSW.

“UNSW Law has been home to so many Indigenous Law students, with academic staff who are very genuinely and deeply committed to the education of Aboriginal and Torres Strait Islander students as well as research and advocacy for law reform that impacts the lives of Indigenous peoples,” Professor Davis said.

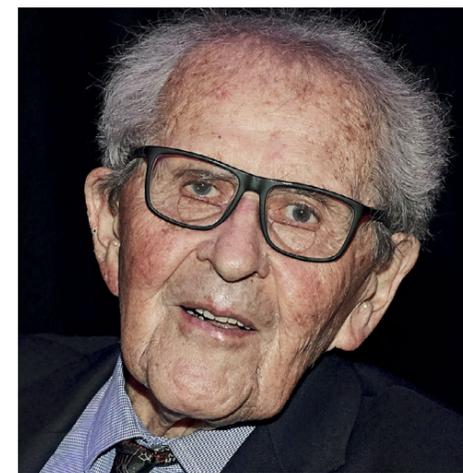
The event wasn't all talk. The crowd arrived to the sound of Evie J Wylie's singing and Rhyann Clapham (Dobby), hip-hop artist and UNSW's first Indigenous Bachelor of Music graduate, performed.

Many alumni sent a strong message that their individual achievements were grounded in the support they had received from their families. They also acknowledged the Law School and academics.

Jenavive Westbury (2018), now working at Legal Aid as a project officer, worked closely with the Faculty to interview alumni for both the video and booklet for the event.



UNSW Sydney Pro Vice-Chancellor, Indigenous, Professor Megan Davis, at the celebration of 100 Indigenous graduates. BELOW: Founding Dean, Hal Wootten.



Hal Wootten AC QC, who set the faculty on a path of promoting and supporting Indigenous legal education back in 1971.

“As Foundation Dean with no Faculty yet appointed, it fell to me to respond during 1970 to a challenge from young Aboriginal leaders in Redfern, who saw the new Law School's vision as directly relevant to the harsh and often illegal treatment they received at the hands of police,” he said in a booklet, *Celebrating 100 Indigenous UNSW Law Graduates*, produced for the event.

“To meet this challenge, I worked with these young leaders, and others in the Redfern community, to establish The Aboriginal Legal Service, the first such community-controlled organisation in Australia.”

In time, the Aboriginal Legal Service became a network of government-funded legal services for Indigenous people all over the country.

Emeritus Professor Wootten said the experience led him to take the first steps to ensure that there was an avenue of special admission available to Indigenous students in every UNSW faculty, should they need it.

Now, UNSW Law School graduates more Indigenous Law students than any other law faculty in Australia.

“They [the Faculty] were really invested in getting us not only into the degree, but through the degree,” she says.

“When I was really struggling with my studies, I received help that I didn't even ask for. Jeni Engel [the Director of Indigenous Legal Education] talked to Shalom College and Nura Gili to get me a residential place when I didn't have anywhere to live.”

As well as celebrating alumni achievements, the event paid tribute to the Founding Dean's commitment to social justice for Indigenous Australians. Among the many distinguished guests was

# Eye care revolution for millions

In a country where optometrists are one in 4 million, UNSW is supporting a dramatic expansion in health care that will change how many people see their world. By *Lucy Carroll*.



**ABOVE:** Makerere University School of Optometry and Vision Science students practise contact lens insertion and removal.

**BELOW:** Dr Kathleen Watt and Associate Professor Isabelle Jalbert with students at the Makerere University Optometry and Vision Science Teaching Clinic.

A partnership between UNSW Sydney academics and Makerere University in Kampala, Uganda, will train optometrists and transform access to eye care services for thousands of people affected by vision problems.

The team, led by Associate Professor Isabelle Jalbert and Dr Kathleen Watt from the School of Optometry and Vision Science, will oversee the training of local optometrists, the creation of specialist eye health programs and curriculum development for the first optometry degree ratified in Uganda.

“There are less than 10 practising optometrists in Uganda to service about 40 million people,” Dr Jalbert says. “All of them received their training overseas.

“It’s a really young profession and there is a huge need to train and build up the workforce to provide primary eye care.”

The team from UNSW Science, supported by UNSW’s Institute for Global Development, will spend the next year visiting Makerere University to teach students and support the faculty, particularly in specialised fields of advanced contact lenses training, binocular vision, paediatric optometry and ocular diseases.

“Our team will travel to Uganda four times this year to teach through practical workshops and provide online training material that students can access

outside of the visits. The optometry faculty at Makerere University is in the process of being built up and is very stretched in covering all the teaching required,” says Dr Jalbert.

The School of Optometry at Makerere University is a collaboration between UNSW, the Brien Holden Vision Institute, the Australian Department of Foreign Affairs and Trade, Optometry Giving Sight, Light for the World, and the Optometrist Association of Uganda. The first group of Ugandan-trained optometrists graduated from Makerere University in January.

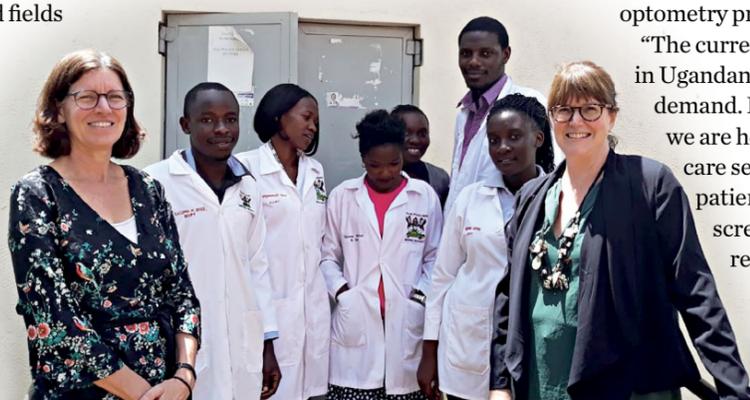
Uganda is one of the African countries supporting optometry as a public health priority to address the growing need of uncorrected sight. Training optometrists

locally in Uganda using internationally developed teaching materials and advanced equipment will help ensure the population receives basic services including prescription eye glasses, eye exams, contact lenses and the prevention and detection of eye disease.

Dr Anguyo Dralega, Head of the Optometry School, Makerere University, says: “Young optometrists are the building blocks for a sustainable eye care service in Uganda. They will relieve the country’s 45 ophthalmologists from the management of eye conditions, allowing them to concentrate on other areas of specialties. The optometrists will help improve the quality of life for many Ugandans with uncorrected vision impairment by providing refraction services and appropriate glasses. The benefit of this simple measure cannot be underestimated by a life diminished through poor vision.”

Dr Jalbert says the growth of the school and ongoing work of Makerere University is helping to establish Uganda as a leader in developing a sustainable East African optometry program.

“The current ophthalmologists working in Ugandan hospitals are unable to meet demand. By training local optometrists, we are helping to supply primary eye care services which is key for triaging patients and providing vision screening and services across regions,” she says.



# Walking between two worlds

Business School graduate Dylan Booth is determined to reshape the landscape of Indigenous affairs in Australia. By *Ibrar Khan*.

For many UNSW Sydney students, the idea of their culture, tradition, who they are, and their professional career, is one and the same as they progress through life.

According to UNSW Business School graduate Dylan Booth, for many Indigenous people it isn’t as simple as that.

“Walking in two worlds – it’s a concept that I’m sure everyone has heard. It’s the idea that as Aboriginal and Torres Strait Islander people we often live in two distinctly different worlds: that of our professional careers and that of our culture,” Mr Booth says.

Mr Booth is a proud Kamilaroi man, a UNSW Sydney alumnus and a consultant in professional services firm EY’s Indigenous Sector Practice and Transaction Advisory Services.

His relationship with UNSW Business School began in 2012 as he was getting ready to sit his Higher School Certificate and make a decision about his future.

“My careers advisor at school set up a meeting with Nura Gili, the Indigenous Programs Unit at UNSW. Next thing I was invited to the inaugural UNSW Business School Indigenous Accounting forum.”

The Indigenous Accounting forum was an initiative of Rebecca Harcourt, Program Manager Indigenous Business Education at UNSW Business School.

“I attended the forum, met industry leaders, UNSW staff and current students and that was it, I was sold,” Mr Booth says.

“I couldn’t believe that I had been accepted to study at one of Australia’s leading business schools. I was excited to start the next chapter of my life.”

The journey of navigating the two overlapped worlds had well and truly begun. Living away from home for the first time and adjusting to university life was challenging. The UNSW Business School graduate says the hardest part was being away from his family.



**A UNSW family:** Dylan Booth (second from left) with siblings Ariel, Brodie and CJ.

*‘Choice is something that too few Indigenous people have. This is something that I am determined to change.’*

Undeterred, however, he completed internships at AMP Capital NSW Procurement and Allens-Linklaters, and in 2016 he graduated with a Bachelor of Commerce, majoring in International Business and Business Law.

“I was the first person in my family to finish year 12, go to university and get a degree,” he says. “I’m proud to say that my sister Ariel is currently studying at the UNSW Business

School, and my other siblings, Brodie and CJ, have ambitions to do the same. I am immensely proud of them.”

After graduating, Mr Booth joined KPMG and “fell in love with consulting”.

“I decided to leave KPMG after my grad year to take up my current role at EY and pursue what I am passionate about – improving outcomes for Aboriginal and Torres Strait Islander people. In the Indigenous Sector Practice we work with and for our clients to do exactly that.”

He relishes the opportunity to work with the Indigenous community and address equality issues at a national level.

Mr Booth has worked on projects that focus on improving outcomes for Aboriginal children in out-of-home care and supporting Aboriginal families, and has designed policy frameworks for state government agencies to increase Indigenous participation in procurement, employment and community development.

His latest project aims to ensure that every Aboriginal or Torres Strait Islander person living with a disability has access to the essential medical services they need.

“I feel as though I have a cultural obligation to do what I can,” he says. “During my career I’ve come to understand that it’s not always what you can gain but rather what you endeavour to give back that’s important.”

Being a graduate from one of the most prestigious business schools in Australia is a stepping stone, he says.

“Through education, I have the privilege of choice ... something that too few Indigenous people have. This is something that I am determined to change. I am motivated to change the landscape of Indigenous affairs in this country, one way or another.”

The UNSW alumnus attributes his success to the hard work done by his Elders.

“I am a firm believer that I am here because I am standing on the shoulders of the giants who have come before me,” he says.

# Keep your lid on



Photos: Shutterstock

A UNSW study has shown a clear link between mandatory helmet laws and a drastic reduction in cycling fatalities, defying critics of the laws, writes *Lachlan Gilbert*.

The evidence is in: Australian mandatory helmet laws brought in to reduce fatalities in cycling have worked, with a world-first study of such laws at UNSW Sydney showing they led to an immediate 46% drop in fatalities and have saved billions of dollars in medical costs since 1990.

Study author Emeritus Professor Raphael Grzebieta of the Transport and Road Safety (TARS) Research Centre, says the statistics offer clear and solid scientific evidence that mandatory helmet laws (MHL) have been effective in reducing injuries in Australia.

“There was an immediate 46% reduction in the rate of cycling fatalities per 100,000 population following the introduction of bicycle helmet legislation,” says study lead author Professor Jake Olivier, of UNSW’s

School of Mathematics and Statistics and the Deputy Director of TARS. “This decline has been maintained since 1990 and we estimate 1332 fewer cycling fatalities associated with the introduction of bicycle helmet legislation to date.”

Australia does not have national road laws as such, but after Victoria brought in mandatory helmet laws in 1990 the remaining states and territories had followed suit by 1992. This study is the first in the world to examine the effects of mandatory helmet laws applied on a national scale where those laws apply to all ages and are dutifully enforced.

The findings of the study are in stark contrast with claims made by anti-helmet advocates who believe helmets do not

reduce fatalities. Instead, they say, MHL have deterred people from cycling and have reduced the number of fatalities only by lowering participation rates.

The authors of the study (“The impact of bicycle helmet legislation on cycling fatalities in Australia”, published in the *International Journal of Epidemiology*) address this by pointing to numerous international studies, including their own, that found no strong evidence for MHL leading to fewer people cycling. Professor Grzebieta says a small but vocal group of anti-helmet advocates are ill-informed and incorrect in claiming that MHL has been a disaster for cycling in Australia.

Professor Olivier concurs and says misinformation such as this has been present from the beginning.

He doesn’t expect the most vocal advocates to be moved by the research.

“It is one of those things where it has been repeated so many times that people just

believe it to be true, and won’t question it because they’ve heard it so often,” he says.

“These are the people who have made calls to repeal or weaken bicycle helmet legislation in Australia. The results from this study are not supportive of those initiatives.”

Professor Grzebieta takes this idea further: “If Australian helmet laws were repealed there would be a sudden [increase] in the rate of serious head injuries and fatalities among cyclists involved in a crash. The subsequent increase in hospitalisation costs would further exacerbate the already overwhelming demand for crash trauma treatment at hospitals and cause a significant increase in health costs.”

Instead, both authors call for strategies to improve cycling safety such as appropriately designed segregated bicycle infrastructure, something that Professor Olivier says is sadly lacking in Australia when compared with European countries where there are often clearly designated spaces for pedestrians, cyclists and motorists.

He notes that “this senseless focus on helmet legislation detracts from the more important concerns about construction of dedicated cycling infrastructure, education of all road users, and supportive legislation to protect cyclists, such as minimum passing distances”.

Professor Grzebieta agrees, saying “it is well known the primary reasons for not cycling in urban Australia are the lack of infrastructure and safety concerns due to interactions with motorised vehicles”.

Next the authors will be looking at the health benefits of cycling when not using a helmet versus those of introducing MHL on a population rate basis.

“There are numerous claims that the benefits of cycling far outweigh the ‘disbenefit’ of introducing mandatory helmet laws,” Professor Grzebieta says.

“We are highly sceptical of this claim and suspect poor assumptions are being made in the scientific methodology.”

## Slow down to save lives

The speed limit in areas with high pedestrian activity should be reduced to 30 to 40km/h, say UNSW researchers. By *Isabelle Dubach*.

Motor vehicles shouldn’t be allowed to go faster than 40km/h – preferably 30km/h – in high pedestrian active areas, a UNSW Sydney study has found.

A high pedestrian activity area includes any part of a city’s CBD, shopping strips along roads in suburbs and country towns, roads in front of schools during morning peak-hour arrivals and afternoon departures, and sports venues with crowds crossing roads.

“Pedestrians struck in vehicle crashes are the largest group of traffic fatalities worldwide – and excessive speed is the biggest factor in such crashes,” says UNSW Professor Jake Olivier, who presented the findings to the US National Academies of Sciences, Engineering, and Medicine’s Transport Research Board’s annual meeting. The work is an international collaboration of researchers at UNSW Sydney and UHasselt in Belgium.

“Even an impact speed of as low as around 30km/h is equivalent to what you would experience if you fell off the roof of your house,” Professor Olivier says.

However, there’s still a lot of debate around what safe maximum speed limits are for vehicles in high pedestrian active areas, because the odds for any given particular speed vary extensively between studies.

“That’s why we wanted to see how the likelihood of a pedestrian dying in a crash changed at different speeds – and our study is the largest to date with data on over 37,000 pedestrians,” Professor Olivier says.

In the study, the scientists searched four electronic databases to identify studies that reported data on pedestrian fatalities or serious injuries from motorised vehicle crashes with known estimated impact speed. They then analysed data from 20 studies – containing data from six countries – for their meta-analysis.

The analysis found that risk of a fatality reaches 5% at an estimated impact speed of



28km/h, 10% at 36km/h, 50% at 57km/h, 75% at 67km/h and 90% at 78km/h.

“So, for example, if a pedestrian gets hit by a vehicle at 30km/h impact speed, the average risk of death is at 6% – but when the impact speed increases by 1km/h, the odds of a pedestrian fatality increase on average by 11%,” says Professor Olivier.

“Therefore, assuming a vehicle travelling at the speed limit will slow down by at least 25% prior to impact, speed limits for areas with high pedestrian activity should be set to 30 to 40km/h.”

The researchers stress that it is important for policy makers to prescribe speeds that are safe, i.e. survivable, for all road users.

They say their recommendations are in line with international best practice.

“The speed limits we propose for high active areas are commonly used by best practice countries – such as Sweden, the Netherlands and the UK – that have the lowest road fatality rates and that practise a Safe System Approach to road safety,” says Professor Raphael Grzebieta, Emeritus Professor at UNSW Science’s School of Aviation. “Our urban limit of 50km/h is simply much too high.”

In Australia, 5.34 in 100,000 people die in a motorised car crash every year, placing Australia 15th lowest out of the 31 nations with available data.

In energy-poor Malawi, life stops when the lights go out. Shanil Samarakoon is illuminating the future, writes *Ibrar Khan*.

**B**usiness School academic Shanil Samarakoon is on a mission to provide electricity to 10,000 homes in rural Malawi by 2023.

Mr Samarakoon, who teaches Social and Environmental Sustainability on the Master of Commerce program at UNSW Business School with the Centre for Social Impact (CSI), says the project is close to his heart.

“There’s a very personal connection for me,” Mr Samarakoon says. “I grew up across Botswana and Malawi in southern Africa, although my parents are both from Sri Lanka. My early childhood was spent across

## Let there BE LIGHT

those three countries and I have very fond memories growing up there. I’ve always had a passion to want to contribute when I was older and my work as a social entrepreneur and as an academic is very much geared towards making contributions in those countries I have grown up across.”

In 2010, Mr Samarakoon and his partners established Empower Projects, a non-profit organisation which helps rural communities in Malawi establish cooperatives as a vehicle for development.

Empower helps them establish community banks and form agricultural co-ops, and works with schools to promote sustainable solutions such as solar, food gardens, eco-sanitation and water sanitation.

Mr Samarakoon is a PhD Candidate (Faculty of Arts and Social Sciences) in an emerging interdisciplinary field called Energy Justice.

Focussing on issues relating to solar adoption in Malawi, he says “energy access” is paramount to developing communities.

“What I’ve noticed across the last decade of work in the social sector in Sri Lanka and in Malawi is that energy poverty is



**ABOVE:** Energy access can be transformative for children in developing communities, says Shanil Samarakoon.

**LEFT:** UNSW Business School academic Shanil Samarakoon at work in Malawi.

is to generate revenue for non-profit work.

“The direct benefits of solar are replacing existing sources of energy – people might have once used kerosene lamps and now they’ve moved to torches powered by batteries, but that’s an ongoing expense,” Mr Samarakoon says.

Using solar power eliminates that expense, with lighting delivering the social and safety benefits.

“Often the social and economic activity ends once the sun sets; the social benefits of having access to lighting means extending the productive day,” he says.

“Having access to good source of light means that there can be more social and livelihood activity. Children are able to study at night. At a community scale, [having] lighting means there’s an increased sense of safety. There’s more vibrancy if people are able to interact with one another.”

a huge issue and a major constraint to development,” he says. “Energy access creates so many opportunities, particularly for low income households ... I have really seen how transformative the impact of energy access can be.”

Malawi has a population of 17.5 million, but only 10% of residents have access to grid-based electricity. Mr Samarakoon says this is one of the reasons for the establishment of Zuwa Energy – a social business that sells affordable solar household systems. The pay-as-you-go technology means Malawians can take up to 21 months to pay for a system.

He says the other function of Zuwa Energy

## Finding his inner Bulldog

When Dean Towers was de-listed by the Sydney Swans, it was an opportunity at UNSW that put him back in the game, writes *Megan Maurice*.

**F**rom the AFL to the Sydney club competition and student life – the last few months have been quite a ride for former Sydney Swans player Dean Towers.

After being de-listed by the Swans in October last year, Mr Towers decided to reassess his career goals and focus on study. However, at 28 he still felt he had a lot to offer in the football world.

Through the Elite Athlete Program at UNSW, he came across the perfect opportunity – studying Exercise Physiology, while taking on the role of player-coach at UNSW-ES Bulldogs.

“I talked to a lot of the various unis here and eventually settled on Exercise Physiology as a career pathway,” he says.

“Talking to some exercise physiologists who I knew, they said UNSW’s course is highly recognised and they haven’t heard a bad thing about it.

“UNSW was also good at communicating with me, and helping facilitate transferring my credits from previous studies, and were just very welcoming.

“They made the process very easy on me.”

Mr Towers is excited about his decision and feels that he has made the perfect choice.

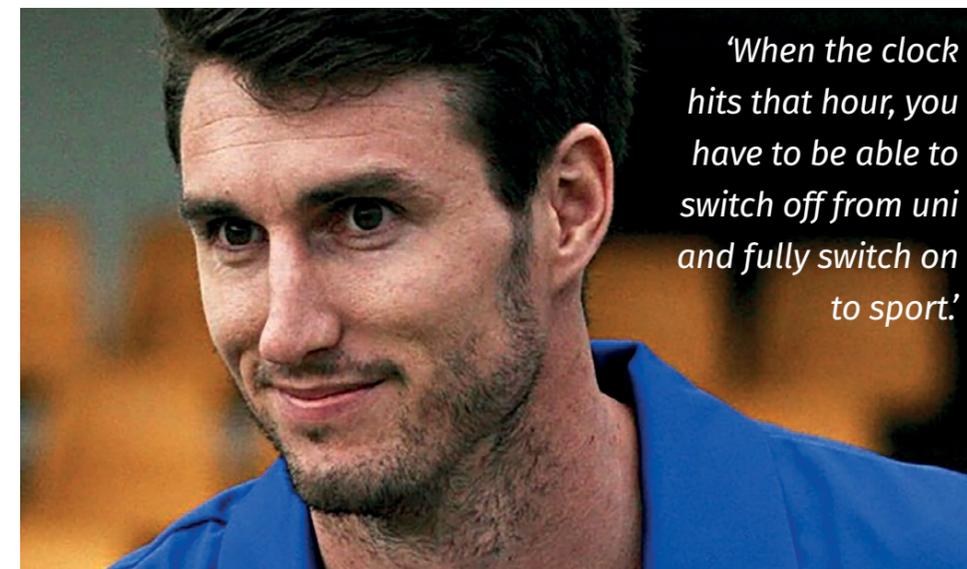
“It took me a while to realise after football that I wanted to work with different people – not the same people every day,” he says.

“I also wanted to make a difference in people’s lives – and you can do all of that with Exercise Physiology.

“The field’s just growing, so there’s different types of jobs popping up for exercise physiologists everywhere, which really appeals to me – I like the idea of not getting stuck in the same routine for a whole year.”

Towers is not making sweeping changes at the AFL club, which has had plenty of success in recent years with four premierships across the grades in 2018 and a swathe of players drafted to AFL and AFLW clubs.

Instead he is integrating his knowledge and the elite coaching he has received throughout



*“When the clock hits that hour, you have to be able to switch off from uni and fully switch on to sport.”*



**LEFT:** Bulldogs president Stephen Dunkley (left) introduces new coach Dean Towers at the club’s first pre-season training session.

Photos: UNSW-ES Bulldogs AFL Club

his career into the already excellent structure and culture of the club.

“I feel like I’m a pretty approachable person, so if anyone wants to talk to me about my journey, or they have any questions about the pathways and how to stand out and get better, then I’m an open book and they can come and speak to me,” he says.

Mr Towers certainly has a lot to offer student-athletes, off the field as well as on. Having balanced study with a professional sporting career in the past, he is well positioned to give advice to those embarking on that journey.

“It is really tough to balance sport and study,” he says.

“To make it as an elite athlete, sport has to be a main priority for you, and even then it might not work out, so you also have to do well at uni.

“So it’s just really being good at time management. You have to be right on to it – when the clock hits that hour, you have to be able to switch off from uni and fully switch on to sport.

“But as soon as that clock switches over again, you have to be able to change your mindset and get straight back into being a uni student and doing what’s right by you.”

With the club setting its sights on defending all four of its premierships, and maybe even picking up a few more, Mr Towers’ experience and leadership is vital for the 2019 season.

And while he is enjoying his mentoring role with up-and-coming footballers, Mr Towers is also cherishing the opportunity to be on the other side, striding down the path of life at the UNSW School of Medicine.

# Building for better living

The best built environment is inclusive, designed for people who are ageing and living with disability, writes *Ben Knight*.

**B**uilt Environment Professor Catherine Bridge is determined to improve the accessibility of the built environment and improve life for some of the most vulnerable populations – the elderly and the disabled.

Professor Bridge runs the Livability Design Lab at UNSW Built Environment, which pioneers inclusive design using cutting-edge technology such as motion capture and biomechanical analysis software to analyse the barriers to accessibility in the built environment.

She says that current assumptions about design are preventing the built environment from being inclusive.

“The idea of wellbeing is modelled on a healthy, middle-aged man, and so that is how it [the built environment] is designed,” she says. “This is not representative of the population ... especially those who experience functional impairment.”

The accessibility of the built environment is a factor of inclusion that is often overlooked, Professor Bridge says.

Even designs that are accessible are typically not aesthetic, which prevents people from engaging with their environments, particularly in the home, she says.

“Historically, modifications such as handrails and ramps have been designed by modifying industrial equipment ... or they’re things you would see in a hospital or in a public access bathroom, which are stigmatising because they scream ‘disability’.

“The goal should not be just to meet the minimum standards.”



Professor Catherine Bridge (right) is determined to improve the accessibility of the built environment through inclusive design that attends to the needs of diversity.

Professor Bridge says the need to improve the inclusiveness of the built environment is becoming especially urgent as the demographic shifts towards an ageing population.

“The ‘solution’ to a challenge such as population ageing is usually to build more hospitals or aged-care facilities.

“Instead, what we should be asking is: what else could we do that would prevent people from going to the hospital in the first place, or prevent people from going into an aged care facility, which will cost less and, in fact, have better economic and social outcomes?”

Professor Bridge believes the solution lies within the home. She hopes to see people empowered to live in their homes for longer, which can reduce the need for care, while improving quality of life in every metric.

“Overwhelmingly, the research shows that people want to remain in their homes, rather than enter institutional care facilities,” she says. “We know that [people

staying in their homes] can reduce the need for care by 47% and lead to a 40% improvement in quality of life.”

“If we can effectively delay [institutional care] by just five years through ageing-in-place, that is huge for not just the individual’s wellbeing, but also the taxpayer and the healthcare system.”

Professor Bridge is also the Director of the Home Modification Information Clearinghouse (HMinfo), an information service which provides the evidence base for housing retrofit in Australia.

“People historically ... have focused on only one aspect, either disability or sustainability, but no one looked at how they intersect,” she says.

“[HMinfo] is unique in that it bridges this gap between the wants, needs and desires of the older person or the person with the functional disability, and that of the industry – the built environment sector and the health sector.”

The information service combs through academic literature, industry best-practice principles and combines this with research from the Livability Design Lab to develop user-friendly materials, including factsheets and mobile applications, which have been used by more than 200,000 people, from consumers to industry and policymakers.

She says HMInfo provides practical support and empowers individuals to age in place for longer, enabling them to have greater autonomy and reduce the burden on Australia’s healthcare system.

# Life is good at 40 for Australia Ensemble

UNSW’s renowned chamber music ensemble is tuning up for a significant birthday, writes *Neil Martin*.



## Concert dates for the 2019 subscription series:

Sat August 17, 8pm **Cool Fire**

Sat September 14, 8pm **Heart \* Beat**

Sat October 12, 8pm **Guilty Pleasures**

All concerts held in UNSW’s Sir John Clancy Auditorium.

The Australia Ensemble has been resident at UNSW since 1980. L-R Ian Munro (piano), Dene Olding (violin), Irina Morozova (viola), Julian Smiles (cello), Geoffrey Collins (flute), Dimity Hall (violin), David Griffiths (clarinet). Centre: Paul Stanhope (Artistic Chair).

Photo: Quentin Jones

**L**ooking forward and looking back is the fitting way Artistic Chair Paul Stanhope describes the Australia Ensemble’s historic 40th season for 2019.

The Australia Ensemble, resident at UNSW Sydney, was set up in 1980 and has become widely regarded as this country’s finest chamber music group.

The ensemble consists of seven of Australia’s leading instrumentalists, performing a wide range of pieces during its annual subscription season of Saturday evening concerts.

This year’s season kicked off in March and April with concerts at UNSW’s Sir John Clancy Auditorium. Others are scheduled for August, September and October.

As this is the 40th season, Mr Stanhope has crafted a program that includes many of the players’ favourite pieces, as well as new music never heard before in Australia.

“This year, there are some retrospective things that the players really wanted to share with the audience, such as the Pierné Piano Quintet, which is not so well-known, but is a late-Romantic gem,” Mr Stanhope says.

“We also have some of the players’ favourite pieces such as the Brahms Serenade which is

*‘It was a real leap of faith that the University originally made to put on a professional ensemble like this and it’s become something of a trademark.’*

the very last piece in the whole season. But looking forward, there are new pieces – including a new commission by Jessica Wells who is a Sydney composer,” he adds.

“We’re also doing the Australian premieres of a couple of pieces. In the first concert we have David Bruce’s *Steampunk* and later in the year we have a piece by Paul Moravec. They are both really established composers in America, but we don’t really get to hear much of their music over here.

“One of the things we like to do is introduce new pieces to our audience and I’m especially interested in the *Steampunk* piece. It’s really lively and there is a theatrical element to it as well, which I think the audience is really going to love.”

Although the Australia Ensemble has a significant loyal following of music lovers, Mr Stanhope is keen to welcome new people.

He believes this is the perfect season to come along and experience a wide range of different styles.

“The programs are full of diversity. It’s not just a string quartet performing all night. There are different combinations of instruments that come together, plus guest artists such as mezzo soprano Fiona Campbell and harp player Alice Giles. Those new people bring a new energy to the performances.”

Mr Stanhope already has one eye on next year when the Australia Ensemble will celebrate 40 years since their very first concert back in 1980.

Plans for potential pieces are underway and the group’s artistic chair believes it will be a momentous occasion.

“I want to acknowledge the University’s support during what has been 40 years of great music-making,” he says.

“It was a real leap of faith that the University originally made to put on a professional ensemble like this and it’s become something of a trademark that they should be justifiably proud of.”

# Atwood woos with tales of creativity

Combining serious concerns with mischievous humour, Margaret Atwood encouraged her listeners to reconsider the future humanity is building during an exclusive event on Kensington campus.

After a sold-out UNSW Centre for Ideas appearance at the Opera House the previous day, Ms Atwood spoke with a mostly female undergraduate audience at the more intimate UNSW event.

Dr Fiona Morrison, Literary Studies senior lecturer in the Faculty of Arts & Social Sciences, led the discussion of Atwood's rich body of work.

Ms Atwood has written 16 novels, eight collections of short fiction, and 50 volumes of poetry, children's literature, fiction and non-fiction. As well as the 11 Emmy-award-winning *The Handmaid's Tale*, there is a TV adaptation of *Alias Grace*, and *MaddAddam Trilogy* has just gone into production.

"She is, of course, a great untold adaptor and reviser of works by others, including writers such as Homer and Shakespeare, and is involved very much in finding new shapes and forms for your work as counsel, as commentator and artistic force," Dr Morrison said.

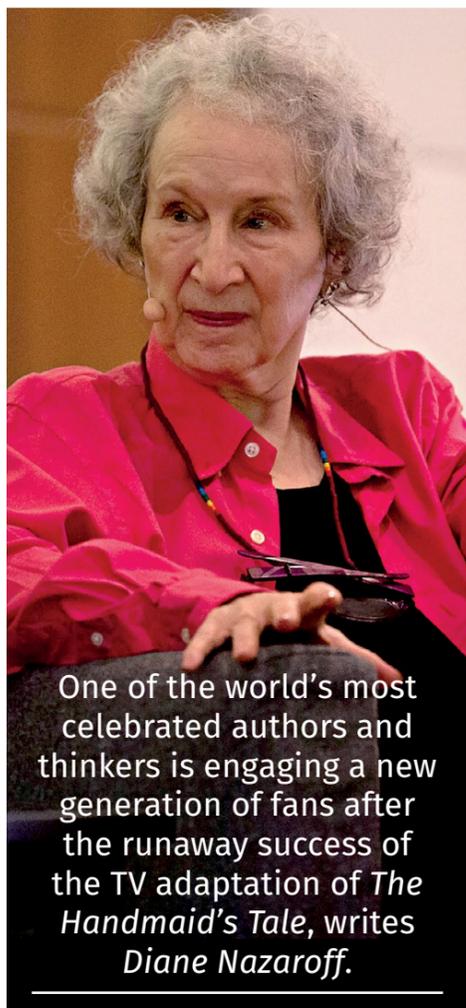
Described by *The New Yorker* as the "prophet of dystopia", Ms Atwood takes us into many speculative worlds in her novels, including futures which are centred in present-day reality – such as lack of action on climate change and extremist politics.

The world literary figure said her most terrifying dystopian plot was the 2003 speculative fiction book *Oryx and Crake*, adding that she would "have had more plastic in the ocean [if] writing it today".

"So, I think the scariest thing facing us is the ocean warming and acidifying. And is that kind of it for us, because the oceans make 60% to 80% of the oxygen we breathe?" Ms Atwood said.

The author was asked if she thought speculative fiction was an important genre to deal with contemporary political, economic and ecological issues.

"Speculative fiction says, 'This is where



One of the world's most celebrated authors and thinkers is engaging a new generation of fans after the runaway success of the TV adaptation of *The Handmaid's Tale*, writes Diane Nazaroff.

Margaret Atwood at UNSW Sydney. Photo: Louise Reily

we could go – is that where we want to live?," she said. "If we don't want to live there, maybe not go there. Maybe rearrange the blueprint so that we're going to be in a different kind of future."

Ms Atwood also talked about 18th and 19th century novels which "were both happily quite female-centric" but noted a change particularly after the '50s, when there was "a concerted effort to get women back into the home after the war".

"And to get them back into the home, [women] were told that their true nature, and the path towards fulfillment, is to

basically scoop out their brains."

She told the audience that she "luckily had a tomboy mother" who was "a very athletic person ... a speed skater" and a scientist father, both of whom "weren't interested in housework or gloves".

Ms Atwood didn't shy away from politics. When asked about the power of words and her favourite written sentence, she said, "It is true that words are very powerful, but they can be used negatively as well as positively ... Donald Trump tweets words."

Among the serious issues, the author also revealed her lighter side. At the Opera House event, she sang the Arrogant Worms' 'national anthem' – *Canada is Really Big* – unaccompanied. At UNSW, she talked about writing really silly birthday songs for her friends and relations.

At the end of her appearance at UNSW, Margaret Atwood explained how she ended up writing the introduction to Lewis Hyde's 1983 non-fiction book *The Gift*, which explored the value of giving over receiving.

Hyde described the book as being about the value of creativity and of its importance in a culture increasingly governed by money and overrun with commodities.

"It's the only book I recommend to young writers," said Ms Atwood.

"It's about the difference between the gift economy which art exists in, and the money economy that a work of art touches and has to pass through in order to turn back into a gift."

Many years ago, the author did a favour for her publisher and, in return, asked her publisher to read *The Gift* manuscript, which he later published.

"People trade stuff all the time. That's how human beings go about their daily lives, and in *The Gift* you will read why," Ms Atwood said.

"And the difference between gifts and the things you buy is that if you receive a gift, you owe – either to the person that you received from or to somebody else.

"And with writing, usually you receive the gift from previous writers, you incorporate it and then you pass it on."

# Voices in the water

Artist Allan Giddy's new project is creating a unique connection between young Indigenous poets, writes Diane Nazaroff.

Allan Giddy's *Flow* uses the movement of water to convey the voices of Indigenous children reading their poetry in their first language.

"The children's words, recorded and edited into a soundscape, are 'released' into the water to flow to the oceans," the public artist and director of the Environmental Research Institute for Art (ERIA) at UNSW Art & Design says.

The Royal Botanic Garden Sydney version of the installation is called *Cookaroo Flow* – 'Cookaroo' being the Gadigal name for the land where the Garden is located.

Recently on display in the Garden, it is invisible to passers-by but can be accessed via a stick held with one end in the water, the other against the ear.

Poetry for the Botanic Garden installation was created by Aboriginal students from Sydney and the Northern Territory during workshops hosted by poetry creation organisation Red Room Poetry last November.

Mr Giddy has received two grants to take his inventive Royal Botanic Garden Sydney water installation to other parts of NSW and Australia.

The funding from Create NSW and the Australia Council for the Arts will enable Mr Giddy to exhibit the installation in regional NSW (Ballina, Menindee and Broken Hill), the ACT and Victoria.

During this period, he will work with school students to record poetry across multiple languages in urban, regional and possibly remote communities.

He will also take *Flow* to Aotearoa (New Zealand) in October, and hopes to exhibit it elsewhere overseas, with the title of each iteration of the work incorporating the



TOP: Artist Allan Giddy (left) with Gadigal participants listening to their own voices.

ABOVE: Testing a version of the Flow installation.

Photos: Tad Souden

Indigenous name of the location.

"As the project progresses, the words that flow from children in Australia and around the world will, metaphorically, eventually meet and mix with each other, and with words from other First Cultures around Australia and overseas, in the

interconnected oceans of our globe.

"This intermingling of First Words will symbolise both the strength and support that First Cultures draw from establishing relationships with each other globally, and the interdependent nature of all humanity," Mr Giddy says.

*Flow*, which features on UNESCO's International Year of Indigenous Languages website, was conceived last year at Parihaka Pa, Taranaki, New Zealand, with children speaking *te reo Māori* (Māori language).

The New Zealand-born sculptor is a pioneer in the use of sustainable energy systems and light in 'time-based sculpture' and has worked with alternative energy systems in his sculpture and installation art for more than 20 years.

Mr Giddy's work has been shown at the Tate Modern, in Heidelberg and Rotterdam Town Halls, and numerous other international venues including Canada, Ireland and Finland. In recent years, he has completed a number of large public commissions in Australia, China, Ireland, Germany, the UK and New Zealand.

A past winner of NSW's most prestigious travelling art scholarship (the NSW – now the Helen Lempriere – Travelling Art Scholarship), Mr Giddy regularly engages in industry and other partnerships to achieve his projects.

Sarah Brough wants to know how time has shaped our galaxies – and she is a gender equity champion for the next generation of astronomers, writes *Ivy Shih*.

As an observational astronomer, Associate Professor Sarah Brough looks to the stars for answers – but her perspective wasn't always crystal clear.

After completing an undergraduate degree in Physics, Associate Professor Brough spent a year travelling and working, uncertain of what to do next.

It was a *New Scientist* article that pulled her back into the trajectory of scientific research and astronomy. The article was about an amazing new discovery, exploring how the universe was not only expanding, but swelling at an accelerating rate, an unknown force pushing it apart.

The work was jointly led by astrophysicist Professor Brian Schmidt, who would go on to be awarded the 2011 Nobel prize for this work. He is now the Vice-Chancellor at Australian National University.

"I found myself missing my identity as a scientist," says Associate Professor Brough.

"I remember just being really excited by the idea I could study really big galaxies."

She is particularly interested in what changes the shape of a galaxy over time. For instance, how did the Milky Way galaxy, home to our own solar system, evolve to get its distinctive, beautiful spiral arms?

The pursuit of such an answer has taken Associate Professor Brough to observatories around the world.

To her, telescopes are like time machines that allow us to travel back to study the evolution of galaxies. For example, Proxima Centauri, the closest star other than the Sun, is 4.5 light years away from Earth. Whenever we peer at it through a telescope, we are looking at light of a star that began its journey to Earth 4.5 years ago.

By collecting that light from a distant source, powerful telescopes can capture an image of what a galaxy looked like billions of years ago. It is possible to look further into

# The sky should be the limit



deep space, and so further back in time.

But how far back in time are we talking? Associate Professor Brough wants to look all the way back to the Big Bang 13.8 billion years ago. By piecing together images of galaxies, she can map the different stages of evolution of galaxies over time, including massive galaxies thousands of times the size of the Milky Way.

Equal to Associate Professor Brough's passion to unveil the evolution of some of our most massive galaxies is a keen drive to support the next generation of female astronomers.

The former Chair of the Astronomical Society of Australia's Inclusion, Diversity and Equity in Astronomy Chapter founded the first Australian Women in Astronomy workshop in 2011 to establish leadership support networks among women in the field.

"I really believe in mentoring and encouraging the younger generation, particularly women," says Associate Professor Brough. "It is about having those conversations more openly and having that top-down leadership."

In 2015, Associate Professor Brough was

selected to be in the Homeward Bound leadership program, which brings together future female leaders in STEM and empowers them with skills to impact policy and decision-making.

These days, Associate Professor Brough is leading Australia into a new astronomical survey of the southern sky.

The Cerro Pachón ridge in north-central Chile will soon be home to a new telescope that will be able to survey the whole Southern Hemisphere sky in just three days.

The goal for the 8.4-metre Large Synoptic Survey Telescope (LSST) is to take 800 separate images of each region of the night sky over 10 years.

Locked within those images are new data, opening up exciting new research, including mapping the evolution of massive galaxies.

It's those 'Aha!' moments that truly light up research for Associate Professor Brough, a feeling she wants to preserve and communicate to the general public.

"It is keeping that feeling of fundamental wonderment alive," she says.

"We as a society value that understanding and curiosity about the universe."

# Formative voice of an emerging university

UNSW pays tribute to renowned leader Emeritus Professor Sir Rupert Myers KBE AO, after his death in February at the age of 98. By *Stefanie Menezes*.

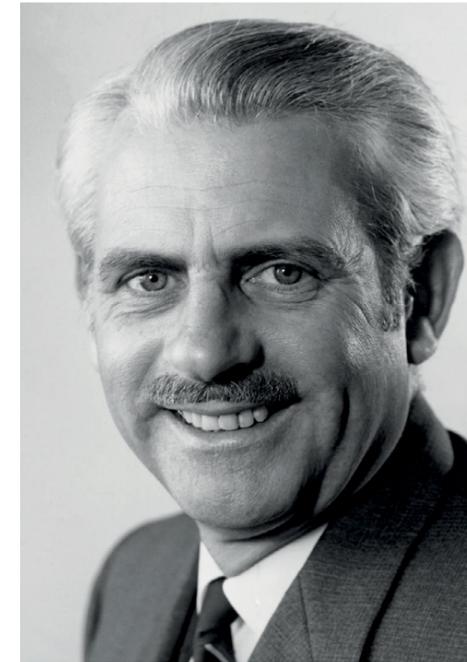
A materials scientist, academic and distinguished university administrator, Emeritus Professor Sir Rupert Myers was in 1948 one of the first two people to be awarded a PhD from an Australian university. As UNSW's second Vice-Chancellor, he was instrumental in establishing the University's character and presence in the academic world.

After developing processes for producing uranium powder and converting plutonium compounds into metal as a metallurgist in England, Sir Rupert joined UNSW in 1952 as the Foundation Chair of Metallurgy. In 1961 he became Pro Vice-Chancellor and then in 1969 he became Vice-Chancellor, continuing in that role until 1981.

The political climate of the '70s meant that Sir Rupert's term was a colourful and vocal time for students on campus, and his strong moral leadership saw him engage meaningfully, generously and often with a sense of humour.

He was also just as willing to be a figure of fun in his interactions with students as he was to be a serious advocate for the University and its mission. His first day as Vice-Chancellor coincided with the inauguration of Prince Charles as Prince of Wales. As such, Sir Rupert allowed the students to inaugurate him as 'Prince Rupert' – with a wheelchair throne and broom-handle sceptre, he was pushed among the student throng.

Sir Rupert's formidable leadership paired with his warmth and down-to-earth nature garnered him deep respect from colleagues and students alike. As CEO and



roving diplomat, he was recognised as the "essential consolidator".

He was instrumental in establishing UNSW's partnership with the Australian Defence Force Academy in Canberra, an achievement which gave him immense personal and professional satisfaction. Sir Rupert pushed to provide degree studies to uniformed officers because he believed in the benefits of a balanced and liberal education. He was responsible for establishing the Faculty of Law, and the decision to locate Australia's first national school of business administration, the AGSM, here at UNSW.

By 1976, just 27 years into the University's relatively young life and mid-way through Sir Rupert's tenure, UNSW became Australia's largest university with more than 18,000 students.

The current Chancellor, David Gonski, says he had a particularly special relationship with Sir Rupert.

"He was the Vice-Chancellor of UNSW

when I was a student, and he impressed me from that day right through to the present. He was a wonderful, wonderful man," Mr Gonski says.

"Sir Rupert was a renowned materials scientist and academic who will be deeply missed by the UNSW community. He led the University at a pivotal time in its history, one that was plagued with the student unrest of the '60s and '70s and a decline in funding. Sir Rupert's calm and prepared nature ensured UNSW remained peaceful during these times."

Throughout his illustrious career, Sir Rupert held numerous appointments and had been director or chairman of more than 20 boards and foundations, and president, councillor or member on at least another 12 occasions.

Among his honours, Sir Rupert was appointed a Knight Commander of the Order of the British Empire (KBE) in 1981. He was also appointed an Officer of the Order of Australia in the 1995 Australia Day Honours for his efforts in promoting innovation and commerce in the fields of science technology and engineering.

UNSW Sydney President and Vice-Chancellor Professor Ian Jacobs met Sir Rupert on a number of occasions.

"He was always supportive, interested, charming and thoughtful," he says.

"It was an inspiration to be able to meet a man who had such a big impact in the early years of UNSW."

Professor Jacobs expressed the University's condolences to Sir Rupert's four children, Philippa, Gillian, Michele and Stuart, and his second wife, Nancy.

"Many will also remember Sir Rupert's first wife Io. They made a formidable partnership and promoted the University with enthusiasm."

Family, friends and alumni attended a memorial service at UNSW Sydney's Kensington Campus on 11 March.

## Indigenous art the turning point for how Australians see themselves

A pioneering book gives a complete recasting of Australian art through exhibitions, writes *Diane Nazaroff*.

When artist and then Assistant Director of the Art Gallery of NSW Tony Tuckson curated the first national touring exhibition of Aboriginal art in 1960, it was widely believed to be a landmark exhibition.

The exhibition symbolised a shift in Australia's perception of Aboriginal art from ethnographica to the status of fine art.

"Aboriginal art is at the core of the understanding of Australian art now, and this exhibition was instrumental to the transformation," Honorary Associate Professor at UNSW Art & Design Dr Catherine De Lorenzo says.

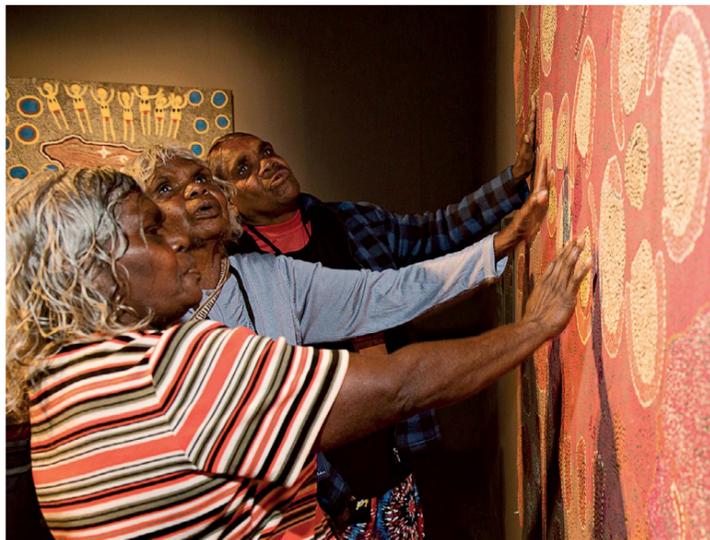
That Australia has learnt to accept Aboriginal art as being Australian and able to be shown in lots of different contexts is partly due to the skill of curators to alter perception.

The role of art exhibitions and curators in shaping Australian culture is the focus of a pioneering new book, *Australian Art Exhibitions: Opening Our Eyes*.

The book was written by four authors associated with four universities from three states, including two from UNSW – Honorary UNSW Associate Professors Joanna Mendelsohn and De Lorenzo, along with Associate Professor Alison Inglis of the University of Melbourne and Professor Catherine Speck from the University of Adelaide.

Largely funded by an Australian Research Council (ARC) Linkage Project in conjunction with five art museums, the book was six years in the making and was only made possible after a grant from the Gordon Darling Foundation.

The authors say the book differentiates itself from previous



Anawari Mitchell (front), Nora Nyutjanka Davidson (middle), Julie Porter (far) touching *Tjukurrpa Kungarranghalpa – Kulyuru and Kuru Ala, 1994* by Betty Laidlaw and Nyumitja Laidlaw, Warburton Arts Project, at the *Songlines: Tracking the Seven Sisters* exhibition at the National Museum of Australia, Canberra.

art history books by examining art exhibitions in publicly owned art museums and art galleries from 1960 to 2017.

"We thought that taking a history of art that looked at curated exhibitions would bring in some new perspectives, and I think that was a correct assumption," Dr De Lorenzo says.

"As a result, we have produced a history that weaves the changing understandings of Aboriginal art, the transformation of Australia away from a purely Anglophile perspective, reassessments of the position of women, the power of photography and the significance of centres outside the Sydney/Melbourne axis," she says.

The authors say exhibitions often start where written histories have stopped or explore the artists left out of earlier narratives; they can challenge what is shown in art museums; and they can extend our art history knowledge.

For example, the most important work in the Biennale of Sydney held in 1988 was the Aboriginal Memorial – 200 hollow log coffins from Central Arnhem – which

evident in *Absence of Evidence*, an exhibition on women and madness held at the Fremantle Arts Centre in 1994.

"It was about women driven mad and locked up in the building that is now the Fremantle Arts Centre, which was formerly seen as a lunatic asylum because they [the women] didn't want to fit domestic norms," Dr Mendelsohn says. "It's that constant challenging which results in interesting exhibitions."

One powerful influence on art exhibitions that the book discusses has been the effect of the dramatic injection of funding in the 1970s, or 'the lucky break', as Dr De Lorenzo describes it.

The funding boost coincided with the first exhibitions to feature women artists and with the start of the women's art movement.

Australian curatorship is continually changing, and now there is an increasing use of collaborative relationships for greater impact.

The authors point to *Songlines: Tracking the Seven Sisters*, which was held at the National Museum of Australia in 2017, as a key example of the effect of collaboration.

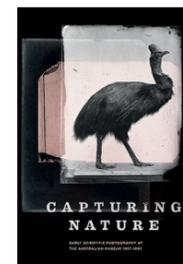
The *Songlines* exhibition was an initiative of the Anangu people who collaborated with people from the Martu, Pitjantjatjara Yankunytjatjara and Ngaanyatjarra lands to share one of the great songlines (or 'Dreamings').

The exhibition described the narrative of seven sisters who were pursued across the land and into the sky by a lascivious shape-shifting man. The story was told through art, film and installations.

"It wasn't a case of the institution imposing its curatorial model onto the artists," Dr Mendelsohn says.

"It was the artists and Elders working with the institution so that those stories would be preserved visually."

The authors say the *Songlines* exhibition "is a reminder of the importance of revisiting and rethinking ways of seeing art, history, geography and gender in an ever-changing world".



### Capturing Nature: Early Scientific Photography at the Australian Museum 1857-1893

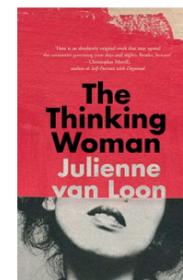
Vanessa Finney (NewSouth Books)

● In the mid-19th century, some of the earliest adopters of the revolutionary new art form of photography were scientists. Museums around the world were quick to see the huge potential for capturing fleeting moments of life, death and discovery. At the Australian Museum, curator Gerard Krefft and taxidermist Henry Barnes began to experiment with photography in the 1860s, preparing and staging their specimens – from whales and giant sunfish to lifelike lyrebird scenes and fossils – and capturing them in thousands of beautiful and arresting images. *Capturing Nature* reveals this fascinating visual archive for the first time.

### The Thinking Woman

Julienne van Loon (NewSouth Books)

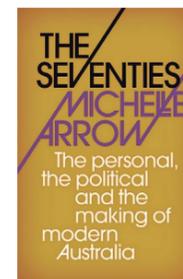
● Can our capacity for wonder change who we are? How important is good friendship? Is fear inevitable? Award-winning author Julienne van Loon turns her attention to the work of six contemporary female thinkers including key international philosophers and writers. In six long-form essays, Van Loon discusses topics relevant to everyday life, from love and friendship, to work, play, fear and wonder. Travel with her across the globe to meet each of her subjects as they discuss philosophy and ask the big questions, constantly linking the personal and the political, and engaging in a warm and lively exchange of ideas.



### The Seventies: The Personal, The Political and the Making of Modern Australia

Michelle Arrow (NewSouth Books)

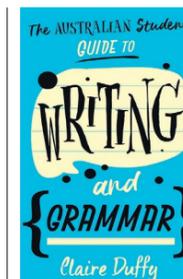
● Women's liberation, gay liberation, the sexual revolution: these movements created seismic change in public and private life. Together with the advent of multiculturalism, and a new urgency in campaigns for Indigenous rights, the 1970s was the decade that created contemporary Australia. The decade is often framed as one of missed opportunities for economic reform. But award-winning historian Michelle Arrow argues that if we reframe the '70s as the story of the personal becoming political – and as the birth period of the feminist and sexual revolutions and of multiculturalism – it becomes instead a story of hope and change.



### Stop Being Reasonable

Eleanor Gordon-Smith (NewSouth Books)

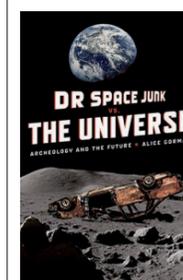
● What does it take to change our mind? Why do we ignore compelling evidence? And does it always matter? When Eleanor Gordon-Smith hits the back streets of Sydney's red-light district to interview catcallers for radio program *This American Life*, she thinks persuading them to change their mind won't be too hard. In *Stop Being Reasonable*, she explores the complexity, stakes and emotion involved in changing our mind, from rusted-on hecklers to people whose partners have committed gruesome crimes. Weaving contemporary philosophy with illuminating real-world stories, Gordon-Smith grapples with how we change our mind about who we really are – or don't.



### The Australian Students' Guide to Writing and Grammar

Claire Duffy (NewSouth Books)

● Do you ever think about the structure and arrangement of what you say and write? And why it's said and written like that and not some other way? Has anyone ever asked you to catch a red big ball? No. Because in English we would say "big red ball". Why is that? Best-selling author of *The Australian Schoolkids' Guide to Debating and Public Speaking*, Claire Duffy, turns her hand to helping students write well. With practical tips and helpful examples, in an easy-to-use and fun guide, students (aged 12+), their parents and teachers can master everything from apostrophes to essay writing.



### Dr Space Junk vs The Universe

Alice Gorman (NewSouth Books)

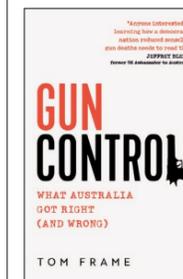
● From humble beginnings viewing flakes of glass under a microscope, intrepid cocktail-loving archaeology maven Dr Space Junk found her true calling exploring the traces of humankind into the far reaches of the solar system, thanks to an evening epiphany over a beer on a verandah in outback Queensland. Dr Alice Gorman takes readers on a journey which captures the relics of space forays from Sputnik to Skylab, Mir to Mars Pathfinder, and uncovers the cultural value of detritus all too readily dismissed as junk. This entertaining collection of essays is a must read for anyone interested in our place in the universe.



### Paper Emperors – The Rise of Australia's Newspaper Empires

Sally Young (NewSouth Books)

● Before newspapers were ravaged by the digital age, they were a powerful force, especially in Australia – a country of newspaper giants and kingmakers. A corporate and political history of Australian newspapers spanning 140 years, *Paper Emperors* explains how Australia's media system came to be dominated by a handful of empires and powerful family dynasties. Writing with verve and insight, Sally Young, Professor of Political Science at the University of Melbourne, shows how newspaper owners influenced policy-making, lobbied and bullied politicians, and shaped internal party politics.



### Gun Control: What Australia got right (and wrong)

Tom Frame (NewSouth Books)

● In the aftermath of the Port Arthur Massacre, John Howard, then just six weeks in office, moved swiftly to revolutionise Australia's gun control laws. The National Firearms Agreement – produced 12 days after the massacre, with support across politics – is held up around the world as a model for gun control. In this book, Tom Frame explores gun ownership in Australia, the political aftermath of Port Arthur, the public response to the gun restrictions, and the repercussions two decades on. He examines whether the government achieved its intention, and what it might have done in response to the massacre but didn't.



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