SYDNEY ALUMNI MAGAZINE

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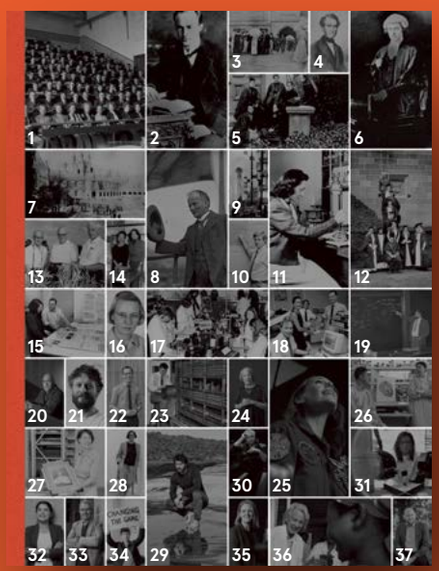
SAM

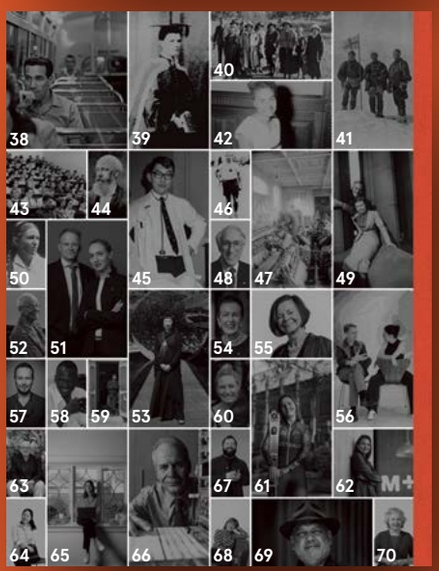
THE UNIVERSITY OF SYDNEY

Celebrating

175 years

Leadership for good since 1850





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Photograpy courtesy of the University of Sydney Archives, staff photographers, State libraries, SMH and Newspix.
Aboriginal and Torres Strait Islander readers are advised that this issue contains images and references to deceased people.

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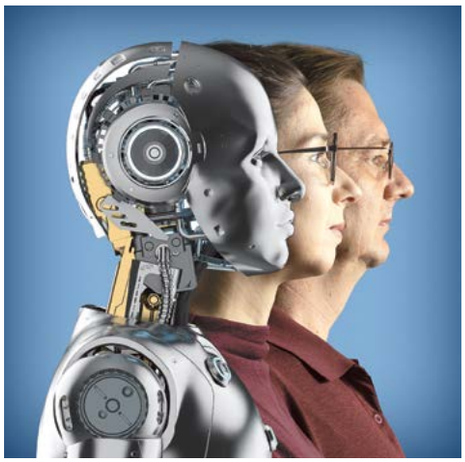

We recognise and pay respect to the Elders and communities - past, present and emerging - of the lands that the University of Sydney's campuses stand on.

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THE UNIVERSITY OF SYDNEY | *Sydney* Alumni Community

CELEBRATING 175 YEARS OF INNOVATION AND IMPACT

With the 2025 academic year well underway, it's been a pleasure to welcome our newest cohort from Australia and abroad to campus. Whether it's their first time setting foot in a lecture theatre or their hundredth, we will always welcome students – our future alumni – from near and far to join our thriving, inclusive community.

This year marks 175 years since the founding of the University of Sydney. As we celebrate this milestone and reflect on our history, we honour the strength, achievements and enduring culture of Aboriginal and Torres Strait Islander communities, which have been sharing knowledge on the lands on which our campuses sit for more than 60,000 years.

As Australia's first university, we were founded on principles of merit and equity. For 175 years we have endeavoured to hold true to these principles through our commitment to leadership for good. The University has grown and evolved, proudly empowering increasingly diverse generations of graduates to tackle some of the world's most complex challenges. They have made enormous contributions to their fields – from medicine to technology, triumphs in sport and distinguished achievements in the Arts; and through their leadership within government, business and industry.

In 2025, we have expanded our philanthropic and community engagement, with the launch of an ambitious 20-year partnership with the Khuda Family Foundation to address gender equity in STEM (Science, Technology, Engineering and Mathematics); and partnering with the Snow Medical Research Foundation, whose innovative and life-changing investment has enabled the establishment of the Snow Vision Accelerator, which is set to revolutionise glaucoma research in Australia. We're proud to be a place where ambitious ideas like these can come to life and transform the future through education and research.

In this issue of *SAM*, you can read about impactful work underway right now that builds on our legacy of visionary thinking. Dr Nick Hunt (BSc (Hons) '13, PhD '17) and Professor Victoria Cogger (BSc (Hons) '00, PhD '03) are developing oral insulin which has the potential to reshape the future of diabetes management (page 16). Our Sydney Business School experts, meanwhile, share their insights on artificial intelligence in the workplace (page 8), while our Faculty of Medicine and Health researchers bust some common health myths (page 20).

At the time of writing, the federal election has just been called. Whatever the outcome, it is clear from our alumni and students' incredible global impact over the past 175 years that universities will always have a vital role to play in Australia's future.

And as we look forward to the next 175 years, we do so with a commitment to truth-telling, respect and a future led by emerging leaders.

Mark Scott AO (BA '84, DipEd '84, MA '93, HonDLitt '15), Vice-Chancellor and President

David Thodey AO, FTSE, Chancellor

Photography by Fiona Wolf

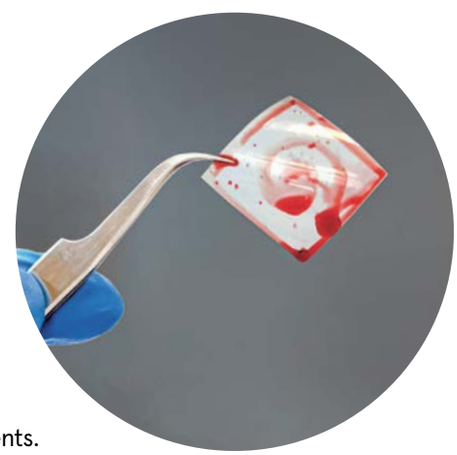
ENGINEERING

Driving safety

Self-driving robotic vehicles are testing communication with traffic lights as part of an intelligent transport trial by the University of Sydney and Transport for NSW. This technology aims to enhance safety by sharing data on pedestrians, cyclists and traffic signals with both driverless and manually operated vehicles. During the pilot in the streets of Chippendale, two self-driving vehicles used wireless connectivity with the Sydney Coordinated Adaptive Traffic System (SCATS) to relay intersection details and warn of hazards, helping vehicles to avoid endangering other road users. Dr Stewart Worrall (BE ’04, BSc ’04, PhD ’09) at the University’s Australian Centre for Robotics says the Cit-e software involved in the pilot may be commercially launched as early as this year and can be retrofitted to existing vehicles.

BIOMEDICAL

Polymer to prevent blood clots



A spiral painted in a zwitterionic coating is revealed after it is dipped in water containing food dye.

Zwitterions may sound like a cousin of Twitter (X), but they’re common macromolecules in human cells. Researchers at the University of Sydney are using zwitterions to create a surface coating that could prevent blood clots from forming on medical devices like catheters and stents. Proteins can accumulate on implants, leading to clots that mean the medical devices often need to be surgically removed. Zwitterions are unique because they possess both positive and negative charges, making them neutral. This hybrid nature helps them to bond with water, forming a protective layer that promotes smooth blood flow. Dr Sina Naficy’s team at the School of Chemical and Biomedical Engineering aims to decrease the risk of clots and increase the lifespan of heart valves and implants by using zwitterion coatings.

Want more news? Make sure you’re receiving *SAM Extra*, our monthly e-newsletter

NATALIE BELL

(BSc (Agriculture) (Hons) ’18)

Founder, Hylo Ag

What led you to start your own business?

I founded Hylo Ag in 2023 to reduce plastic waste on farms by recycling cattle and sheep ear tags. Each year, over 200 tonnes of ear tags go to landfill – but we want to change this! We’re trialling our collection model while designing the recycling solution, which involves repurposing them into new plastic products. This currently doesn’t exist in Australia for our type of plastic, so it’s tricky to solve – but we’re determined to make a positive impact on our industry’s sustainability.

How did you discover your interest in agriculture?

I grew up in Sydney without much experience of agriculture, until I started showing cattle with my school team. I loved it so much I decided to enrol in an Agricultural Science degree, with a major in Livestock Production. Field trips to Dubbo and Narrabri stand out as highlights. They led to new friendships, many I still cherish today, and ignited my passion for working in the meat industry.

What motivates you?

We have amazing innovators in rural Australia, and I want to be a voice in this crowd that amplifies our impact and spotlights our ability to develop solutions founded in our small communities with huge global relevance. My advice is, it can be so easy to focus on all the reasons why something might not work out – but think about what might be possible if you give it a go.

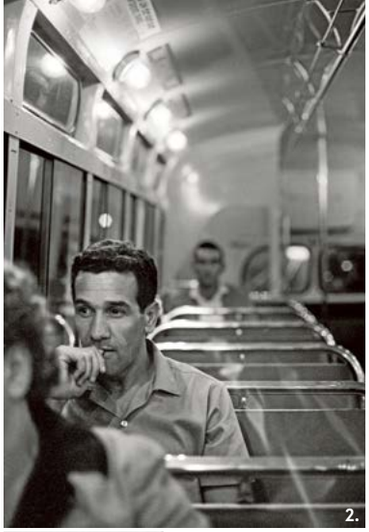
How our alumni and researchers have shaped the past and inspired the future

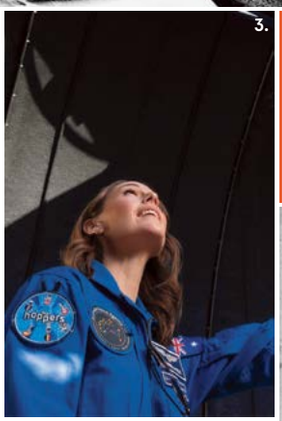
175 years *of innovation and impact*

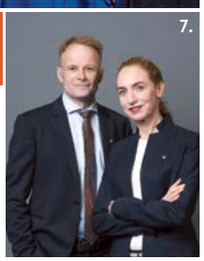
Written by Cassandra Hill

From groundbreaking discoveries in medicine and technology to Olympic victories, artistic triumphs, and leadership in government and industry, generations of our alumni and researchers have had an enduring impact on the world. And whether through high-profile accomplishments or quiet contributions to their communities, they're shaping a future as exciting as the past 175 years.

Aboriginal and Torres Strait Islander readers are advised that this article contains images of and references to deceased people.







1. Dr Eleanor Gyarfas, the first woman to obtain a PhD at the University, in 1951. Photo: University of Sydney Archives REF-00048480.
2. Dr Charles Perkins AO, the first known Aboriginal man to graduate from the University, in 1966. Photo: Robert McFarlane/ Josef Lebovic Gallery.
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A UNIVERSITY OF FIRSTS IN EDUCATION

Founded on the land of the Gadigal people in 1850, today the University of Sydney's campuses and facilities extend across the ancestral lands of many of Australia's First Peoples. The first students started in 1852. Australia's first university, its establishment marked an educational and cultural milestone for the country. Benefactors began to offer their support believing that education could help to improve socioeconomic outcomes. Among the first donations was Thomas Barker's endowed gift of £1000 which generated enough interest to fund a scholarship in 1852.

By 1856 the University had awarded its first degrees, and in 1885 Isola Florence Thompson (BA 1885) and Mary Elizabeth Brown (BA 1885) became the first women to graduate. The first PhDs were conferred in 1951, including to Eleanor Gyarfas, a gradute of Budapest University, the first chemist to investigate the complex compounds of osmium.

In 1965, Felcia Corowa became the first female student to identify as Aboriginal when she enrolled in an Arts degree. Meanwhile, renowned Aboriginal activist Dr Charles Perkins AO (BA '66) became the first known Aboriginal man to graduate from an Australian university, in 1966.

EXPLORATION AND INVENTION

As the world of knowledge expanded, so did the spirit of exploration. In 1908, Antarctic explorer and geology professor TW Edgeworth David (who had earlier discovered coal in the Hunter Valley) joined his former PhD student Douglas Mawson (BE 1902) on Sir Ernest Shackleton's 1908-09 Antarctic expedition. Meanwhile, inventor and physiology professor Frank Cotton (BSc 1912) created the world's first flying suit in 1940, preventing pilots from blacking out under g-force. It not only saved countless Allied lives during World War II but also paved the way for modern NASA spacesuits.

Today, the first person to train as an astronaut under the Australian flag, Katherine Bennell-Pegg (BE (Aerospace) (Hons) '08, BSc (Adv) '08), is exploring new frontiers in space, paving the way for others. "I want to use this experience to open doors for Australian scientists and engineers to utilise space for their discoveries, to inspire the pursuit of STEM careers," Katherine says.

ADVANCES IN MEDICINE AND SCIENCE

From the groundbreaking melanoma research of 2024 Australians of the Year, Professor Georgina Long AO (BSc '93, PhD '96) and Professor Richard Scolyer AO (MD '06), to legendary heart surgeon the late Dr Victor Chang AC (BSc (Medical)(Hons) '61, MBBS '63), who revolutionised heart transplant surgery, our researchers tackle the complex medical challenges of our times.


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And the legacy of our alumni continues to make a profound impact around the world. Professor Graeme Clark AC's (MBBS '57) invention of the multiple-channel cochlear implant has restored hearing for more than one million people globally, while the work of the late Catherine Hamlin (MBBS '46) lives on in Ethiopia, where in 1974 she founded a hospital for the treatment of preventable childbirth injury obstetric fistula, saving thousands of lives.

More recently, researchers including Professor Eddie Holmes have been instrumental in fighting the spread of COVID-19. Eddie's work as the first person to publicly share the SARS-CoV-2 genome kickstarted the development of tests and vaccines worldwide.

In 2025, the Snow Medical Research Foundation has committed $50 million to establish the Snow Vision Accelerator, a groundbreaking initiative for glaucoma research to fast-track treatment options. Meanwhile the Sydney Biomedical Accelerator, a partnership between the University of Sydney, Sydney Local Health District and the NSW Government set to open in 2028 thanks to the generosity of the Susan and Isaac Wakil Foundation, will accelerate scientific discoveries in areas including cancer and neurogenerative diseases.

POLITICIANS, PROGRESS AND PIONEERS

No fewer than eight Australian prime ministers have graduated from the University. Our alumni have also worked on some of the world's most iconic landmarks. Sir John Bradfield (BE 1889, ME 1896, DScEng 1924) oversaw the design and construction of the Sydney Harbour Bridge, while John Andrews (BArch '56), Australia's first internationally recognised architect, designed the CN Tower in Toronto, Canada.

In agriculture, our researchers have been tackling the deadly threat of wheat rust for over a century, protecting Australia's wheat industry – not to mention your daily Vegemite toast. Led in 2025 by Professor Robert Park, the Judith and David Coffey Chair in Sustainable Agriculture, the Cereal Rust Research program is partnering with farmers, supported by a $4 million philanthropic gift. "Our scientists have played a central role in successfully breeding hundreds of rust-resistant wheat varieties that help feed the world," Robert says.

FIRSTS IN TECHNOLOGY

Our researchers have been pioneers in computing, including building the SILLIAC machine in 1956, one of the world's most powerful computers at the time. It took up an entire room at the University and ran Australia's first computerised payroll system for the Postmaster-General's Department, also supporting Woolworths and the Snowy Mountains Hydro-Electric Scheme.

Ruby Payne-Scott (BSc '33, MSc '36, DipEd '38) began her studies at the University when she was just 16 years old, going on to become a trailblazer in physics and radio astronomy during World War II. More recently, John O'Sullivan (BSc '67, BEng '69, PhD '74) and David Skellern AO (BSc '72, BE(Hons) '74, PhD '85) and their team invented Wi-Fi, while today, experts including Professor Kai Riemer and Associate Professor Sandra Peter are exploring artificial intelligence in the workplace (see page 8).

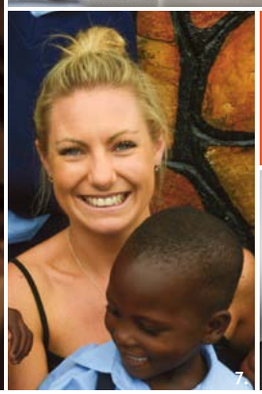
OUR ATHLETES AND ARTISTS

Beyond the lecture theatre, we've helped to inspire more than 150 Olympians and Paralympians. Fourteen alumni proudly represented Australia at the Paris 2024 Olympic Games, bringing home one gold and three silver medals.

Our alumni and researchers have also had a significant cultural impact. From theatre innovator Kip Williams (BA '09) and Sydney Opera House CEO Louise Herron AM (LLB '82, BA '86) to artist Lindy Lee AO (BVA '83, DipVisArts '85) and Pulitzer Prize-winning author Geraldine Brooks AO (BA '79), they inspire creativity globally.

Renowned soprano Professor Deborah Cheetham Fraillon AO (BMusEd '86) is

Jacqueline, Graham and Jessica Madsen outside the Madsen Building, which was named after Sir John Madsen, on the University of Sydney's Camperdown Campus. Sir John Madsen, Professor of Electrical Engineering, 1946. Photo: University of Sydney Archives REF-00052565.



1. Peter Aplin works on the SILLIAC computer, 1950s University of Sydney Archives REF-00087968
2. Ruby Payne-Scott as a student in the 1930s, University of Sydney Archives REF-00087959.
3. Artist, Lindy Lee AO. Photo: SMH.
4. Heart surgeon, the late Dr Victor Chang AC. Photo: Chang family.
5. Singer, composer and educator, Deborah Cheetham Fraillon AO, in 2024. Photo: Stefanie Zingsheim.
6. Deanna d'Alessandro, Director, Net Zero Institute. Photo: Stefanie Zingsheim.
7. Annabelle Chauncy who established a school in Uganda. Photo supplied.
8. Dr Graeme Clark, inventor of the multiple-channel cochlear implant, in 2004. University of Sydney Archives REF-00094373.

also bringing First Nations stories to life and nurturing talent at Short Black Opera and at the Sydney Conservatorium of Music, supported by a bequest from the late Elizabeth Todd OAM (Dip Music '42).

And as Australia's population ages, a groundbreaking donor-funded partnership between the University of Sydney's Brain and Mind Centre and the Sydney Conservatorium of Music is looking to the future. Led by Professor Sharon Naismith, the team is exploring whether musical interventions could play a role in helping those at risk of cognitive decline.

GIVING BACK

The spirit of philanthropy and humanity leads our alumni to work for organisations such as the World Health Organisation (WHO), like Dr. Richard Brennan AO (MBBS '84). It leads others to lobby for change, like Jack Manning Bancroft (BA '07) – whose Australian Indigenous Mentoring Experience (AIME) program has empowered over 25,000 First Nations students to go to university, and Annabelle Chauncy OAM (BA '07, LLB '10), who in 2011 established a school in Uganda, transforming the lives of thousands.

And in 2025, a generous donation of $100 million by Robin Khuda, founder and CEO of AirTrunk, is set to fund an ambitious 20-year program to create a pathway for young women from Western Sydney to pursue study and careers in science, technology, engineering and mathematics (STEM).

AN INNOVATIVE, SUSTAINABLE FUTURE

As we look to the next 175 years, we're focused on transforming innovative ideas into real-world solutions. Research commercialisation plays a vital role in this, through greater collaboration with industry and government.

At the Net Zero Institute, Professor Deanna D'Alessandro is developing solutions such as 'green steel', made with renewables, and direct carbon capture – a cutting-edge technology that removes historic carbon emissions from the atmosphere. In nanotechnology, Dr Nicholas Hunt (BSc (Hons) '13, PhD '17) and Professor Victoria Cogger (BSc (Hons) '00, PhD '03) are developing oral insulin for a needle-free future (see page 16). And the Matilda Centre's 'OurFutures' program is developing the first online vaping prevention program of its kind, as it helps to shape a healthier future.

Learn more about philanthropy at the University

A FAMILY TALE

Four generations of the Madsen family have graduated from the University of Sydney. The family's history has been intertwined with the University's for more than 125 years. The most recent Madsen graduates, Jacqueline Madsen (BEng '17) and Jessica Madsen (BSc '14), are continuing a rich legacy that began with their great-grandfather, Sir John Percival Vissing Madsen (BSc 1900, BEng 1901).

A groundbreaking physicist and engineer after whom the University's Madsen Building was named, Sir John is perhaps best known for his pioneering work in radio and radar technology, and for introducing Australia's first digital computer, CSIRAC.

Jacqueline is currently embarking on an adventure to Antarctica as the Engineering Services Supervisor at Mawson Research Station for the 2025 winter. "Fun fact: it actually takes longer to return from Mawson than from the International Space Station!" she says. "Electrical engineering opens so many doors. I'm thankful that I persisted to start my career on such a solid footing. It enabled me to pursue whatever I set my mind to."

Meanwhile, Jessica has carved a path as a high school science and agriculture teacher, previously having founded online networking and educational resource, Seeds of Sustainability, which took her as far as the United Nations in New York. "I've always been passionate about finding sustainable ways to feed a growing population," she explains. "Now, I love inspiring my students to explore their own passions."

Their father, Graham Madsen (MEng '90), also contributes to this legacy as a casual lecturer in the School of Chemical Engineering. "Growing up in Wagga Wagga, my grandfather and uncle inspired me to study here," he says. "I enjoy putting something back into future generations, helping students be the next leaders in industry."

Both sisters recall how they were often asked about their connection to the Madsen Building. "It was great to have Sir John so well recognised on campus," Jacqueline says. "It was also nice to be so free to be my own person in such a special place of learning and development."

How to prepare for the decade-defining technology set to transform productivity

AI and you: Building the workplace of the future

Written by Alana Wulff
Photography by Fiona Wolf

As our relationship with artificial intelligence (AI) continues to evolve as quickly as the technology itself, employees, managers and leaders alike are having to come to grips with a rapidly changing workplace environment. With a 'decade of disorientation' looming on the horizon, two University of Sydney experts believe there's one element that can help us to thrive – AI fluency.

A WHOLE NEW WORLD

"If you look at today's headlines, your social media feeds or the conversations happening in your group chats, you'll probably notice that we live and work in a restless time," Associate Professor Sandra Peter observes.

As she and her colleague Professor Kai Riemer like to put it, "We're entering a decade of disorientation."

The two co-directors of Sydney Executive Plus, a University of Sydney Business School initiative that focuses on upskilling leaders, are also the co-authors of The 2025 Skills Horizon, a report in which they explore the decade ahead. As part of their research, they spoke with 78 leaders from diverse sectors around the globe, including the CEO of the world's largest media corporation, two prominent hatted chefs, theatre directors and top figures within academia, business and finance. It was important to them to gather a range of perspectives on what is a whole new way of doing business.

"We're used to thinking of the world in terms of clear trends or megatrends, and increasingly we're seeing the very complex ways in which the world is shifting," Sandra explains.

> "We're used to thinking of the world in terms of clear trends or megatrends, and increasingly we're seeing the very complex ways in which the world is shifting."
>
> — Associate Professor Sandra Peter

AI VS GENERATIVE AI: WHAT'S THE DIFFERENCE?

AI in general is built by encoding patterns from large amounts of data, such as images, videos or text. These systems are used to recognise patterns in new data, and to make predictions. For example, they might recognise your face when you open your phone, help Siri or Alexa to respond to your voice, let your streaming service predict what you'll want to watch next, or help your bank keep your account safe by detecting fraudulent transactions.

Generative AI (gen AI) is a form of AI that can generate new content from the patterns it has encoded, in response to information prompts that you give it. This can include text, images, videos, music and/or computer code. Its most popular version comes in the form of chatbots, like ChatGPT – gen AI tools that have been trained to respond in human-like conversation and be helpful in assisting with all kinds of language-related tasks, such as writing, editing and even creative brainstorming.

> “You can’t fake AI fluency any more. You have to start using it and actually know something about it.”
>
> — Professor Kai Riemer

Kai adds: “Established ways of thinking and doing are changing or becoming less reliable, and the world is becoming more fractured, uncertain and complex, which has been driven by five shifts: in values, technology, accountability, trust, and energy.”

SPEAKING THE LANGUAGE OF TECH

One of the most critical and complex areas that leaders will need to navigate is artificial intelligence (AI) – and workplaces urgently need to embrace a shared understanding of and collective approach to the way employees use, build and govern AI.

“A lot of our work around emerging technologies is about making sense of how the world is changing,” explains Sandra, “and exploring that foresight around the future of work, and preparation – how do you prepare for any of this?”

While many people have yet to fully embrace AI at work, Sandra believes we will all have an ongoing connection to AI in the end, whether we’re working directly with or alongside it, governing it, building it or even befriending it. “AI now touches everything – from the frontline to the boardroom. You can’t escape it,” she says. “But unless you truly understand how it’s different, you won’t reap the proper rewards.”

“You can’t fake AI fluency any more.” Kai adds. “You have to start using it and actually know something about it. You don’t need to be able to code or build AI, but you do need to know the technology deeply enough to make effective decisions.”

FOREWARNED IS FOREARMED

Although both Sandra and Kai believe the coming decade will provide a number of complex challenges, they are confident that these can be managed with foresight and education.

“Yes, we should be worried, because there are questions about whose problem the bigger picture is around the use of generative AI, and regardless of who is in charge of this, any leader in an organisation will have to grapple with this,” Kai says. “For example, if everyone uses AI differently and they don’t understand it in the same way, how are you ever going to figure out how to best use it in your organisation? Leaders need

GREAT MINDS: HUMANITIES THINKING WILL ALWAYS BE NEEDED

While we live in an advanced technological age, with more data than ever and AI to help us make decisions, Sandra and Kai say they hear from leaders about the importance of continuing to embrace humanities-style thinking.

The coming ‘decade of disorientation’ brings with it many uncertainties, they say, and in the absence of clear information, reflective thinking is needed, along with the ability to ask the right questions.

to think about how it actually connects to how the organisation creates value, because that's so important for better productivity and outcomes."

And while neither Sandra nor Kai believes that AI is coming for our jobs, they both believe it's coming for our job descriptions. "The types of things you do and how you will do them with assistive technologies will be different," Kai predicts. "It's really all about how AI can extend our skillset rather than replace our skillset."

"AI preparedness fosters productivity," Sandra adds. "For all the risks and challenges that AI raises for us, there are tremendous opportunities for those who understand it and can help craft a future out of it."

And so, as we face a decade of disorientation, it turns out that the way forward is actually quite clear: learning to live with it is the great unlock.

"Be curious and learn," Kai says. "Learn to speak the language of tech, upskill yourself and embrace this idea of lifelong learning. There's never been a more important time to do this than right now." ●

Learn more about upskilling in AI

HOW TO GET GEN AI TO BOOST YOUR PRODUCTIVITY

Define your needs
Do you need AI for automating repetitive tasks, creating workflows, or handling routine communications?

Assess your data
Is your data organised, accessible, and sufficient for AI tools to analyse?

Choose the right tools
Do you require specialised AI solutions for content creation, customer service, data analysis, or project management?

Train your team
Have you provided training so employees can effectively use and benefit from AI?

Measure impact
Are you tracking productivity metrics to evaluate how AI affects efficiency and quality?

HUMBLE LEADERSHIP AND TEAM CULTURE: THE SECRETS TO IMPROVED PERFORMANCE

Leadership skills are more important than ever in this technological age – and a study by the University of Sydney Business School has found that 'humble leadership' and committed workers are the keys to improving team performance.

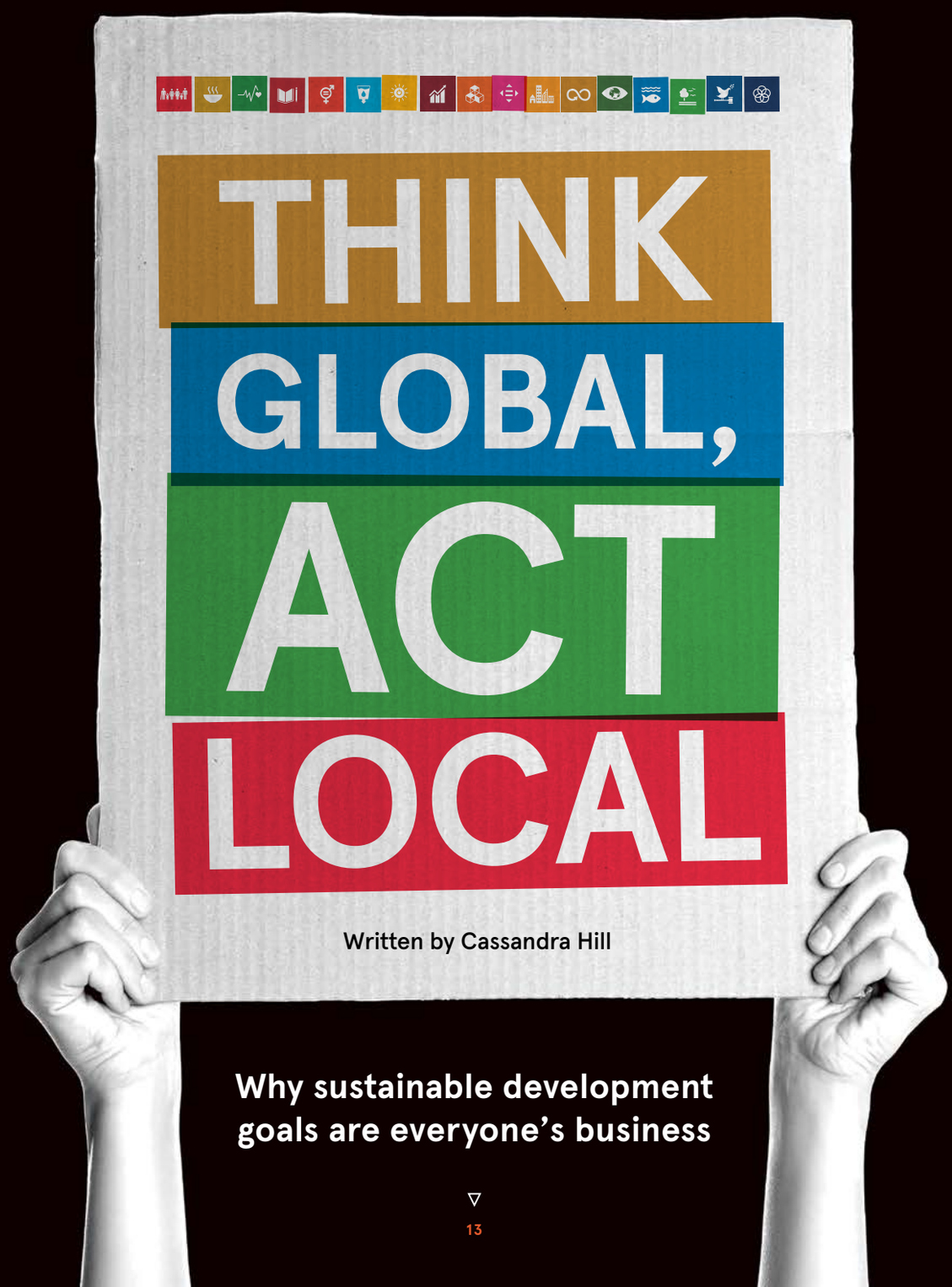
Lead investigator Dr Nate Zettna (BA (Hons) '07, PhD '21) explains that humble leadership is a style that favours two-way communication and is marked by a leader's ability to accurately assess themselves and recognise their limitations, value others' contributions, and welcome to new ideas and feedback.

The benefits of humble leadership are amplified in teams where workers are highly committed to the organisation, he says. "In teams with lower commitment, leader humility alone does not significantly impact silence or performance."

The study also explored the effects of 'team silence' – when members of a team withhold important information, suggestions or concerns – on performance. "Team silence is a pervasive issue across various organisational levels and sectors," Nate explains. "Organisations should recognise it not just as an individual issue but as a collective one."

Nate advises organisations to complement their existing leadership training with initiatives that foster team commitment and address collective attitudes. "Effective interventions should target both leaders and team members to create a more open and collaborative work environment."

With only 17 percent of the United Nations' targets for its Sustainable Development Goals on track for their 2030 deadline, the UN is urging businesses to act now. Achieving these goals – an ambitious plan for a more resilient, prosperous world – won't happen without major investment and innovation from the private sector, says UN Secretary-General António Guterres. At the University of Sydney's Business School, around 30 researchers are exploring unique solutions to issues including hunger, inequality and building more inclusive institutions. Here, three share their insights.



Written by Cassandra Hill

Why sustainable development goals are everyone's business

BUSINESS NEEDS TO REFRAME A SOCIETAL PROBLEM – SUCH AS ENDING HUNGER – AS AN OPPORTUNITY."

Ranjit Voola (GradCert Higher Ed '08), Associate Professor of Marketing, focuses on how business strategies can alleviate hunger, poverty and global wealth inequality

GOAL 2

Zero hunger

"Making profits and doing good can be mutually reinforcing goals. Ending hunger requires approximately A$40 billion every year until 2030.* Historically, countering hunger has been the concern of governments and charities – and progress has been slow. Business is the only part of society focused on profit and developing innovative solutions. So unless this sector is engaged, particularly the food and agricultural industries, this goal won't be achieved. Business needs to have the ability to reframe a societal problem or challenge – such as zero hunger or eliminating poverty – as an opportunity."

*Source – UN World Food Programme 2021

HOW CAN YOU PROFIT ETHICALLY FROM HUNGER?

"Instead of operating solely for profit, big businesses could engage with the poor, not through donations but by collaborating as partners – for example, by selling better-quality seeds and improved machinery to small-scale farmers in low-income countries to help them to address low productivity and access competitive markets while boosting food security. If the product has value, farmers or potentially governments will pay them for it. Another example is Mastercard, which launched the 2KUZE digital platform in 2015 with a focus on financial inclusion. It enables farmers in Kenya to buy, sell and receive payments for agricultural goods via their mobile phones. They can connect directly with buyers and agents to secure the best price and receive payments securely, without having to walk for hours to markets. So it could be consumers, other businesses or governments paying for these initiatives. At the end of the day, societal challenges are what big governments do, and they can't do it themselves. So this kind of thinking is what is required of business.

Businesses need to ask themselves, 'Where does my passion meet the world's greatest need, at a profit?' Then they'll be able to combine profit with purpose – a characteristic that will define the leaders of the future. The traditional assumption of the purpose of business is to make money and do nothing unethical – but here we're saying we need not just to do no harm, but to do good as well."

NEXT-GENERATION BUSINESS LEADERS

"Consumers also expect businesses to proactively do good for society. I see a clear desire in students to learn how they can change the world for the better through business. When looking for employment, they're also seeking companies that are making a difference.

Universities also have a critical role in rethinking the role of businesses and shifting their mindset towards sustainability by developing students as responsible future business leaders and senior executives."

Leanne Cutcher (PhD '04), Professor of Management and Organisation Studies, has a particular interest in alternative businesses and organisations in First Nations communities

PROFIT ALONE IS NOT THE ONLY MEASURE OF SUCCESS FOR FIRST NATIONS BUSINESS VENTURES"

GOAL 10

Reduce inequality

"For many successful First Nations businesses, the bottom line is not about profit alone – developing skills and delivering services in local languages are also important measures of performance. We need to firstly recognise that Aboriginal and Torres Strait Islander people know what their communities need and can deliver those services. These organisations generate more than $16 million annually to the economy and employ more than 116,000 people – so we need to ensure that they are offered more support."

WAYS OF DOING BUSINESS

"I'm currently partnering with Aboriginal community-controlled organisations, exploring how they combine cultural practices and kinship systems with mainstream service delivery in a viable and culturally appropriate way. For example, Bara Barang on the NSW Central Coast trains and mentors Aboriginal apprentices in manufacturing. It also runs cultural awareness programs for employers, fostering supportive environments for First Nations employees.

Cooperative business models are also delivering services in First Nations communities, such as banking, childcare, suicide prevention and housing. The Traditional Credit Union (TCU), for

BUSINESS IS GLOBAL AND SO ARE HUMAN RIGHTS"

Chris F Wright (BA (Hons) '05), Professor of Work and Labour Market Policy, is investigating barriers to fair working conditions in global supply chains

GOAL 16

Peace, justice and strong institutions

"Advanced technology and reduced transport costs have made it easier for global fashion brands to send their operations offshore to countries with lower labour costs and weaker worker protections. But tragic events like the 2013 Rana Plaza disaster in Bangladesh highlight the dire consequences when global firms exploit these gaps in governance. More than 1000 workers and their children in an onsite nursery were killed when the building, which housed garment factories, collapsed. Consumers who shopped at retailers like Zara, Benetton and Walmart were forced to recognise the conditions that enabled low-cost clothing."

ADDRESSING THE GAPS

"My focus is on how to build effective institutions to address the 'governance gaps' that present barriers to decent work. Following Rana Plaza, international regulations were introduced requiring global companies in Bangladesh and Pakistan to meet basic health and safety standards. These reforms, coupled with strengthened labour laws in Australia and the EU, demonstrate how transnational collaboration can work.

Similarly, in farming, migrant workers may be exploited due to pressures from grocery retailers and supermarkets. I have advised on a project with industry associations and growers which led to improved measures, such as higher wages, to prevent companies from engaging in a 'race to the bottom' on labour costs. Systemic change really has to happen at the company and production systems' level. I'm involved in informing government policy, international organisations and peak bodies as an effective way to drive change. However, individuals also need to be aware of their role as consumers by buying sustainably produced goods."

example, operates 14 branches in the Northern Territory, employing local Aboriginal and Torres Strait Islander staff. As a cooperative it does not have to deliver shareholder dividends – surplus funds can be reinvested in the business, which can develop other culturally informed services. TCU's initiatives include becoming a registered training organisation to equip community members with job-ready skills."

SUPPORTING FIRST NATIONS BUSINESSES

"My call-to-action around this Sustainable Development Goal is to ask ourselves, how can we become effective allies in assisting First Nations business ventures to succeed? People can help to shape their organisations' reconciliation action plans to bring about change in concrete ways. They can consider how they might procure a certain percentage of their services from Aboriginal and Torres Strait Islander organisations and support those businesses by investing in training opportunities.

Aboriginal entrepreneurs are innovating in so many ways. Smart businesses should be looking to partner with them.

There are many ways that this burgeoning sector can grow, which will have flow on impacts on intergenerational wealth, health and wellbeing of communities."

Learn more about our work towards Sustainable Development Goals

ALUMNI EXPERT VIEW

Leela Shanker (BCom '00, LLB '02), Sustainability Director, Design Lab, WAP Sustainability, New York

GOALS 11 & 12

Sustainable cities and communities & Responsible consumption and production

"I began exploring sustainable lighting as a designer at WeWork, before founding an international incubator with the GreenLight Alliance to analyse the environmental impacts of typical lighting designs. The goal was to help designers and manufacturers to make better-informed decisions about their designs. As lead of WAP Sustainability's Design Lab, I help firms – from those involved in the built environment to finance – to navigate decarbonisation goals and complex data insights. I hope the industry can grow to recognise the business value of sustainability, and as an opportunity to redefine how we experience urban environments."

A new method of nanotech-based insulin delivery with the potential for it to be taken as a tablet is providing hope that people with diabetes might soon be closer to a needle-free alternative. Its development is helmed by a team of University of Sydney researchers, the work at times deeply personal for those involved.

Needle-free *nanotechnology*

Written by Ivy Shih
Photography by Fiona Wolf and Stefanie Zingsheim

Dr Nick Hunt and his team hope that oral insulin might provide an alternative to needles for people with diabetes

A PASSION FOR DISCOVERY

Dr Nicholas (Nick) Hunt (BSc (Hons) ’13, PhD ’17) has always been drawn to discovery. During his undergraduate studies he developed a love of research and thrived on the investigative process – uncovering gaps in the existing research in his field and learning from them.

“In third year of Science we had to write a literature review,” he recalls, “and I remember it well because, one, I worked with a lecturer with the same name as me and, [two], more importantly, because I absolutely loved it. It really showed me this was where my natural passion and drive lay.”

That passion shaped his path, leading him to earn first a Bachelor of Science with Honours and then a PhD in neuroscience at the University of Sydney. His career in biotechnology gained momentum when he joined Professor Victoria Cogger’s (BSc (Hons) ’00, PhD ’03) laboratory, investigating how nanotechnology could be used to deliver medications.

Nick is now one of the driving forces behind the development of a new oral method of insulin delivery based on nanotechnology. An oral form of insulin would allow the 75 million people worldwide who use it to manage their diabetes to be treated by simply taking a pill – or even eating a piece of chocolate with insulin embedded in it – rather than being dependent on insulin injections.

The researchers creating ‘smart insulin’ as the next frontier of diabetes management

LIVING WITH DIABETES

Diabetes is a chronic condition that arises when the pancreas doesn't produce enough insulin, a hormone that regulates blood sugar levels. It's estimated that more than 800 million people worldwide are living with diabetes,[1] with an estimated 1.3 million Australians having the condition in 2021.[2]

The condition is predominantly treated using self-administered injections of insulin. However, this isn't an easy process for all patients. "Managing diabetes is hard," Nick says. "If left uncontrolled the consequences are severe, but there is a real challenge to be vigilant about blood sugar levels and maintaining a good quality of life."

The idea to focus on developing an oral form of insulin came when Nick and Victoria discovered from clinicians that there was a real need for an alternative to injections.

"We asked clinicians, 'If there was an injectable therapeutic you wanted to be made, that works quickly in fifteen minutes, what would it be? What is the biggest challenge facing you all?'"

In response, clinicians actually told Nick and Victoria of children and older people living with diabetes who struggled to manage their insulin injections safely and independently, as they often didn't have anyone at home to help. In some cases patients were delaying their treatment, resulting in further complications. In others the issue was preventing them from going home from hospital, as their insulin management plan would need in-home nursing support.

In addition to the challenges of self-administration, when insulin is injected it floods the body with the hormone indiscriminately. Side-effects such as hypoglycaemia – a low-blood-sugar event that results when too much insulin has been injected – can be life-threatening.

"We wanted to devote our time to developing successful oral insulin technology because we believe it will help people with diabetes have more control over their condition," Nick explains.

REIMAGINING NANOTECH

Countless individuals and companies have been in pursuit of an oral form of insulin for decades, and there has been no shortage of attempts to develop one.

"Historically a lot of funds have gone into developing oral insulin candidates, and some have almost made it to market," Nick says.

One huge challenge facing development has been the low percentage of insulin that tends to reach the bloodstream when taken orally.

Victoria, together with Professor David Le Couteur AO (MBBS '81) and in collaboration with UiT Norway Arctic University, discovered many years ago that it was possible to deliver medicines via nano-carriers to the liver. Now Nick and his team are applying this technology to insulin.

The tablet they are developing uses a type of nanoscale material that is one-10,000th the width of a human hair. The material acts in a similar way to an acid-resistant coating on a tablet, which protects it from being destroyed by stomach acids. But in this case the coating is wrapped around individual insulin molecules – ferrying those molecules through the body to the places it needs to act.

The greatest strength of the nanoscale material they've developed, however, is that it is 'smart' – it actually reacts to the body's blood sugar levels to sidestep the risk of hypoglycaemia. The coating dissolves and releases the insulin only where there is a high concentration of blood sugar; importantly, it does not release the insulin in low-blood-sugar environments.

"We wanted to make a smarter, better version of insulin – but not try to replace anything," Nick explains. "We're trying to design something that works with the human body."

The insulin is also attached to silver sulphide quantum dots to help the gut absorb it more easily. Quantum dots are the next generation of nanotechnology, with particles so small they have their own set of new physical and electronic

"We wanted to devote our time to developing successful oral insulin technology because we believe it will help people with diabetes have more control over their condition."

— Dr Nick Hunt

1. World Health Organisation 2024
2. Australian Institute of Health and Welfare 2024

Professor Victoria Cogger and postdoctoral researcher Sophie Kang both have professional and lived experience of diabetes

WHEN RESEARCH BECOMES PERSONAL

Professor Victoria Cogger's laboratory at the ANZAC Research Institute laid the groundwork for investigations into how nanotechnology could be used to deliver medications.

Victoria says that when she first began working on creating an oral insulin, it was purely a scientific pursuit. But then a family member was diagnosed with type 1 diabetes, and the research hit closer to home than she could ever have anticipated.

"Life is strange, and along the way I really started to understand the reality of what life is like for someone on injectable insulin therapy," Victoria reflects.

"Having that lived experience has driven the project in many ways, and created an impetus to improve life for all people living with diabetes. My hope is that we can reduce the multifaceted burden of diabetes through easily accessible oral insulin."

The research also resonates deeply with Sophie Kang (BPharm (Hons) '15, PhD '19), a postdoctoral researcher in the team's lab, who was diagnosed with type 1 diabetes in early high school. She says it was a shock, especially to her parents, as there was no family history of the disease. Sophie's mother, however, does have type 2 diabetes, which had originated from gestational diabetes, so she already had plenty of experience with injecting insulin.

"I was lucky to have that support, as it was easier to adjust," Sophie says. "But it was hard being hospitalised at 13, feeling physically fine but my blood sugars were through the roof. It wasn't pleasant. [But] I try not to make having diabetes an excuse to not do things. It's my motivation to do better."

Sophie is now studying the impacts of oral insulin on the inner biological mechanisms of cells, to discover its long-term effectiveness. She says her background as a pharmacist and lab researcher, combined with her lived experience of diabetes, offers her unique insight into this research.

properties. This technology was awarded the Nobel Prize in Chemistry in 2023.

Nick says one of the biggest challenges was developing quantum dots that are safe to be ingested, as the technology's original design was made for non-human use.

"We had to develop dots with a low level of toxicity – ours were made of silver and sulphur, and we had to find how much silver was safe. There is more silver in a serve of vegetables than there is in our nanoparticle," he says.

Recent testing of the team's quantum dot design found that it drastically increases the absorption of insulin by gut tissues, controlling blood glucose levels without causing blood sugar levels to drop – and without toxicity.

These promising results have paved the way for the orally administered insulin to enter phase 1 human clinical trials this year.

LOOKING BACK, PAVING A NEW PATH

The development of 'smart' oral insulin is the culmination of 20 years of targeted scientific investigation and countless researchers across disciplines. It has involved biomedical researchers, clinicians, chemists, physicists and engineers, many from the University of Sydney's Nano Institute and Charles Perkins Centre. Australia's national science agency, CSIRO, developed the insulin-coated nanoparticles for toxicology studies in animal models.

The project has also opened other doors for Nick, who now leads Endo Axiom Pty Ltd as CEO. The pharma-biotech company, which Nick co-founded with Victoria and David, focuses on developing nanotechnology platforms for the delivery of therapeutic peptides, proteins, antigens and RNA.

Funding from the Medical Research Future Fund, the Targeted Translation Research Accelerator Program for Diabetes and Cardiovascular Disease (delivered by MTPConnect) and biotech incubator Proto Axiom has propelled the project closer to clinical applications.

Nick says that more philanthropic support would allow the team to develop the next generation of therapeutics for diabetes and autoimmune diseases. Such support would also help train PhD students to become future leaders in biotechnology.

As they prepare for their first human trials, Nick and his team are excited about the momentum their project is gaining – and optimistic about the future.

"I think at this point we're really just standing on the edge and seeing just how far we've come so far."

Give now to the University's research priorities

BUSTING HEALTH MYTHS

OUR EXPERTS SORT WELLNESS FACTS FROM FICTION

Written by Alex Johnson

ARE SUPERFOODS REALLY SUPER-HEALTHY?

The Australian health and wellness industry is booming. Food trends, supplements, lotions and powders have become familiar shelf items across the country. We want to feel and look good, and we're willing to pay for it. In 2021, the complementary medicine sector represented a whopping $6.2 billion in revenue.[1] With such a saturated market bolstered by the rise of self-proclaimed (often non-fact-checked) 'wellness gurus' on social media, it's no surprise that we have questions about the efficacy of all these extras. We asked University of Sydney researchers and alumni for their take on your most pressing questions.

Supermarkets are awash with so-called 'superfoods' touted as the secret to better health, longer life, cancer prevention, weight loss and even happiness. A quick online search reveals a flood of claims suggesting that foods such as acai berries, kale and salmon steaks can remedy almost any ailment.

Given the ubiquity of the term, you could be forgiven for assuming that 'superfood' has a scientific definition that grants it an elevated status in our diet, or at least regulates how the label is applied commercially. In reality, the term originated from a World War I-era United Fruit Company's advertising campaign for bananas, which ultimately led to a banana diet craze that allegedly 'cured' coeliac disease.

While we've since learned more about coeliac disease – including that it can currently be managed but not cured, and certainly not by eating bananas – our love of snappy marketing terms has endured. In 2015 there was a 36 percent increase in the use of the word 'superfood' on food packaging after Merriam-Webster added the term to its dictionary the previous year.

But while superfoods are generally assumed to be rich in certain nutrients such as antioxidants or fibre, dietician and lecturer Dr Virginia Chan (BSc '17, MNutrDiet '19, PhD '23) at the Susan Wakil School of Nursing and Midwifery explains that they don't in fact need to meet any specific criteria to be labelled as a such.

"It's really just a label that food manufacturers apply," she says. "Superfoods often actually lack sufficient robust scientific evidence to support their claims."

Virginia advises against becoming overly focused on the marketing hype when doing your grocery shopping.

"I think it's important for consumers to be wary of the way food is labelled and packaged," she says. "Not just the words, but also the pictures and colours used on the packaging. What are they telling you, and how does that line up with the actual content of the food?"

The key is to consume a balanced diet. Virginia recommends reviewing the Australian Dietary Guidelines.

"A lot of superfoods are nutritious, but also a lot of foods not labelled as superfoods are also very nutritious. I recommend eating a variety of different foods to really ensure your body gets all the nutrients that it needs."

Your gut is filled with a unique combination of trillions of bacteria that make up your personal gut microbiome. This microbiome is recognised as having an important influence on how your body works, which has given rise to a billion-dollar probiotic and prebiotic supplement industry.

The idea is that consuming probiotics (microbes that provide a health benefit when ingested) and prebiotics (foods that help those microbes to function efficiently) will restore balance to your gut and improve overall wellbeing.

Perhaps unsurprisingly, it is not quite that simple. Associate Professor Andrew Holmes, from the School of Life and Environmental Sciences, emphasises that while probiotics and prebiotics can be beneficial, it depends on your starting point.

"Taking a probiotic adds a store-bought 'foreign' microbe to 'your' pre-existing community," he says. "Unless it provides a function that was already missing from your microbiome, you won't get any added benefit."

Likewise, feeding your gut bugs with prebiotics will only provide a benefit if they were not already full and working at maximum capacity. Their effectiveness depends on your initial health, unique gut microbiome and diet.

Despite the hyperbolic marketing, Andrew cautions against dismissing the science entirely, citing ongoing research into the therapeutic uses of live bacteria for defined health issues, including genetic conditions and even cancers.

If you've ever wandered through the supplements aisle, you might have seen some of the grand claims on their labels that promise rapid weight loss by 'controlling your appetite' or 'burning fat'. If these claims sound too good to be true, it's because they are.

Associate Professor Nick Fuller (MNutrDiet '06, PhD '14) explains: "Unlike pharmaceutical drugs, which require regulatory approval and gold-standard randomised controlled trials, supplements do not require clinical evidence for their claims. We could come up with an idea, say a supplement is great for weight loss and then open an online shop the next day."

Although Australian manufacturers of herbal and dietary weight-loss supplements are required to hold evidence of their claims, only around 20 percent of new supplement listings with the Australian Register of Therapeutic Goods (ARTC) are audited annually, meaning the industry is largely unregulated. Meanwhile, two meta-analyses of studies into weight-loss supplements conducted by researchers at the Charles Perkins Centre found that there was insufficient evidence to recommend any herbal or dietary supplements for weight loss, and that many existing studies featured poor research methods or reporting.

But with one-third of Australian adults reporting feeling dissatisfied with how their body looks in 2024, weight loss remains a hot-button issue for many of us. According to Nick, however, the key is not a pill but a mindset shift away from influencers and crash diets and towards long-term, evidence-based lifestyle interventions.

"A short-term obsession with weight loss doesn't work, and the research shows you'll end up in a worse position," he says. "Evidence-based lifestyle medicine should involve diet, exercise and sleep, and losing weight in small increments – for example, using an Interval Weight Loss approach, a program I have developed. It's about setting a goal that's really years down the track, instead of weeks or months."

If you've ever experienced anxiety or depression, or even just gone through a period of feeling low, there's a good chance that a well-meaning friend or family member might have recommended that you take a vitamin D supplement. Following a series of studies indicating that many people with depression also showed low levels of vitamin D in their bloodstream, the idea that vitamin D supplements could help improve mood gained a foothold in the popular imagination.

So will the so-called 'sunshine' vitamin really fix your mood? According to Dr Jacob Crouse (MBMSc '17, PhD '21), Senior Research Fellow at the Brain and Mind Centre, the answer lies less with the sunshine vitamin and more with the sunshine itself.

Our mood is partly regulated by the internal biological clock within our brain's neural circuitry. This clock runs on approximate 24-hour cycles that are significantly influenced by bright light, particularly sunlight.

"Our brain's circadian system ('body clock') is always trying to figure out what time of day it is so that it can organise the 24-hour rhythms of our physiology and behaviour," Jacob explains.

Disruptions such as jet lag and interrupted sleep can weaken those rhythms over time, influencing the regulation of our mood, physiology and behaviour. This in turn can exacerbate and potentially even trigger mood disorders such as depression and bipolar disorder. A recent study by Jacob and his colleagues in the centre's Youth Mental Health and Technology Team at the Brain and Mind Centre showed that people with depression who reported spending less time in daylight had worse depressive symptoms and slept more poorly.

"Studies have actually demonstrated that the supposed effect of vitamin D on the risk of mental disorders might not be causal but the other way around," he says. "Rather, people with poor health may be more likely to stay indoors and get less exposure to vitamin D from sunlight."

So if you're looking for a mood booster, Jacob recommends taking some other simple steps to improve your circadian rhythms.

"Think of your circadian clock as an old analogue clock that you need to set each day," he says. "Getting outside into the sunlight first thing in the morning, taking regular breaks throughout the day and reducing your exposure to bright light after the sun has set are great principles to follow. Our circadian system is very responsive to our behaviour, so trying to follow a regular sleep-wake cycle is really important."

Food as medicine

Le Cordon Bleu–trained chef Marzio Lanzini manages one of Sydney's newest kitchens – not in a high-class restaurant, but as 'chef-in-residence' at the University of Sydney's Charles Perkins Centre.

Working closely with a dietician, an exercise physiologist and scientists, Marzio brings the science of 'food and exercise as medicine' to life.

Spearheaded by Professor Luigi Fontana, a globally recognised expert in longevity and preventative medicine, this multidisciplinary initiative is part of a partnership with the Sydney Local Health District, supported by the Australian Youth and Health Foundation.

On any given day, Marzio could be at a high school teaching students how to shop and prepare a healthy lunch or running cooking workshops for clinical patients in the metabolic kitchen at the Charles Perkins Centre–Royal Prince Alfred (CPC-RPA) Clinic.

"Many people have a vague idea about healthy eating guidelines," Marzio says. "but not what that looks like on a plate, or how to have the pantry stocked and things prepped to pull it together after a day at work.

"We're also hearing that there's lots of misinformation on diet on platforms like TikTok and Instagram. We want to give people scientifically based advice they can trust."

Make one of Marzio's delicious recipes

1. Statista report, Complementary medicines market revenue Australia 2021–2024

AMPLIFYING FIRST NATIONS VOICES

As Director of the University's Poche Centre for Indigenous Health, Professor Michelle Dickson is at the forefront of addressing the gap in culturally appropriate mental health support for Aboriginal and Torres Strait Islander people.

Written by By Cassandra Hill Photography by Stefanie Zingsheim

Michelle Dickson, Director of the University's Poche Centre for Indigenous Health, is working to close the gap in Aboriginal and Torres Strait Islander mental health support.

When Professor Michelle Dickson (PhD '19) and her colleagues wanted to find out more about the social and emotional wellbeing of Aboriginal and Torres Strait Islander people, they conducted a series of 'yarning circles' involving Aboriginal and Torres Strait Islander participants from across Australia. The result is the pioneering What Matters 2 Adults (WM2A) wellbeing measure.

"We asked questions including 'What creates a sense of wellbeing? And 'What does wellbeing mean for you?' Michelle explains. The responses received enabled the team to identify 32 significant factors that they classified into 10 key domains: balance and control; hope and resilience; caring for others; culture and country; spirit and identity; feeling valued; connection with others; access; racism and worries; pride and strength. "We then worked closely with statisticians and health economists to further refine the tool from a psychometric perspective," she says.

A proud Darkinjung/Ngarigo woman, Michelle is the Director of the Poche Centre for Indigenous Health, a flagship research centre in the Faculty of Medicine and Health, committed to addressing health inequities, by positioning Aboriginal and Torres Strait Islander voices at the centre of its research.

With a 52 percent increase in hospitalisations for First Nations people due to mental health-related conditions between 2009–10 and 2018–19[1], along with a suicide rate that's significantly higher than that of the non-Aboriginal population[2], the answers to the questions Michelle's team asked are critical.

"Many Aboriginal and Torres Strait Islander people express frustration with long waitlists and a lack of culturally responsive care and are turning to emergency departments that often also have similar challenges," she says.

"When I approach my research I leave my professorship at home," Michelle says. "It's important for people to know me as a mother, grandmother, colleague, friend. I think, 'Approach the person first, not the research first' – that's why we've had really good interest in our collaborations."

Believed to be the first national measure of Aboriginal and Torres Strait Islander wellbeing developed in this way, the wellbeing tool is already being used in several NSW Local Health Districts, thanks to a National Health and Medical Research Council grant.

"We're working with Aboriginal and Torres Strait Islander cancer services to embed the tool into their everyday practice," Michelle says. "It can flag if someone feels disconnected from family, culture, or Country, prompting clinicians to explore ways to enhance their wellbeing."

This success has led to funding for research with children and young people. "We asked them to take photographs of things that enhance their wellbeing," Michelle says. "The stories that came from young people about what contributes to their mental health were just so rich that we were able to work towards developing a culturally specific, psychometrically tested tool for young Aboriginal and Torres Strait Islander people."Young people are very articulate about what works – they just need to be heard."

Several health districts have now used this research to advocate for additional funding and to improve policies.

1. Australian Bureau of Statistics, National Aboriginal and Torres Strait Islander Survey, 2022-2023
2. 2024 Closing the Gap Report

"Some health services have been able to employ Aboriginal and Torres Strait Islander health workers, and it has transformed the way people receive health and wellbeing services," Michelle says.

Michelle's academic journey began with an honours degree in literature; however, working with Aboriginal and Torres Strait Islander communities and in adult education sparked a desire to shift to the public health sector. This ultimately led her to a PhD, and to academic research and teaching.

She recalls feeling isolated when she first started out a student. "I was the first in my family to finish school, so I didn't have anyone to ask what university was like."

With over three decades of experience in public health, serving as Director of the Poche Centre and recently promoted to Professor – Michelle is leading the way in ensuring that Aboriginal and Torres Strait Islander knowledge is included in policy and practice.

Collaborating with communities, health providers and government, the Poche Centre addresses health inequities across mental health, chronic disease, disability, food security, and natural disaster preparedness.

"Doing things well in research can be as simple as a cultural check-in prior to planning to ensure Aboriginal and Torres Strait Islander perspectives are put first, included and respected," Michelle says, "or partnering with organisations to open doors for funding or to evaluate health programs."

Having led the University's Graduate Diploma in Indigenous Health Promotion for 10 years, Michelle has also made a significant contribution to the growth of Aboriginal and Torres Strait Islander health professionals in the sector.

"A career highlight is seeing so many University of Sydney graduates presenting at conferences," she says. "I feel privileged to have played some tiny role. It's important, because our mob is often the minority in the room. When I started, it was just me at the School of Public Health, so with student and staff numbers growing, it's a powerful thing to witness."

Michelle believes all Australians should learn more about Aboriginal and Torres Strait Islander knowledge and their health challenges. "The more we embrace other ways of seeing the world, the easier it becomes to navigate these spaces."

She also encourages businesses to create employment or scholarship opportunities: "It's about the profound impact small actions have on someone's life and their community."

"I was determined to go to university – even though my careers advisor questioned it," Michelle reveals. "It felt awkward and foreign at first. But now, my sister, her children and mine are pursuing higher education. When one person experiences uplift, it has a ripple effect that transforms lives. Sometimes it's all about having someone bravely step into a space that feels a bit vulnerable at first. Once that step is taken, the paths open up." ●

SAM RECOMMENDS

Craig Reucassel (BEc '99, LLB '02)

Book that changed me

Wandering the Glebe Markets while at the University of Sydney, I stumbled on secondhand copies of a book of Geoffrey Robertson's *Hypotheticals*. While I was aware of the show, reading them as scripts enabled me to understand better the way Robertson took his guests into an entertaining ethical conundrum. I loved the way he explored many sides of an issue and got into the contradictions of our political debates. Not that I have ever copied Geoffrey's forensic approach to questioning, but I think I maintain an interest in looking at an issue from many angles.

Fave podcast

Things Fell Apart, by Jon Ronson. I love how Jon manages to weave together seemingly disparate dilemmas and create a unique story. Jon's voice can take some getting used to, but it's always worth the journey.

Biggest inspiration

New stories. Finding answers. I still love learning new things, whether quick breaking stories on radio each morning or diving deep into a subject like waste or climate change.

Best way to de-stress

Being with family and friends. Kayaking and mountain biking were my main stress relief, but COVID brought me back to tennis and it is taking over – partly because of the social aspect of the game, partly because it's easier to put a racquet in a car than a kayak on a roof. ●

***Craig Reucassel is the presenter of ABC Radio's* Sydney Breakfast*, an original member of satirical comedy group The Chaser, and host of the award-winning ABC TV series* War on Waste.**

ALUMNI SPOTLIGHT

More stories of alumni at work around the world.

NALIN MASTOU

BA/BAdvStudies (Media&Comm) ’24

Inspired by trailblazing female broadcasters, Nalin knew early on that she wanted a career in sports journalism. Now she’s the social expert panellist on *Dub Zone*, the A-Leagues’ dedicated women’s football program. Previously, Nalin was a writer and reporter at Optus Sport, and contributed to the 2023 FIFA Women’s World Cup. She was also invited to produce original creator content for Nike at the Running Summit in Melbourne in 2024. Beyond football, she is a dedicated martial artist with more than six years of training, earning her a black belt and sparking a passion for combat sports, particularly mixed martial arts (MMA).

ERIN LAW

MN ’11

Erin has more than 15 years of experience in humanitarian health, specialising in sexual and reproductive health rights across Africa, Asia and the Americas. With early work in Bangladesh and South Sudan, she later earned a Master of Nursing in Sydney to deepen her clinical expertise. As Regional Health Advisor for the Finnish Red Cross in Nairobi, Erin addresses complex health challenges across Africa. She has championed community-led solutions, such as engaging wrestling teams in South Sudan to promote maternal health, and collaborating with religious leaders in Ethiopia on female genital mutilation elimination programs. Her work spans emergency health response, community-based programming, and health care in Somalia, Burkina Faso, Kenya and Niger. Erin is dedicated to culturally sensitive health interventions that improve outcomes for vulnerable populations.

GARRETT PRESTAGE

BA ’81

Garrett is a sociologist, researcher and activist with more than 40 years of experience who has made significant strides in advancing the rights and health of gay and bisexual men. As the City of Sydney’s first out gay youth worker in the early 1980s, he founded the organisation Twenty10, which continues to support LGBTIQA+ youth. He also led some of the first campaigns in NSW to challenge HIV misinformation and provide vital health information. As a 78er, he was part of the historic first Sydney Gay and Lesbian Mardi Gras. Garrett received a 2023 ACON Honour Award for his lifelong dedication to the health and wellbeing of sexuality-and gender-diverse communities. He retired in 2023, following a distinguished career leading pivotal studies on gay and bisexual men in Australia.

SHIVANSH BHARDWAJ

MCom ’21

After struggling with stage fright at school, Shiv embarked on a mission not only to overcome his own fears but also to empower others to communicate with confidence. Since founding his own business, Speak with Shiv, in 2023, he has facilitated workshops at reputable institutions including the University of New South Wales, University of Newcastle and Delhi University. Through his work he has so far upskilled more than 3000 people. Shiv is also a content creator and digital marketing professional, combining his creativity and communication expertise to help brands thrive. His work has been recognised by AdNews Australia, as well as being awarded LinkedIn’s much sought-after Top Voice badge, a testament to his impactful thought leadership content.

Share your story with us

GURSIMRAT BAWA

MPE (Aerospace) ’16

Driven by a childhood dream of building aeroplanes, Gursimrat moved from New Delhi to Sydney to study Aerospace Engineering at the University. Today he is one of the founding members of Sidebar, a career growth platform designed to help senior tech professionals to develop critical skills and to connect with others in their field. Previously, as Head of Strategy at Engineers Australia, he played a key role in shaping the future of the profession by amplifying the voice of young engineers in critical industry and policy discussions. He has been a driving force in community leadership, leading strategic partnerships, fundraising and policy initiatives at the global volunteer-run non-profit Young Sikh Professionals Network (YSPN), where his contributions have earned him the Young Community Achiever award from the India Australia Business and Community Alliance.

EMILY CASKA

BEcSocSc ’05, MIntS ’07

With more than 20 years of leadership experience in the disability, early-childhood and policy sectors, Emily is a passionate advocate for change. As a sister to Lucy, who has a severe intellectual disability, she brings a lived perspective to her work. She is the Founder of Australia’s first Down Syndrome Institute for medical research and CEO of Playgroup NSW, where she leads efforts to influence government policy and foster community engagement to support early-childhood education. She has twice represented the Australian delegation to United Nations General Assembly received the National Disability Leadership Organisation’s Leadership Award and been a finalist for the HESTA Excellence Awards. She appears frequently as a keynote speaker and in the media, including the *Today Show, Daily Telegraph*, ABC Radio National.

KIRSTY EVERETT

BA ’08, BTeach ’10

Kirsty is a proud Darug woman, renowned author and passionate advocate for cancer support. Diagnosed with cancer at the age of nine and again at 16, she faced tremendous adversity, but instead of being defined by her challenges she channelled her energy into her passions – connecting with friends, excelling in school, and pursuing writing. In 2021, HarperCollins published her memoir, *Honey Blood*, which reflects her journey of growing up feeling different to everyone else, finding community, and learning about the perseverance of love – with proceeds going directly to cancer research. In addition to her writing, Kirsty has been an ambassador for many cancer organisations – helping to raise substantial funds for childhood cancer support – and was recognised for her outstanding voluntary service by former NSW Governor Marie Bashir.

DR CHARLES GAULIN

MBBS ’15

Charles is a haematologic oncologist at Dartmouth Cancer Center and an assistant professor at the Geisel School of Medicine in the United States. A graduate of the University of Sydney’s School of Medicine, he specialises in lymphoma, myeloma, and cellular therapy. His training included serving as chief medical resident at Memorial Sloan Kettering Cancer Center, a haematology/oncology fellowship at Mayo Clinic in Arizona, where he was also chief fellow, and an advanced lymphoma/myeloma fellowship at MD Anderson Cancer Center. Passionate about advancing cancer treatment, Charles has led multiple clinical research and quality improvement initiatives. He currently serves on the Board of Trustees of the University of Sydney USA Foundation, supporting research and education in the United States and Australia.

When Andy Orr (BA '16) inherited a significant sum of money, rather than choosing a life of luxury he dedicated himself to cleaning up Sydney Harbour. Then after retiring three years ago from a 30-year career teaching English around the world, he was able to focus on this mission full time.

"At first I thought people would think I was a bit of an oddball," Andy says, "but then I thought, 'I'm doing something positive for the whole world, not just for Sydney Harbour or Australia.' Taking plastic out of the natural environment and stopping daft fish and birds from eating it is my gift to the planet, so if someone thinks I'm strange, it really doesn't bother me."

Andy, who has given himself the nickname 'GOSH' – the Guardian of Sydney Harbour – collects everything from styrofoam lids to discarded tennis balls, tradies' tools and expanding glue from construction sites, fireworks fuses and cigarette butts. His advice to others is that we can all do our bit for the planet. "Every little bit helps, don't be ashamed to pick it up," he says. "Most people will think you're a wonderful human and will tell you so. A woman who saw me picking up plastic on the beach said to me as she passed by, 'Not all superheroes wear capes', which really lifted me up."

But Andy has a question for our Ask SAM expert.

ASK SAM

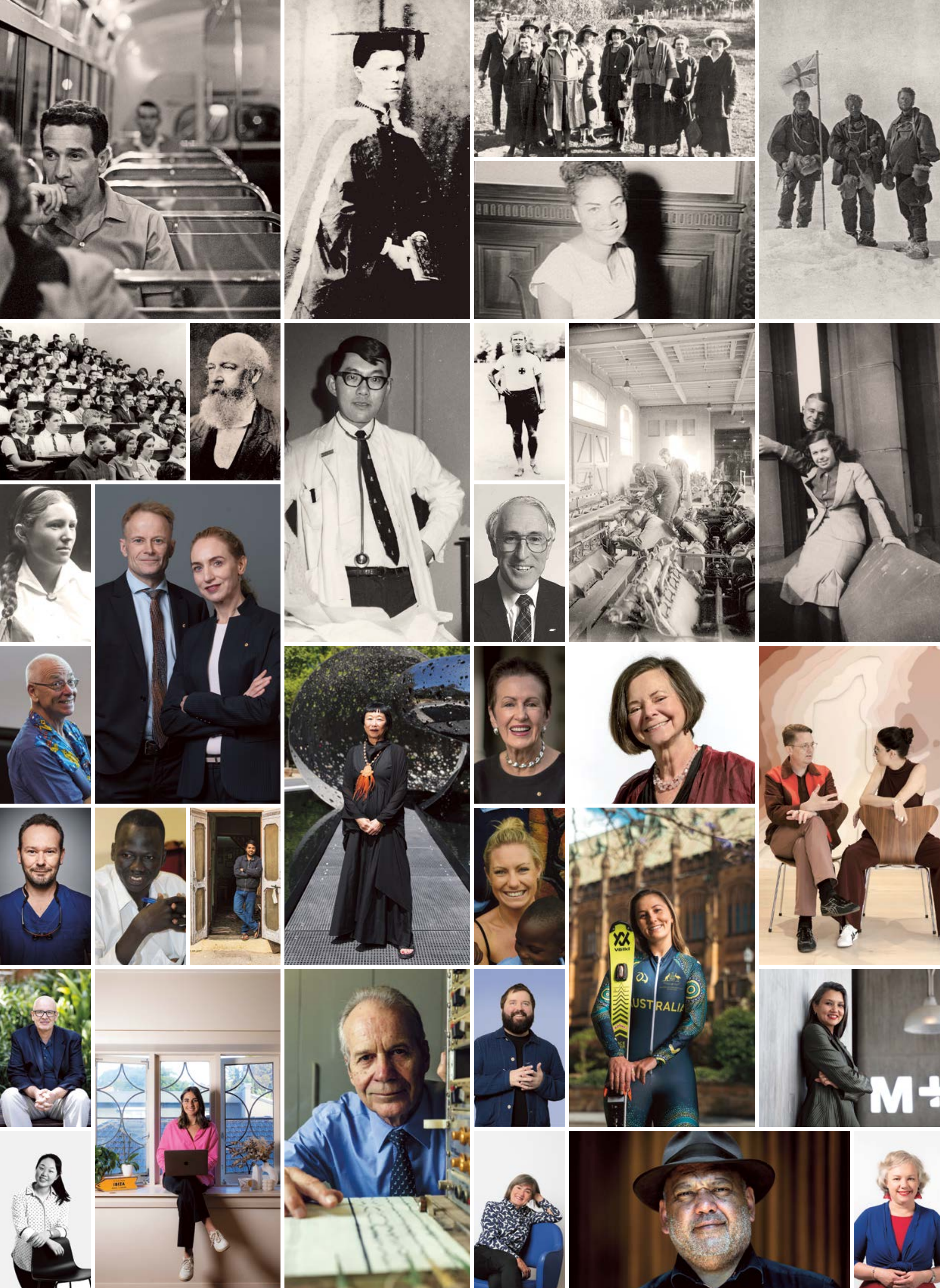
Have a question that's been keeping you up at night? We have experts at the University who can answer it for you. No question is too obscure. Email yours to sam@sydney.edu.au

Q. On average, I take about 5000 pieces of plastic out of Sydney Harbour every week. I put it in public rubbish bins, which go to landfill. I know I'm doing something beneficial for the Harbour (and the planet), but my question is this: By simply transferring plastic from one place (the Harbour) to another place (landfill), how much good am I really doing?

A. You're making a significant impact by removing plastic from Sydney Harbour – preventing marine life from harm and stopping microplastics from spreading through the ecosystem. While landfill isn't an ideal solution, it is a controlled environment that prevents plastics from continuing to circulate in waterways. However, Australia's waste challenge requires systemic change: better producer responsibility, improved recycling infrastructure, and innovation in materials design. Right now, too much of our plastic waste ends up in landfill due to limited recycling capacity. We need policies that mandate recycled content in packaging, improve waste separation, and invest in alternative recovery pathways like energy-from-waste for non-recyclables. Your efforts highlight the urgent need for a circular economy – one where materials are designed for reuse and recycling, rather than disposal.

Professor Ali Abbas is Australia's first Chief Circular Engineer, Associate Dean (Research) in the Faculty of Engineering, and a Professor of Chemical Engineering at the University of Sydney. He leads the Waste Transformation Research Hub's efforts in circular economy innovation, waste transformation, and sustainable resource management.

Researcher with plankton net, used by the University's Department of Zoology to collect plankton for analysis
Undated, photographer unknown
University of Sydney Archives
REF-00070249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