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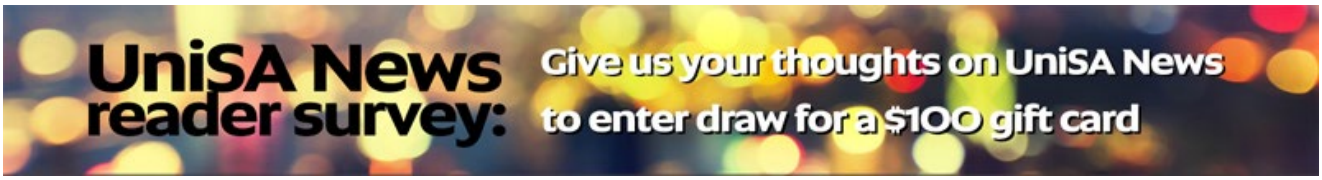
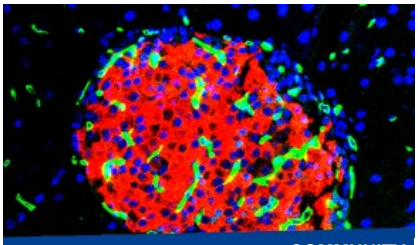


All readers are able to respond to the survey, however the competition is restricted to South Australian residents aged at least 18. See full terms and conditions.



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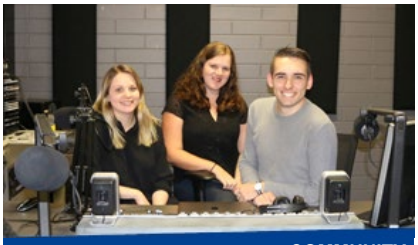

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UniSA rises in international rankings – solidifying place as one of world's top young universities

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by Michèle Nardelli

INSIDE UNISA

UniSA has climbed a further six places to be ranked at number 26 in the Times Higher Education Young University Rankings (universities from across the world under the age of 50); and risen a further 15 places in the QS World Rankings to be placed/ranked at number 264 in the world.

UniSA has increased its standing in two world university rankings in one week.

The University continues to grow its reputation as one of the world's top 250 young universities, moving up six places in the Times Higher Education Young University Rankings 2018 to 26.

UniSA has also risen a further 15 places in the Quacquarelli Symonds (QS) World University Rankings 2019 to be placed/ranked at number 264 in the world.

UniSA Vice Chancellor Professor David Lloyd says the achievement is in no small part because of a determined effort to improve its research, its international outlook, its engagement with industry and its teaching and learning.

"As Australia's University of Enterprise, we have set our sights on institution-wide improvement – in the teaching and research we conduct locally and internationally, how we innovate and create, and how we engage with industry," Prof Lloyd says.

"The rankings reflect not only that we are meeting our improvement targets, but also that we are meeting our own promise to our students when we ask them to study with us, because they are evidence that we are one of the best young universities in the world."

UniSA's performance in the Times Higher Education Young University Rankings has been on an upward trajectory for the past three years.

"Looking forward, our goals are to continue to provide the best experience of university for our students, the best

and most relevant degree programs and the best employment outcomes for our graduates," Prof Lloyd says.

"We want to deliver that for our students by building even stronger relationships with business, industry and the professions, so that when they compete their degrees, our graduates are known for their edge, for being ready to adapt, innovate, lead change and succeed."

Since 2014, UniSA has moved up 77 places in the QS rankings.

"I am very pleased to see that citations have increased dramatically, with research from UniSA academics cited at almost double the global median for the assessed group – this really reflects the growing value of our research internationally," Prof Lloyd says.

"We are also earning a reputation for the diversity of our faculty and the strength that comes from the international experience and perspectives they bring to the education we provide at UniSA."

UniSA has also improved in the European-Commission funded U-Multirank measures, which offer a more diverse assessment approach. More than 1600 institutions in 95 countries are now included in U-Multirank.

"In those rankings we have improved overall, with particularly 'good grades' in areas that reflect our commitment to industry engagement, such as the income from private sources and external research income indicators," Prof Lloyd says.

"In this assessment we are the leading SA institution in the Interdisciplinary publications and patents awarded indicators.

"We also do very well in the indicators that measure our core focus of teaching and learning."

UniSA was also rated A (very good) for the number of its graduates gaining employment in the region.

Prof Lloyd says the big jump in the QS World University Rankings, the strong performance in the U-Multirank assessment, coupled with the rise in UniSA's standing in the Times Higher Education's Young University Rankings to 26, is a confident sign that UniSA is realising its ambitions as one of Australia's leading universities.

"These rankings independently highlight our upwards trajectory and through what they measure, reflect our attributes as an institution – enterprising, committed to excellence and engagement and one of Australia's most exciting and successful universities," Prof Lloyd says.

UniSA is number one in South Australia for graduate employment with an overall employment rate of 90 per cent in 2017, according to the QILT Graduate Destinations Survey 2015 and Graduate Outcomes Survey 2016-17.

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My cancer is in remission – does this mean I'm cured?

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by UniSA Cancer Research Institute Director, Professor Ian Olver

HEALTH

So you've been through cancer treatment and your doctor has called you in for "some good news". Satisfied, she tells you your cancer is "in remission".

What does this mean? Are you cured? Is the cancer gone forever? And what about all those stories you've heard of someone who thought they'd "won the battle" – but then their cancer came back?

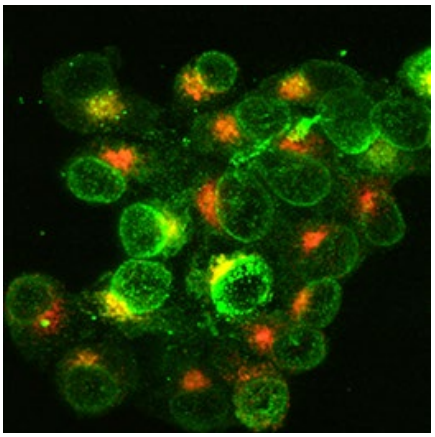
Detecting cancer

Your cancer is in complete remission when, after treatment, no cancer can be detected. The term "cure" can only be used in hindsight. Commonly, years after the cancer has gone into remission, if it has not returned (or relapsed), it is said to have been cured.

However, a secondary cancer could occur if the same conditions that triggered the first are present.

When a cancer can no longer be detected, it's cured only if the treatment has killed every cancer cell. But it's difficult to know if that's the case due to our inability to detect small amounts of cancer.

A skilled specialist may be able to feel a breast lump that is half-a-centimetre wide. A plain chest X-ray can be expected to detect cancers from 1cm wide. And a CT scan will detect smaller cancers to a few millimetres.



Cells fighting infection.

But a cancer 1cm across on a scan has about 100 million cancer cells; even a 0.5cm cancer has about 10 million

cells. A 1mm cancer, which would not show up on scans, has 100,000 cancer cells.

So, even when a cancer can no longer be seen and is no longer causing symptoms, there can still be millions of cells remaining. They can keep growing and eventually the cancer will be large enough to be detected again. That's when the cancer is said to have relapsed.

Some cancers, like testicular cancer, produce proteins (alpha FP and Beta HCG) that can be measured in blood. Measuring these is more accurate than scans in detecting small amounts of cancer.

Better still, chronic myeloid leukaemia (CML) – a rare form of leukaemia – has a characteristic genetic abnormality, which a very sensitive blood test can detect. This is helpful in determining whether a treatment has eradicated microscopic disease. The holy grail would be to develop such sensitive blood tests for every cancer.

Additional therapies

Because we can't tell whether remission means cure for most cancers, treatment strategies have been devised to increase the likelihood of cure. If a cancer is being treated with chemotherapy and becomes undetectable, further courses will be given to continue to reduce the remaining microscopic disease.

Some cancers, like breast and bowel cancer, where there is no visible disease after surgery, are given additional treatment in case some cells are still present near the operation site or have spread more widely through the bloodstream. Radiotherapy is given after the cancer has been removed by surgery to kill any remaining cells in the breast.

When it comes to brain cancer, it's difficult to know if it has been completely cleared. The extent of surgery is limited because of the damage to normal tissues and function, and we don't have very effective therapies to follow up the surgery. This is why it's so difficult to cure.

Chemotherapy, hormone therapy (for breast cancer) or both, are given to kill any cells that might have escaped to more distant sites. Although we can't see the cancer shrinking with the additional (adjunct) treatment, we know from trials comparing patients who receive additional treatment with those who do not that the additional treatment results in more patients being cured.

It is common to use multiple types of treatment – surgery, radiotherapy or drug therapy – to improve the chances of a cure.

Chemotherapy may not be able to kill all of a cancer because it kills cells only when they are dividing, which means resting cells escape. Only a percentage of cells are dividing at any one time. In cancer that percentage is higher than in most normal tissues, so cancer suffers more damage than normal tissues with chemotherapy. Multiple doses might catch the resting cells when they begin to divide.

Another problem is that, after initially shrinking some of the cancer, some cells are found to be resistant, or become resistant, to the chemotherapy and are left untreated. Drug combinations are given as cells resistant to one drug might be susceptible to another.

Five-year outcomes

It's common when reporting cancer outcomes to compare the five-year survival rate, which is the percentage of patients who survive five years after diagnosis. Five years is a convenient interval at which everyone can collect statistics so comparisons can be made between cancers – or the outcomes of cancers between treatment centres, states or countries.

As it happens, with many cancers in remission, to have survived five years does mean they are probably cured. But there are differences for different cancer types.

A person diagnosed with an aggressive lymphoma whose cancer achieves remission is most likely to have been cured if the cancer has not returned in two years. This is because any residual lymphoma would be expected to regrow rapidly.

The opposite is the case for breast cancer. Although the chance of relapse after complete remission is greatest in the first two years and becomes smaller over time, and the five-year survival rate is 90 per cent, relapses have been recorded up to 20 years later.

It is important to note, though, that survival rates have greatly improved over time and are always improving. In the 1970s, only one cancer patient in three made it through the first five years after diagnosis. Today, this figure is around 70 per cent, and exceeds 85 per cent for some cancers that were previously fatal.

So, remission might mean cure but we only know that over time.

This article was originally published on *The Conversation*.

UniSA raising funds for cancer research

UniSA is raising funds for cancer research.

To find out more or to donate visit UniSA's cancer research fund webpage.

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Research gets to root of Adelaide's clay cracking conundrum

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by Candy Gibson

The range of trees being monitored for water usage in the Salisbury Council area.

A joint UniSA and Salisbury Council research project could help curb a multimillion-dollar damage bill to repair cracked houses and roads across Australia, caused by expansive clay soils.

UniSA PhD civil engineering candidate Stacey Vorwerk is working on an empirical model to predict ground movement caused by trees which redistribute moisture, resulting in the soil both shrinking and expanding.

Stacey's project, funded by an ARC Linkage Grant, is centred on the Adelaide suburb of Walkley Heights which suffers from widespread road cracking caused by ground movement in the clay soils, costing Salisbury Council millions of dollars each year in repair bills.

The trees – with nearby damage to road surfaces in Walkley Heights – that were chosen for the research include the golden rain tree, ornamental pear, prickly paperbark and Queensland box.

Using these trees as the focus for her research, Stacey has scientifically monitored water usage for each tree species, correlating that data with ground movements and soil moisture changes.

The model she develops may be scaled out to other tree species to help engineers design house footings and road and rail surfaces to withstand soil movement over a 50-year period.

Her findings will help councils choose and manage tree species more suited to clay soils, to limit the damage caused by clay soil shrinkage and expansion.

Stacey says that current Australian Building Industry standards do not provide enough guidance on the impact of tree species on housing


An example of how clay soil reacts in a drought.

infrastructure.

"We just don't have sufficient information to know what any tree species is doing in terms of the ground movements of our clay soils which are particularly prevalent in Adelaide," she says.

"There is also no unified approach across the world to test and compare soils."

Newer homes are less likely to crack, but as house footings are expected to last 50 years, the updated Australian housing guidelines (introduced in 2011) have not been put to the test, Stacey says.

> **While no concrete figures are available for Australia, the UK's insurance sector has publicly stated that damage produced by expansive clay soils far outweighs the total cost of damage caused by earthquakes, floods, tornadoes and hurricanes.**

In a non-drought year, 15-20 per cent of UK insurance claims are related to soil shrinkage which causes road and building cracking.

Likewise, in the US and China, clay soils are responsible for a combined annual damage bill of $30 billion in repair works, according to a 2004 study.

Stacey's research is also expected to shed light on how trees redistribute moisture in clay soils via their roots.

"The current technology is not sophisticated enough to tell us where the roots are going, particularly in clay soils. Their distribution remains unpredictable, particularly along residential streets and we need to develop more reliable, non-invasive methods to observe the tree roots."

Expansive clay soils cover about 20 per cent of Australia's surface and are found on every continent except Antarctica, notably in arid and semi-arid regions.

"Councils in Adelaide face phenomenal costs due to the clay soils causing roads to crack, even the relatively new ones," Stacey says.

"It's an engineering problem that has plagued the industry for around 40 years, but thanks to the emerging crossover between environmental science and engineering, it is now starting to get some attention."

Stacey's thesis, undertaken in the School of Natural and Built Environments under the supervision of Dr Don Cameron, is expected to be completed in 2019.

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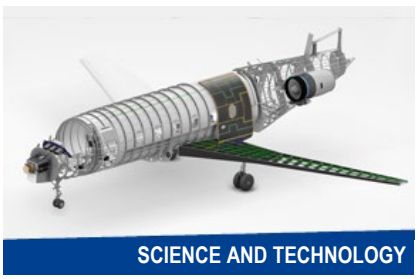

New 3D design software gives students a leading edge more

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From the Chancellery

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INSIDE UNISA

Our University has sometimes been accused of having imagination. We do. We imagine what it would be like if industry, government and higher education collectively took responsibility for growing the economy.

What if we decided to co-create a future that was economically sustainable and offered real value to the community?

Partnerships have defined UniSA, in the 27 years since our foundation and as we rose to become one of the world's very best young universities.

We partner with innovative businesses to co-create successful outcomes. We work with our partners to refine the theory of what we teach.

Through our partners, our students can put what they learn into practice – providing the kind of experiences that deliver work-ready graduates.

Through partnership we co-create a future that benefits us all. This month, through partnership, we received a game-changing donation from international software giant, Siemens.

Almost half a billion dollars' worth of advanced industrial software which, in our hands, will ensure our students can step seamlessly into the new environment of Industry 4.0.

At a time when South Australia needs it most, this partnership will underpin skills development to cover end-to-end needs, from the formation of ideas to design, and to lead innovation at the cutting-edge of industrial and manufacturing innovation.

Significantly with this capability, our students acquire the skills and tools to drive SA's future as the nation's defence industry hub. They will be equipped to help the State and the nation prepare for future growth underpinned by digital technology. And it's not just our students getting experience in this new industrial

revolution of cyber physical systems, the Internet of Things, cloud computing and cognitive computing that will be the base of advanced manufacturing.

Our researchers across space, mining, environment, defence and biomedical technology will be able to model and prototype new ideas.

When they have at their disposal improved automation, machine-to-machine and human-to-machine communication, artificial intelligence, continued technological improvements and digitalisation in manufacturing – when they find new ways to use global engineering and manufacturing platforms – they will be even better equipped to imagine and to ask the biggest question: what if?

UniSA is Australia's "university of enterprise". We deliver by understanding that our way is not the only way, by seeing opportunities and possibilities.

We deliver by harnessing the enormous power of partnership to make the co-creation of a prosperous future a reality.

Professor David Lloyd
Vice Chancellor and President

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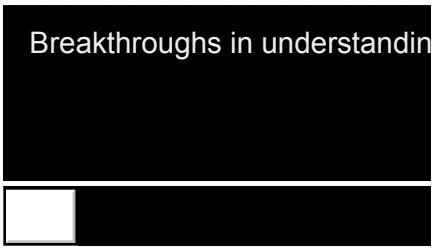
CCB researcher joins Australia's science luminaries

UniSA molecular biologist Professor Greg Goodall has been recognised for his outstanding work to understand cancer by the Australian Academy of Science – one of Australia's most prestigious scientific organisations.



Professor Greg Goodall talks about his work in cancer research.

The Australian Academy of Science has awarded Professor Greg Goodall, from the Centre for Cancer Biology, its highest honour, electing him as a fellow.

Prof Goodall is a world leader in the biology of RNA and cancer progression, focusing on the molecular control of cellular processes. He has made discoveries that open new areas in RNA biology for development and exploitation. These breakthroughs have widespread implications for understanding gene regulation in biology, particularly in immunity and cancer.

"Cancer affects the lives of many people – we all know someone who's had cancer, so to work in that area is important and gives one satisfaction that the work we do can ultimately be of value to many people," Prof Goodall says.

"It's a great honour to be elected a member of the academy but I think that honour belongs as much to all the people I've worked with over the years as it does to me – it's that teamwork that leads to the discoveries."

Prof Goodall was among 21 scientists from across Australia who were elected to the Australian Academy of Science in May for their outstanding contributions to science.

Academy president Professor Andrew Holmes congratulated the new fellows for making significant and lasting impacts in their scientific disciplines.

"These scientists were elected by their academy peers, following a rigorous evaluation process," Prof Holmes says.

"They join a prestigious group – six Nobel Prize winners and luminaries including Sir Mark Oliphant, Professor Nancy Millis, Sir Douglas Mawson, Professor Frank Fenner and Sir David Attenborough."

UniSA staff member receives emerging artist award

Naire Orthu by Ursula Halpin. *Photo courtesy Grant Hancock.*

An upcoming glass artist who's also a member of staff in UniSA's School of Art, Architecture and Design has won JamFactory's FUSE 2018 Emerging Artist award.

Ursula Halpin, a UniSA Visual Art Honours graduate, won the award for her work *Naire Orthu* ("shame on you all" in Gaelic) that recalls traditional Irish handcrafts such as Kenmare lace.

The prize is awarded to an emerging glass artist and acknowledges new talent. The prize includes $2500 cash and a professional development residency at JamFactory's Glass Studio.

Halpin says the award means a lot to her.

"As well as being recognised nationally in Australia and across the water in New Zealand, the reputation of the FUSE Glass prize represents global recognition as an emerging artist," she says.

"The installation is hung in the shape of a womb and is especially relevant as my mum and sisters vote in the Irish Referendum (which was held in late May) to change the constitution and allow Irish women the same health care rights as her European and Australian counterparts."

Halpin beat five other finalists, including two from interstate, to win the category. She plans to give a talk to the Glass Society of Ireland in July.

The judges were impressed with the formal and conceptual ambition of her work, which is on exhibition at JamFactory Adelaide until 8 July.

UniSA student signed to European soccer club

UniSA student Paris Duffield has been signed to play for Spanish top-flight club CD Leganes.

A UniSA student has been signed to a European club and hopes to become the first South Australian since Socceroos great John Aloisi to play in Spain's premier soccer league.

Paris Duffield, 18, who's studying a Human Movement degree at UniSA, has signed a one-year youth team contract with Madrid-based La Liga club CD Leganes.

Paris represented Australia in January as a member of the Under 19s Australian Schoolboys Soccer Team, was scouted for trials in January by the Spain-based Genova International School of Soccer and was invited to return to train full-time with the Madrid-based football program.

He is the first South Australian and 50th Australian to graduate from the Australian Genova International School of Soccer and go on to sign with a European club.

Paris told The Advertiser he hoped to use the opportunity as a springboard to emulate Socceroos great John Aloisi, who shone for Spanish sides Osasuna and Alaves from 2001-07.

"It's a dream come true for me," Duffield told *The Advertiser*.

"It's been a huge opportunity being over here (Europe) for the past couple of months compared to playing football in Australia.

"It's a lot quicker, it's a lot more precise and there's a lot more patterns of play you have to remember.

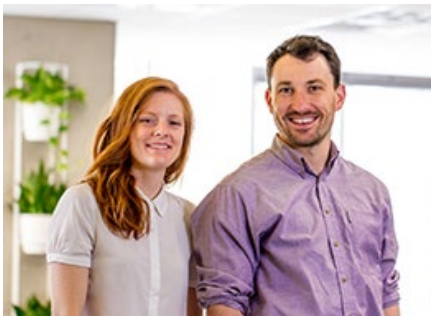
"It's definitely some big boots to try to fill (Aloisi's).

"But I'm hoping to keep working and eventually see if one day I can get to that La Liga standard."

ICC resident start-up wins Pank Prize

A UniSA-based start-up company which offers interpersonal game

sessions to ignite corporate culture has won the 2018 Pank Prize for Social Innovation and Enterprise.


Kelly Carpenter and Jeff Broad of Culture Team.

Culture Team, from UniSA'S Innovation & Collaboration Centre (ICC), won the prize, which is designed to help the recipient establish an innovative social enterprise in South Australia and is open to current UniSA students and alumni.

Culture Team was founded by Product Design students Kelly Carpenter and Jeff Broad to take a human-centred approach to design and facilitate corporate team-building games.

"We were totally overwhelmed with news of the win," Kelly says. "It was a huge vote of confidence from the panel, which was so thrilling.

"$10,000 is going to go a long way in accelerating what we're capable of."

Without a large budget to build, test and deliver their games, Culture Team plans to spend their prize money wisely.

"This prize money will allow us to transition our DIY games into premium products which are worthy of our market," Kelly says.

"We've had huge support from the University in terms of space and the community at the ICC, testing and feedback with students and staff, as well as the Pank Prize, and for all of this, we are extremely grateful."

Early customers of Culture Team include UniSA Ventures and the UniSA student careers and leadership team.

The Pank Prize is sponsored by the Pank Family and UniSA's School of Management.

Research to reduce CO2 emissions earns PhD student Ian Wark medal

Research to solve real-world problems associated with CO2 emissions has earned PhD student Dr Kripal Lakhi the 2017 Ian Wark Research Institute Medal.


Dr Kripal Lakhi (left) receiving the Ian Wark Medal.

Each year the medal is awarded to the Future Industries Institute PhD candidate with the most outstanding thesis.

The winning 2017 thesis was titled 'Design of novel functionalized carbon nitride nanostructures for carbon capture and photocatalytic applications'. The project was supervised by Professor Ajayan Vinu and Dr Daehwan Park.

Dr Kripal Lakhi says the award will have a significant impact on his research career and has provided an enormous boost to his self-confidence in solving challenging real life scientific problems.

"My PhD research addresses the key environmental issue of global warming attributed to the emission of carbon dioxide coming chiefly from the combustion of fossil fuels and power generation plants," Dr Lakhi says.

There are two ways to solve the problems associated with CO2 emissions – one option is to completely shun the use of fossil fuels and the other is to trap the emitted CO2 before it is released into the environment.

"I adopted the latter approach and developed a series of porous carbon nitride based adsorbent materials that can capture large quantities of CO2 from point sources such as a power plant flue gas stack," Dr Lakhi says.

"In the last few years, major energy and utility companies including petrochemicals, refineries and fast-moving consumer goods companies are making serious efforts to cut down their carbon footprint by reducing the emissions of CO2 by making their processes more energy efficient using clean and alternate renewal energy sources.

"In that respect, my PhD research work has a significant impact on every industry where CO2 is generated and eventually dumped into the environment.

"In fact, my PhD research work was part of a multi-million-dollar project sponsored by SABIC, Saudi Arabia.

"The real-world impact of the research is that it would help companies reduce their carbon footprint and provide a

viable low-cost solution to reduce the amount of CO2 released into the environment thus reducing global warming. During my PhD, I applied for seven US provisional patents which shows the real-world impact of the research."

UniSA research fellow's clinical guidelines recognised internationally

A UniSA research fellow's work developing clinical guidelines to improve the effectiveness of healthcare services has been internationally recognised.

Dr Janine Dizon, a research fellow in the International Centre for Allied Health Evidence (iCAHE), has been teaching and developing strategies to support students, clinicians, care providers and patients for about 15 years. She uses evidence-based research and practice to identify the action plans to streamline and deliver a wide range of services relating to lower back pain, stroke, cancer and vaccines.

Her work has been recognised in the Philippines, South Africa, Hong Kong and Australia, and she is in the planning stages of adapting vaccine guidelines into the local context in South Africa and stroke rehabilitation guidelines for physiotherapists in India.

Dr Dizon says that for health and medical treatments to be effective in communities, intense research is needed using a methodology that understands local context issues, leading to the development of relevant and appropriate guidelines.

Although the focus has tended to be on tailoring guides to the needs of healthcare professionals, Dr Dizon says considering the "real-life issues and needs" of the population in the context of their healthcare system makes all the difference.

"Understanding the local context and addressing the local context needs is critical in ensuring research is relevant and applicable in the real-world practice," Dr Dizon says.

She says local context considerations such as the barriers, the setting, available resources, patients' culture and beliefs are fundamental to how research will be conducted, how research findings will be utilised, and the ultimate success of healthcare guidelines.

"To do this, hearing the voices of key people involved in the healthcare system – clinicians, policy-makers, patients and other consumers and academics – is a critical part of the process.

"For example, for research and guidelines to be implemented, we need to know the type of setting (is it a hospital or a clinic, metropolitan or remote area), the healthcare professionals in the setting (doctors, nurses, allied health professionals), the available resources (machines, testing equipment), types of patients and their culture (what patients' value in order to direct goals of treatment), policies in place and funding available and other local context issues that would facilitate (or not) the application of research into practice."

Dr Dizon has applied this work in the training that iCAHE provides to its clients such as the Hong Kong Hospital Authority and iCAHE journal clubs in South Australia.

With her teaching and implementing, Evidence Based Practice (EBP) and Clinical Practice Guidelines (CPG) experience, Dr Dizon was awarded a post-doctoral research fellowship in 2015 for the South African Guidelines Evaluation (SAGE) Project, a partnership between Cochrane South Africa, Stellenbosch University and UniSA's iCAHE.

"Our iCAHE collaborators from India have heard of our CPG work and have been very interested in us doing the same work for physiotherapy in India," she says.

UniSA staff feature in Queen's Birthday honours list

A number of UniSA staff, alumni and people closely associated with the University have been recognised for their services to research, education and the community in the 2018 Queen's Birthday honours.

Adjunct Research Fellow Andrew Marshall from the School of Natural and Built Environments was made a Member in the General Division of the Order of Australia (AM) for significant service to the building and construction industry through professional organisations, to academia, and to the Anglican Church of Australia.

The chair of UniSA Ventures, John Grace, was made an Officer in the General Division of the Order of Australia (AO). The award was for distinguished service to science in the field of biotechnology research and commercialisation, through advisory roles, and to professional scientific associations.

Catherine Branson QC, a former member of UniSA's University Council, was made a Companion of the Order of Australia (AC) for eminent service to the judiciary as a judge of the Federal Court of Australia, to the law as an advocate for human rights and civil liberties, to judicial administration and professional development, and to governance roles in tertiary education.

Graduate and Honorary Doctor of the University, the late Alice Rigney, was posthumously made an AO for distinguished service to education, particularly through providing opportunities for youth, and to the promotion and protection of Indigenous language, culture and heritage.

See the Alumni network website for details on other alumni who received honours.

UniSA graduate wins life changing award

UniSA graduate Marissa Ziesing has been awarded a Helpmann Fellowship valued at up to $20,000 and aims to enable early career artists to pursue professional development opportunities overseas or interstate.

Ziesing's 'Senses of Place' jewellery pieces are crafted from fine silver, sterling silver, oxidised copper, gold plated sterling silver and silk cord.

Ziesing will undertake a six-month residency at Bishopsland Educational Trust in the United Kingdom thanks to the fellowship. The program will help Ziesing hone her silversmithing skills and equip her with skills to operate as a self-employed jewellery maker.

"It also allows me to meet renowned British silversmiths and travel to schools in Europe that celebrate and support the industry of silversmithing," Ziesing says.

Ziesing is the first Australian artist to be accepted into the residency.

A UniSA Bachelor of Visual Arts graduate, Ziesing specialised in Jewellery and Metal and attributes her success to perseverance and hard work.

Ziesing's silversmithing portfolio formed part of her successful application to Bishopsland Educational Trust.

"I view my practice as a job so I have dedicated working hours in my studio, the same as a regular work day. This is very important to staying focused and completing the goals I set."

UniSA is ranked number one in South Australia for graduate careers in creative arts, according to the QILT Graduate Destinations Survey 2015 and Graduate Outcomes Survey 2016-17.

Ziesing plans to travel to North Wales for a mentorship with established silversmith, Junko Mori, before beginning her residency in Reading, England.

ANNOUNCEMENTS

UniSA researchers help regional students transition to university

A new resource to help regional students adjust to university life has been developed by UniSA researchers.

Dr Helen Stallman and Associate Professor Sharron King have developed the Regional Student Success and Wellbeing resource as part of their involvement with the International Association for University Health and Wellbeing. Dr Stallman is director and Assoc Prof King is deputy director of the association.

"Isolation and distance can mean many regional and remote students miss out on the support their urban counterparts take for granted," Dr Stallman says.

Assoc Prof King says the resource aims to bridge this gap with "accessible, meaningful, useful, sustainable and timely information."

The resource was piloted at UniSA's Whyalla and Mount Gambier campuses. Students and staff provided anonymous feedback, with staff reporting increased awareness of health and wellbeing resources.

"I am more confident now in knowing how to help a student who is struggling and where to direct them to get the help they need," one staff member responded in the survey.

Students reported increased skills to manage stress, self-doubt, study habits and attitudes.

"I think my biggest shift has been changing the way I think of study from a negative to a positive point of view," one student wrote.

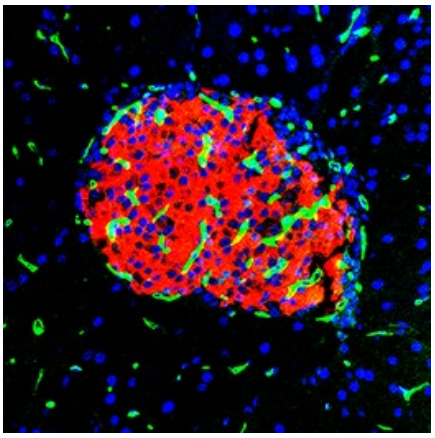
Dr Stallman says the resource is available to universities across the world through the International Association for University Health and Wellbeing.

"UniSA is leading the way in developing and implementing these resources that help students with healthy learning habits and healthy personal habits that contribute to learning and success," Dr Stallman says.

The resource will be launched at the Higher Education Research and Development Society of Australasia (HERDSA) Conference, with the theme *(Re)Valuing Higher Education*. The conference will take place in Adelaide 2-5 July.

Can you capture UniSA research in a photograph?

The University is challenging its staff and students to use photographs to create a window into the world of research with the launch of this year's annual research photography competition.



Bonder insulin producing pancreatic islet.

Now in its fourth year, the 2018 Images of Research: Engaged Research, Enterprising Researchers Photography Competition opened in May. The competition, which aims to visually showcase the breadth and diversity of research at the University, is open to all staff and students.

Deputy Vice Chancellor: Research and Innovation, Professor Tanya Monro says the image doesn't need to explain the research being conducted, but rather entice and captivate one's attention to raise awareness about our research.

First prize is $5000 with a runner-up prize of $2000 and an additional $2000 prize for the People's Choice winner. The competition closes on 27 June. For more information, go to the Images of Research competition website.

Provide feedback on UniSA News and you could win $100 gift card

Your views are needed to help improve UniSA News.

UniSA's News and Communications team is undertaking a survey of UniSA News readers to identify ways to improve the monthly ezine.

There are three versions of the survey depending on whether you're a student, staff or graduate / alumni.

A $100 Coles Myer gift card is on offer to a randomly selected person who completes the survey, subject to the terms and conditions of the competition.

Complete the appropriate survey from these three options:

- Student survey
- Staff survey
- Alumni / graduate survey (including anyone else who's not a student or staff member)

All readers are able to respond to the survey, however the competition is restricted to South Australian residents aged at least 18. See full terms and conditions.

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Latest content revision:Thursday, 14 June 2018

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Students get leading edge through 3D engineering and design simulation

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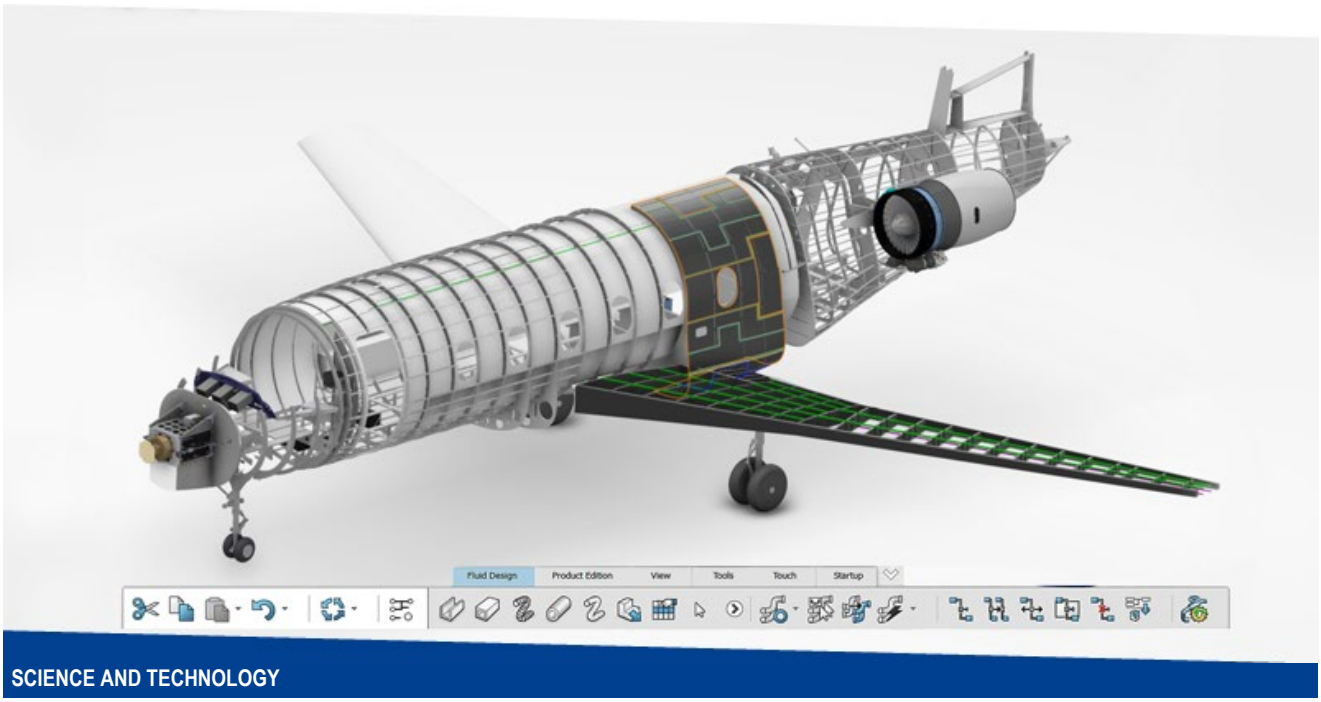
by Michèle Nardelli



SCIENCE AND TECHNOLOGY

Aerospace manufacturers, such as Airbus Group and Boeing, deploy Dassault Systèmes' 3DEXPERIENCE Platform for structural analysis, simulation and virtual testing of aircraft designs. Simulation of these designs in the 3D virtual environment helps aerospace manufacturers accelerate the process of evaluating and improving aircraft performance, reliability and safety, before committing to costly physical prototypes.

UniSA is joining forces with Dassault Systèmes to give students a leading edge in 3D engineering design and simulation, with the signing of a strategic partnership and a deal to deliver specialist software to support education for the defence, satellite systems and other industries.

The strategic agreement underpins a range of initiatives including student access to Dassault Systèmes' 3DEXPERIENCE Platform and plans to develop a 3DEXPERIENCE Innovation and Collaboration Centre that will support the University's industry partners to work with the latest technology and be a base for further collaboration between UniSA and Dassault Systèmes.

Member for Gibson Corey Wingard (representing the Premier), UniSA Chancellor Jim McDowell and Dassault Systèmes' Managing Director for Asia Pacific South, Masaki Sox Konno, at the signing of the strategic agreement.

UniSA Vice Chancellor Professor David Lloyd says the agreement gives UniSA students a huge advantage as they enter the workforce.

"Part of our wider education strategy at UniSA is to place the best end-user tools in the hands of our students so that they are work-ready when they graduate," he says.

From 2019 the University will have developed specialist curricula to integrate the 3DEXPERIENCE platform in

bachelor's and master's degree programs.

"This partnership is important for our students because it gives them an opportunity to become proficient in one of the key engineering technology and design software systems used widely in the defence industry and across the engineering profession," Prof Lloyd says.

"They will have both the knowledge and the practical experience to take on the many vital roles that will support the burgeoning naval defence sector as the Federal Government delivers on its $89 billion Future Frigates and Future Submarines plans."

The agreement will also establish opportunities for research, internships and training activities with industry.

Dassault Systèmes' managing director for Asia Pacific South, Masaki Sox Konno says he is delighted to be forming a partnership with UniSA.

"It is vital that today's universities enhance the skills development of their students to ensure they are job-ready in the digital age and that they stay abreast of the evolution of digital technology in a systematic model," Masaki Sox Konno says.

"We are excited to be working with UniSA to nurture students' digitalisation skills through the 3DEXPERIENCE platform – skills not only essential for Australia's future shipbuilding industry, but across a diverse spectrum of industries such as mining, retail, urban planning and construction which increasingly require new 'digitally enabled' talent for their business transformation."

For more information, read the media release about the partnership.

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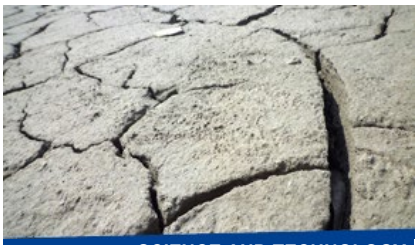
Largest Australian software grant helps unlock careers for UniSA students more



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Research gets to root of Adelaide's clay cracking conundrum more

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Largest Australian software grant helps unlock careers for UniSA students

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by Michèle Nardelli

Siemens Business Development Director (Digital Enterprise) Hakan Ozcelik shows the company's advanced Product Lifecycle Management (PLM) software to UniSA student UniSA first-year engineering student Franke Agenbag.

UniSA students will have access to the software used to design a Maserati, SpaceX rockets and the Mars Curiosity Rover through the largest software grant of its kind in Australia.

Technology company Siemens is providing UniSA students with access to some of the most advanced software of its type – which can be used for 3D design, engineering collaboration, predictive engineering simulation and analytics – through a $450m in-kind gift.

The software grant is part of Siemens' commitment to invest more than $1 billion in advanced Product Lifecycle Management (PLM) software to select universities nationally. The aim is to ensure students develop the skills needed to successfully participate in what has been dubbed the fourth industrial revolution or Industry 4.0, a term used to describe the convergence of advanced automation, smart technologies and data in manufacturing.

UniSA Vice Chancellor Professor David Lloyd says the partnership with engineering giant Siemens Australia, will provide extraordinary opportunities for UniSA students and for local industry in the State.

"It's exciting to think that our students will soon have access to the same

UniSA first-year engineering student Franke Agenbag got to try using the software, describing it as incredibly advanced. Franke hopes to work for the Royal Australian Air Force.

software used to design and develop everything from Space X, the Mars Curiosity Rover, Maserati Ghibli and other world leading innovations such as the digital shipyard for Newport News (US) where aircraft carriers are built," Professor Lloyd says.

"Not only will it give our students experience of an Industry 4.0 environment, it will also deliver huge benefits for manufacturing research at UniSA and, for the industry partners we work with every day, to support innovation and enterprise.

> **"Across defence, space, mining, the environment, and biomedical technology – it will allow us to model and prototype new ideas and give our students experience of advanced technology in the production of things, systems and processes.**

"This investment is really farsighted, and we are delighted to be working with Siemens to deliver graduates with the skills and knowledge to shape and transform industry in the future."

Siemens has announced Australia's largest advanced software grant. The announcement was made at MOD. by Defence Industry Minister Christopher Pyne, South Australian Premier Steven Marshall, UniSA Vice Chancellor Professor David Lloyd, Siemens chairman and CEP Jeff Connolly and UniSA Deputy Vice Chancellor: Research and Innovation Professor Tanya Monro.

Federal Defence Industry Minister Christopher Pyne says the software will help students learn the skills they needed to find jobs in the three massive shipbuilding projects soon to begin in South Australia.

"One of the most challenging aspects of growing a workforce at Osborne, which is around 1800 now to about 5500 in only six or seven years is finding the skilled people who are able to do the job," Mr Pyne says.

"We need everybody from highly skilled carpenters and fitter and turners right through to naval architects, high skilled engineers and mathematicians. So this kind of software capability that students at the University of South Australia and others will have access to will give us a really big boost in terms of creation of the kinds of jobs that will be necessary at Osborne for submarine building and sustainment and maintenance as well as shipbuilding."

Software launch pad for UniSA students

TORY SHEPHERD
STATE EDITOR

ADELAIDE students have been given the software used to design a Maserati, SpaceX rockets and the Mars Curiosity

16-year-old, from Maranoa...
She is hoping to enter the defence industry and work for the Royal Australian Air Force.
"This stuff that has been re-leased [yesterday] is right on

language to speak globally.
Defence Industry Minister Christopher Pyne said it would help create the workforce needed for the Future Frigates, the Future Submarines and the

The Advertiser, 7 June 2018.

Siemens chairman and CEO Jeff Connolly says the grant – the only one awarded in South Australia – reflects Siemens long partnership with the state of South Australia and a commitment to working with great educational institutions to build the workforce of the future.

"I'm delighted to announce the grant of Siemens PLM advanced industrial software with a commercial value of $450 million to UniSA," Connolly says.

"It demonstrates the great partnership we have with the state of South Australia and our commitment to working with great educational institutions to build the workforce of the future."

South Australian Premier Steven Marshall says the skills will transfer across to all advanced manufacturing and

set students up to lead the fourth industrial revolution.

> **"It is not just in the areas of shipbuilding. There are so many other applications for this type of software. We are particularly looking at opportunities around advanced manufacturing," he says.**

"The off-shore patrol vessels, the future frigates and the submarines will allow that technology transfer to other sectors of our economy – manufacturing, mining, agriculture. And this software platform, the 250 licenses in South Australia, enables our students to take on this economy."

The grant is part of Siemens' commitment of more than $1 billion in advanced PLM software grants to select universities nationally and will enable students and the University to develop the skills needed to successfully participate in the fourth industrial revolution (Industry 4.0).

It is linked to the recommendations and work of the Prime Minister's Industry 4.0 Taskforce – an industry led group established to support improved bilateral relations between Australia and Germany.

The Siemens PLM software grant provides a suite of advanced PLM software and ensures UniSA will have access to the same advanced software, processes and best practices that are used to develop some of the most sophisticated global products and systems in industries including automotive, aerospace, shipbuilding, high-tech electronics and more.

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The power of suggestion convinces participants they've received acupuncture

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by Candy Gibson

Felicity Braithwaite demonstrates dry needling, a technique often used in physiotherapy treatments.

How do you convince someone they have had dry needling when they haven't? Easy – you use a magician and the power of suggestion.

That was the tactic employed by UniSA PhD physiotherapy candidate Felicity Braithwaite to help create a placebo, or "sham", for dry needling so the technique can be scientifically tested.

Unlike medical drug trials, where sugar pills provide the perfect placebo, the process becomes more complicated when physical interventions need to be trialled.

"Somehow, we need to convince participants that they have had a real physical treatment when they haven't," Felicity says.

The solution? Call in the magicians and tap into the art of deception.

Dry needling – a western form of acupuncture – is now frequently used in the physiotherapy and allied health fields. It involves needles being inserted into muscle where pain is felt, with the aim of bringing relief. However, a credible sham is needed to provide a way of scientifically testing the effects.

Sham interventions are simulated experiences used in empirical studies to compare the real treatment with the false treatment.

Felicity recruited experts from a range of fields, including research methodology, dry needling, hypnosis and deception to devise a convincing placebo for dry needling.

Magicians Vinh Giang and Gary Edwards helped workshop ideas with cognitive neuroscientists, physiotherapists

and technical experts to devise a sham protocol for dry needling.

The result? A practical experiment which fooled both therapists and recipients.

In dry needling, needles are encased in a plastic shield which is laid on the skin and tapped to guide each needle into specific pain points.

The sham needles used were shorter than the real ones so did not pierce the skin, but because they were encased in a plastic guide tube neither therapist nor participant could tell the difference.

The other deception used was a piece of foam in the sham guide tube simulating human tissue, which gave therapists tactile feedback.

Magician Gary Edwards said his input was more psychological than mechanical.

"We developed some scripts about what a therapist could say to people receiving the treatment," he says.

"They were told it was a new type of needle, very fine, and that they may not feel anything. Whether they did or not was of no consequence, so participants were not under any pressure to report a sensation. That was critical to the success of the trial."

Another tactic – often employed by magicians – was to distract the participants from the process by asking them questions while they were being treated.

"Our brain can't absorb too many things at once so if people are thinking about something they are less likely to pay attention to what else is happening – in this case, a needle being inserted. Doctors and magicians use this technique all the time," Edwards says.

"Basically, our job in this experiment was to get people to believe something that was not true."

A total of 15 therapists experienced in dry needling and 45 'healthy' recipients (with no pain) took part in the trial. Remarkably, almost 60 per cent of the therapists could not tell the difference between the real and sham treatments and 51 per cent of the recipients were also fooled.

"This demonstrates the importance of cognitive influences over tactile sensations in blinding recipients," Felicity says. "Researchers have used magicians before to understand how the brain works but, to my knowledge, this is the first time they have been used to develop a placebo."

The findings contest the widely-held belief that placebos pose an insurmountable challenge in physical intervention research, she says.

The next step is to use the sham in an actual trial to determine whether dry needling works beyond placebo effects.

Felicity's research was supported by an Australian Government Research Training Program scholarship. She has recently submitted her thesis for examination.

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MOD. inspires new UniSA student podcast

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by Michèle Nardelli

UniSA students Chloe Byrne, Morgan Burley and Brad Irvine-Thomas worked together to develop a series of podcasts that explore some of the concepts and ideas that are a feature of the first MOD. exhibition MOD.IFY.

It was only in 2004 that a *Guardian* journalist suggested the word podcasting to describe a phenomenon that has since swept the world.

More than one billion people across the world now subscribe to podcasts – regular audio recordings that focus on everything from crime and mystery, current affairs and parenting, to leading a happier life – providing subscribers with intimate access to the information they want to hear, in the way they want to hear it.

At UniSA, journalism students are not only learning about the impact and potential of podcasting – they have developed a special series of episodes, *MOD.cast*, - to coincide with the launch of UniSA's new futuristic museum of discovery (MOD.).

Chloe Byrne, Brad Irvine-Thomas and Morgan Burley worked together to develop a series of podcasts that explore some of the concepts and ideas that are a feature of the first MOD. exhibition MOD.IFY, which opened to the public on 11 May.

"It has been an interesting challenge because we couldn't see the exhibition before we produced the program, we could only imagine it and draw on what some of the exhibitors were saying about their work," Chloe says.

"We had to do a fair bit of research around some themes that we knew MOD.IFY would explore – what it is to be human, how augmented reality and robotics will impact our lives and how it challenges what we know of ourselves as thinking beings – these are pretty deep issues.

"The challenge for us was to explore those ideas and develop something that was both entertaining for the young people MOD. wants to entice through the door, and at the same time really uncovered the research behind the ideas."

Chloe is completing the third year of the Bachelor of Journalism and Professional Writing at UniSA and while she hopes to pursue print journalism when she graduates, says she has really enjoyed the creative challenge of working on the podcasts.

For double degree Law and Journalism student Brad Irvine-Thomas, the chance to be involved with MOD. has been a great opportunity.

“Career-wise I still don’t know if I will pursue law or journalism, but this project was really intriguing because it made me question some of the things I had accepted my whole life,” Brad says.

“If that is any indication of the impact that MOD. exhibitions will make in Adelaide, then I think this space is going to be fantastic for stimulating young people to think outside the box.”

Course colleague, Morgan Burley, says producing the programs has really piqued her interest in all that goes on behind the scenes to make a podcast: the research, the effects, tracking down the right quotes from the right people and sourcing relevant audio material.

“I have really enjoyed the radio component of the degree, so working on this podcast series was pretty attractive and it really has been enjoyable.

“The ideas MOD. will explore are significant for all of us to consider and sometimes they’re a bit uncomfortable, so I am really looking forward to seeing all the hard work of the innovators involved with MOD. curated together at the exhibition.”

Course coordinator Dr Heather Anderson says the chance to give students a real creative production opportunity with a real brief is a fantastic learning experience.

“The *MOD.cast* team has thrived under the pressures of both a tight deadline and a high profile client and applied many of the skills they’ve developed over the past two and half years to produce a series that I, as their teacher, am very proud of,” Dr Anderson says.

The short podcast series *MOD.cast* – (four episodes) are live at mod.org.au/mod-cast.

Located within UniSA’s new Cancer Research Institute on North Terrace, MOD. is open Tues-Thurs 12-6pm, Fri 12-8pm and Sat-Sun 10-4pm.

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ShopBuddy smartphone app gives customers the 'wow' experience

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by Candy Gibson

BUSINESS AND LAW

Shopping centres may soon offer customers a fun, interactive experience thanks to innovative UniSA students.

Who knew that shopping centres could be as much fun as Pokémon Go?

The augmented reality game, which has been downloaded 500 million times, is the inspiration for a new smartphone shopping app which has pocketed its UniSA creators $25,000.

James Baumeister, a PhD computer and information science student, and two UniSA research fellows Dr James Walsh and Dr Andrew Cunningham have developed ShopBuddy, a concept app which encourages people to get out of their homes and into the closest shopping centre.

The concept has taken out first place in the Retail Game-Changer Challenge, a competition backed by Shaun Bonétt, a UniSA graduate and CEO of commercial property company Precision Group, which owns a large portfolio of shopping centres across Australia.

Participants were asked to come up with an innovative concept to help shopfront retailers compete with internet shopping, which has had a profound impact on bricks-and-mortar retailers.

The winning concept offers shoppers a fun, interactive experience in retail centres, using augmented reality (AR) technology to give users special discounts, navigational aids and entertainment in 3D images that are invisible to the naked eye.

Unlike viewing regular deals on static posters, finding these deals is fun and rewarding, and the navigational aids also help people find specific shops without relying on traditional store maps which can be difficult to find – and read.

James says the concept offers customers the 'wow' experience in a retail centre, encouraging them to spend

more time there and return on a regular basis.

“The competition presented us with an irresistible opportunity to take our theoretical knowledge and research skills and apply them to a practical, real-world problem,” James says.

“Using augmented reality, we were able to deliver entertaining graphics and navigation aids to the consumer while also helping the retailers market themselves.”

UniSA Masters by Research (Marketing) student Alicia Grasby and her team, which included Associate Professor John Dawes, Vivien Chanana and Dr Bill Page from the School of Marketing, were awarded second place and $10,000 for their Ehrenberg-Bass Shopper Metric.

Using WiFi signals from shoppers’ phones, the metric offers retailers detailed information about shoppers’ behaviour, analysing how many people visit the centre, where they shop and how long they stay there. This information helps retailers improve store layouts, window displays and the shopping experience for customers.

Eighteen teams in total pitched their concepts for a shopping centre technology solution and the winners have been invited to work with the Precision Group on the possibility of commercialising their concepts.

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Exploring history through art: Reconciliation Week 2018

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by Mary-Jane McArdle

COMMUNITY

Vernon AH KEE, Kaurna Language Ephemeral Public Art Project, installation view, Fenn Place, UniSA City West campus. Photography by Sam Noonan. Courtesy Samstag Museum of Art.

Reconciliation Week provided the chance for the University community to pause and reflect on Aboriginal culture and histories through many events, with a highlight the launch of a bold new public art project at City West.

Visitors will notice the installation of bold Kaurna words across the Fenn Place thoroughfare launched by the Samstag Museum of Art last month.

Photography by Sam Noonan. Courtesy Samstag Museum of Art.

The words were chosen to reflect the cultural relevance of the project site, identified after intensive consultation with Kaurna Elder Dr. Lewis O'Brien and Kaurna Warra Karrpanthi language group members.

The 'Kaurna Language Ephemeral Public Art Project' by Brisbane-based artist Vernon Ah Kee asserts the significance of Indigenous languages in defining culture and identity of place.

Vernon – an activist and social critic known for text-based works that address the gap between the arts and the body politic – says the work itself is about people; the words don't exist on their own abstractly in space but were chosen through a process that engaged with people and with the intention of establishing a presence.

Addressing the ever-growing 'concrete jungle' encroachment onto Aboriginal country, the project highlights the enduring presence of Kaurna

culture and connection to country through the words.

Samstag Museum of Art director Erica Green, Pro Vice Chancellor: Aboriginal Leadership and Strategy Professor Irene Watson, Dr. Lewis O'Brien and artist Vernon Ah Kee. Photo by Sia Duff.

At the launch, Pro Vice Chancellor: Aboriginal Leadership and Strategy Professor Irene Watson discussed the significance of the word Yara – generally translating to the English word reciprocity and meaning a form of exchange, or that you give me and I give in return.

"Yara… is a word that is core to how our nations lived in this continent for many thousands of years. A word which provides insight into coexistence and how it can be achieved, by way of the law of reciprocity and the shared space of two-way learning," Prof Watson says.

YARA is at the northern end of Fenn Place and on the southern end the Kaurna words TAPA MUIYU MARNININTHI, which translate in English to: Tapa – Pathway; Muiyu – Seat of emotions; Marni – Good and Marnininthi – becoming better, improving.

Reconciliation Week's 2018 theme *Don't Keep History a Mystery* explored the history hidden just beneath the surface, ready and waiting to be uncovered.

Other activities across UniSA included film screenings, native tree planting, storytelling, traditional cooking demonstrations and art workshops.

Staff at 101 Currie street created a painting led by Aboriginal artist Donald "Duckie" Taylor and designed to serve as a momento of the importance of Reconciliation to us now and into the future.

The painting that UniSA staff created, led by Aboriginal artist Donald "Duckie" Taylor.

Around the regional campuses, Mount Gambier events for Reconciliation Week included dreamtime story telling by local elder Ken Jones, and a Welcome to Country with Aunty Michelle. The Whyalla campus hosted a reconciliation book and Aboriginal arts display, cooking demonstration, Welcome to Country, barbecue lunch with Kangaroo tail and bush tucker tasting, Umeewarra Aboriginal Media live broadcast, arts and crafts.

At the end of the week, the University also supported the Crows Adelaide Football Club in the Sir Doug Nicholls Round of AFL. There was a live cultural artwork with Indigenous artist Narisha Cash painting a canvas that attendees could contribute to by having the outline of their hand spray painted or by writing one of the many Aboriginal Australian languages.

Vice Chancellor Professor David Lloyd explains what the Reconciliation Week 2018 theme means to UniSA in this video.

"The University of South Australia is working hard to strengthen its position as a university of choice for Aboriginal and Torres Strait Islander people," Prof Lloyd says.

"Since we last celebrated reconciliation week we've advanced our plans with some outstanding results."

Highlights of the past 12 months include the music written by Aboriginal Australian soprano, actor and composer Deborah Cheetham AO commissioned for graduation processions and bestowing Kaurna names on Pridham Hall and the UniSA Cancer Research Institute. The number of Aboriginal students attending UniSA has also risen, with the total studying full time up by around eight per cent.

"We've made some great progress, but it would be brilliant to do more," Prof Lloyd says.

Celebrating 50 years of Aboriginal Studies

As part of Reconciliation Week activities, UniSA's Mount Gambier campus celebrated the 50th anniversary of Aboriginal Studies at UniSA.

Another community event celebration is being held on 14 June at UniSA's Magill campus to acknowledge this milestone when UniSA and its precedent College of Advanced Education, Torrens College became the first tertiary institution in Australia to introduce courses in Aboriginal studies.

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Which Aussie cereal just got healthier thanks to UniSA?

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by Candy Gibson

HEALTH

Australia's favourite breakfast cereal is now healthier thanks to UniSA researchers.

Weet-Bix is the first cereal product in Australia to include cholesterol-lowering plant sterols following a joint project between Sanitarium and the University.

The cholesterol-lowering version of Weet-Bix.

UniSA nutritionists Professor Peter Clifton and Associate Professor Jennifer Keogh from the School of Pharmacy and Medical Sciences were commissioned by the cereal company to undertake a clinical trial involving 46 adults, testing the impact on cholesterol levels of introducing two grams of plant sterols to one serve of Weet-Bix.

The trial showed that the inclusion of plant sterols lowered LDL (or bad) cholesterol by up to nine per cent over a month, with men and daily cereal consumers reporting the greatest benefits.

The cholesterol-lowering Weet-Bix version, now sold on supermarket shelves, was indistinguishable from the original product.

The findings of the clinical trial have now been published in *Foods*, an international open access journal of food science.

Researchers say the average reduction in cholesterol – 5.6 per cent – could have significant cardiovascular benefits for Weet-Bix eaters over a long period of time.

Plant sterols, which are found in small quantities in grains, fruits, vegetables, nuts and seeds, are known to naturally lower LDL cholesterol by reducing its absorption in the digestive system.

Assoc Prof Keogh says that working with industry can help translate research into positive health outcomes for the community.

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Deputy Vice Chancellor on the joys – and challenges – of science

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by David Myton, *Campus Morning Mail*

Professor Tanya Monro, Deputy Vice Chancellor: Research and Innovation Chancellery and Council Services.

Tanya Monro is something of a regular at the Rob Roy Hotel, a popular watering hole in Adelaide's CBD. But she's not there for the grog. Rather, she can be found talking with her customary passion, answering questions about subjects such as string theory and dark energy at the tavern's popular Science in the Pub event.

Prof Monro, UniSA Deputy Vice-Chancellor: Research and Innovation and ARC Georgina Sweet Laureate Fellow, is an eager evangelist for all things science and enjoys the to-and-fro of discussion.

"I've learned that by having conversations with intelligent bystanders, it often makes me think along different paths than if you're just stuck in that narrow disciplinary mindset," says Prof Monro, a prolific and award-winning physicist in the area of photonics, and one of Australia's most outstanding scientists.

The passion to proselytise comes because she believes science is not really well understood in Australia. Although there are many excellent science communicators, often their messages get little cut-through to the broader public.

"We need scientists to go into a broader range of areas," she says. "I'd love to see more go into politics, industry and government, and proudly wave the flag that they know how to make decisions based on evidence and data and to have a constructive debate."

From modest beginnings in the Sydney suburb of Bankstown, and burning with a passion for maths and science, Monro won a place at the University of Sydney, graduating in 1998 with a doctorate in physics.

A Royal Society University Research Fellowship saw her next at the Optoelectronics Research Centre at the

University of Southampton in the UK, from where she moved to the University of Adelaide in 2005 to become the inaugural Director of the Institute for Photonics and Advanced Sensing and Director for the ARC Centre of Excellence for Nanoscale BioPhotonics.

She took up the UniSA Deputy Vice Chancellor role in 2014, but retains links with Adelaide as an adjunct professor in physics.

Senior leader and an active scientist

Despite the demands of her senior role, Prof Monro still manages to make time to be a working scientist. In 2016 she published 27 journal articles – a record for her – and managed six PhD completions.

“I don’t know that this year will be quite as good,” she says.

What helps is that the time she previously would have spent writing grant applications and seeking lab funding is now done by others “who stepped up into my leadership roles”.

“Research for me now is just sheer joy because I get to sit down with students and postdocs, look at their data, trouble shoot, problem solve, connect the dots, connect people, connect with industry, and engage in papers and the like.

“The time I used to spend putting together big grant applications and the like I now spend for the university in terms of growing overall research performance and culture.

“To be frank, you have to stay current and active because if you don’t understand the pressures facing researchers, if you don’t understand the issues with the systems – the funding and the like – it’s hard for you to help them.”

Becoming a deputy vice chancellor was “absolutely never a goal”. However, she discovered early on in her career a desire to “build capability, capacity and teams”.

“I was only seven or eight months into my postdoc period when I stopped being the person doing everything by themselves in the lab. I was getting in funds, and building teams. Then I learnt that I can split my time – if you weight it towards building relationships you get a lot more done. You get a lot further faster.”

As she grew in her role as a research institute director she began to understand how to develop the best research culture – “I could see what factors from the higher level of the university helped or hindered it”.

“I thought I could either stay at that level knowing what was in my ability to shape and what wasn’t because of the hierarchy, or I could step up and try to see if I could do a better job of establishing the settings in which the best people thrive.”

Surveying the research and innovation landscape

Prof Monro’s remit incorporates research and innovation, two categories she says are intimately connected.

“It’s about recognising that universities are a breeding ground for new ideas and for trying to help people to understand that those ideas can turn into impact.”

UniSA’s research and innovation efforts – its “pathway to impact” – involve working closely with outside partners so that knowledge creation and application are intimately combined.

She realised several years ago that universities had been fearful in their innovation remits of “losing out on a share of the next big thing – what happens if the university from which the next Google comes has not got a good equity stake and can’t benefit financially long term into the future?

“I came to see that, as a result of that kind of positioning, many universities were creating cultures where if staff or students developed research that became hugely successful, they often felt it was despite, not because of, the university environment.

“The innovation side of my portfolio is about creating environments where people who are entrepreneurial, or who are really driven by a desire to see things translated into real life, can learn and fail and try again.”

The bifurcation of research as fundamental and applied is “a false paradigm”.

“We need a spectrum of research activity that allows people to bring together really fundamental curiosity-driven research alongside the applied because the two fertilise each other – sometimes pure becomes applied, and vice versa.”

She cites her experience in photonics as an example: in 2005 she and her Adelaide team were tasked with

developing optical fibres that could detect corrosion in aircraft – “which doesn’t get more applied”.

“But that led to a pathway which created some new concepts that now are being used to ask fundamentally new questions in embryology – and that doesn’t get more fundamental.

“This sense that applied or end-user engaged research is something for those who don’t make the cut in competitive research has to go the way of the dinosaurs.”

The new research engagement and impact system

Prof Monro is generally positive about the Government’s new research Engagement and Impact framework, piloted in universities last year and now in operation.

She says the pilot has revealed that the assessment helps researchers to “create a new language”.

“It helps them get more sophisticated in asking prospective partners about their needs, and it gets them more out there and more integrated – so I see that as a huge benefit. But I don’t see it as necessarily being tied to a shift to doing research that’s one to two or three years out from application.”

However, she has some reservations on using case studies for assessing impact.

“I think they’re excellent but I believe they should be illustrative rather than determinative,” she says.

She gives as an example a scenario in which two universities may be conducting research in the same field and each submits one case study. If one of the universities is very much larger than the other, the probability is that the bigger university will be able to tell a better story because it has gathered more material.

However, in reality, “it might be that the smaller unit of assessment is actually more engaged and impact focused”.

“I don’t think that’s a fair way of measuring the culture and leadership at the university in terms of impact.”

A better career path for scientists

The sciences in Australia do not have good career paths, says Prof Monro. There is little job security, especially for younger researchers at a time when they need it most.

This is especially true for young women who may be thinking of starting a family.

“I would argue they are more biologically geared to need certainty at that late 20s early 30s age-group,” she says.

“In Australia it’s really not uncommon, even for highly productive young scientists, to do four or five two-year postdocs and still not be competitive for an academic role.”

Many universities are “waking up to the fact that the PhD is not a good training model for academics".

At UniSA, she says, the PhD has been transformed to help students to build connections to the industries in which they might choose to work.

If similar change does not take place nationally “what we’ll have is concentrations of amazing research in Australia where we have a lot of funding for postdoc researchers, but maybe one in 20 of them might have a shot in an academic role – that system is broken”.

Prof Monro is an advocate for working more closely with business and industry to boost academic employment mobility.

“In my field in the UK, US or Europe there are opportunities for people to go out of academia into really meaningful R&D roles in corporates, which can be more flexible and accommodating of periods of part-time work,” she says.

“They are not publication-based – they are productivity-based. And there are pathways back into academia, whereas in Australia once somebody leaves the publishing cycle it is generally harder to come back in.”

UniSA for one is moving in this direction through its Industry Professorships scheme, she says, providing opportunities for “people who have been out in industry doing innovation and R&D roles that might mean not having academic-type track records”.

Gender challenges in higher education

Prof Monro is committed to ensuring higher education has a more diverse academic workforce.

She says there are many impediments to women building successful careers in academia: a view borne out by figures that show women comprise more than half of science PhD graduates and early career researchers – but just 17 per cent of senior academics in universities and research institutes.

One impediment is the way in which some men view ambitious women.

“I remember times along my path where I’d be spotting an opportunity, trying to figure out how we could land it, only to have senior male colleagues tell me they never thought I could be so aggressive,” she recalls.

“Now, nobody has ever heard me swear and I don’t raise my voice except in excitement – what would have been lauded as ambition and drive if I was male is thrown at me as aggression. That hurts.”

For women, she says, it is not simply talent that sees them rise to senior positions – tenacity is just as important.

“I’m very tenacious,” she declares.

SAGE initiative ‘a brilliant start’

Prof Monro is optimistic that the Science in Australia Gender Equity (SAGE) initiative will help to bring about change.

“SAGE is a brilliant start because it’s data focused. It requires institutions to take a cold, hard look at their internal processes and systems to try to flush out where the pipeline issues are.”

Another impeding factor for women are gendered “stumbling blocks”.

“When I had my first child at age 30 I was fortunate to have half a dozen PhD students and a couple of postdocs, so I could just weigh in with a couple of emails a week or a quick conversation and things didn’t grind to a total halt. But for people who haven’t had that opportunity to build capacity around them everything grinds to a stop.”

Prof Monro has made a personal donation to UniSA’s new Research Momentum During Maternity Leave, which allows women going on maternity leave to apply for funding to keep up their research.

UniSA has also offered women-only fellowships in its Future Industries Institute.

“The quality of the applications was higher than what we normally get,” she says. “Women came out of the woodwork that normally wouldn’t rate themselves. But because it was for women-only they gave it a go.”

Challenges facing girls in studying science and technology

Prof Monro is concerned about “the relatively weak pipeline of girls” choosing to study science and engineering at undergraduate level.

As patron of the National Youth Science Forum she has many opportunities to talk to school students about science-related careers.

The inherent “gendered nature” of science education in schools tends to develop more confidence in boys to tackle “hard” subjects – but much less in girls.

“The boys are just that bit more likely to say ‘well I like it, I’m good at it, I’ll give it a go’ while the girls are more likely to want to know where the career pathways are,” she says.

“And hand on heart I struggle with that because we don’t have good career pathways.”

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New Books

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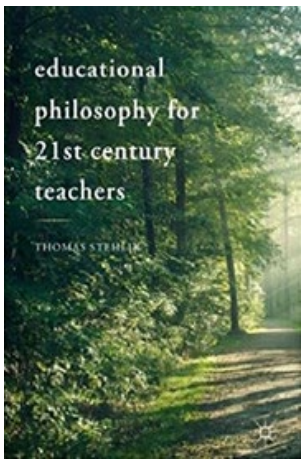
Resource Security and Governance – Globalisation and China's Natural Resources Companies

Educational Philosophy for 21st Century Teachers



Today's teachers have access to a wealth of curriculum resources and knowledge focusing on *what* to teach and *how* to teach it, but often do not pause to reflect on the fundamental question of *why* they teach.

In his new book, *Educational Philosophy for 21st Century Teachers*, Dr Thomas Stehlik, Adjunct Senior Lecturer in the School of Education at UniSA, aims to bridge this knowledge gap by applying philosophical theories throughout history to present day schooling and teaching practice.

A former secondary English teacher, Dr Stehlik says the book is not only for teachers, but for all who are bringing up children in the 21st Century.

"I am firmly influenced by the notion that, as a parent, you are your child's first teacher, and by the well-worn but resonant saying: 'It takes a village to raise a child'," Dr Stehlik says.

"Education is everywhere. It affects and influences us in many forms – from the overt experience of formal schooling, to the subtle effect of lived experiences of the world and the influence of things and people that we interact with on a daily basis.

"This book aims to take a step back and look at education from the big picture to inform and also challenge teachers and parents to re-think our society's approach to the way we might school our children for the future."

Educational Philosophy for 21st Century Teachers explores how early philosophers, such as Plato, Aristotle and Comenius, have influenced the assumptions we still have about education and schooling today. It discusses the purpose of education, the history of schooling, child development and the role of parents, the millennial child, teaching the teachers, and a holistic view of schooling and education.

The book also explores a range of case studies from around the world – including the Finnish school system, the international Green School in Bali, and the worldwide Waldorf School Movement – sharing insights from these diverse and progressive education programs.

"I believe that the school curriculum should have more meaning and relevance to our immediate lives," Dr Stehlik says.

"As teachers, parents, educators, and role models, our job is to somehow offer a glimpse of culture, beauty, humanity, and creativity in the midst of the regulatory environment imposed by curriculum writers, assessors, bureaucrats and those involved in education decision-making.

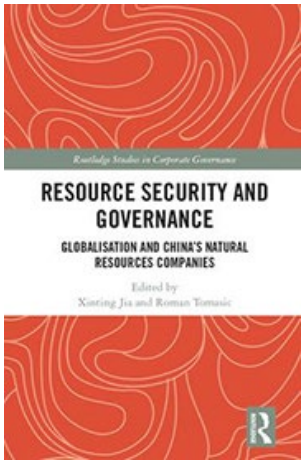
"Through this book, I hope to inspire readers to put our children's happiness and wellbeing at the forefront of education so that we continue to deliver meaningful teaching and learning experiences and a love of lifelong learning."

Educational Philosophy for 21st Century Teachers is published by Palgrave MacMillan, and is available online.

Resource Security and Governance – Globalisation and China's Natural Resources Companies

As the world's largest trader, China is a part of almost every supply and value chain –

it's important that businesses around the world better understand the intricacies of this economic power.



In a new book, *Resource Security and Governance – Globalisation and China's Natural Resources Companies*, co-editors Professor Roman Tomasic and Dr Xinting Jia, deliver just this.

Exploring the state control of major resource companies in China, *Resource Security and Governance: The Globalisation of China's Natural Resources Companies* examines their unique characteristics, structure, corporate governance and business operations.

UniSA editor, Prof Tomasic, says the book seeks to build a better picture of the governance of China's global natural resources companies, to support businesses, regulators and significant others as they engage with them.

"Understanding how China's 'state-owned' companies operate is critical for international business," Prof Tomasic says.

"China's state-owned enterprises have been the vehicles for the Chinese government to obtain resources from the international market.

"It's also been the way they've been able to participate in international market competition and to expand Chinese national influence.

"Yet these activities have posed challenges to companies and policy makers and raise the concern of resource security globally, especially as investing abroad can enable China to gain controlling interest in foreign companies.

"From their expansion abroad, to the efforts they've made to facilitate resource security, businesses will certainly benefit from an in-depth assessment of China's state-owned enterprises, and a more sophisticated understanding of how to engage with them."

As China's resources companies have expanded overseas, their unique ownership structure has come under scrutiny, posing challenges for regulators, trading partners, investors and other interested parties seeking to understand how the companies are governed and the implications of government ownership for resource security globally.

The book reviews the governance structures of China's state-owned companies and analyses and compares the inter-relationship between these companies and their trading partners, governments, regulators in targeted countries and investors globally.

The book also examines how the unique structure of these companies may affect resource security globally and touches on related matters including climate change, and air and water security in China.

With four of the book's contributing authors being current UniSA staff – Professor Jennifer McKay, Prof Ying Zhu, Professor Roman Tomasic and Dr Ping Xiong, and a UniSA PhD graduate, Dr Pinghui Xiao – *Resource Security and Governance: The Globalisation of China's Natural Resources Companies* is a collaborative UniSA success story.

Published by Routledge, the book is available online.

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Highlights from the Media Centre

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Research identifying a concerning gap in the healthcare workforce; and a study showing prostate cancer survivors treated with androgen deprivation therapy being at higher risk of chronic disease – these are some of the latest stories from UniSA's Media Centre:

New study reveals gap in mental health services for at-risk kids

A UniSA research team has estimated a concerning gap in the workforce needed to deliver tertiary-level community health care to infants, children, adolescents and their families across South Australia.

The world-first, needs-based study, funded by the NHMRC and SA Health and led by UniSA expert in the social determinants of health, Professor Leonie Segal, identified seven per cent of children (to age 18) in South Australia are suffering very high to extreme levels of distress.

In a paper published in The Lancet Public Health journal, Professor Segal says the distress is typically because of adverse family environments and community stressors such as severe financial distress, parental separation, parental mental illness, bullying, family and community violence.

Prostate cancer survivors more susceptible to chronic diseases

Prostate cancer survivors taking androgen deprivation therapy (ADT), a treatment commonly used to block the release of male hormones, are at a higher risk of developing chronic diseases, according to new research.

In a study analysing the pharmaceutical records of about 3700 prostate cancer survivors from 2003 to 2014, UniSA researchers examined the development of chronic diseases over time.

The data shows that prostate cancer survivors treated with ADT were more likely to develop cardiovascular disease, depression, diabetes, gastric acid disorders, hyperlipidaemia (high blood cholesterol), osteoporosis and inflammatory/painful conditions.

The findings point to a need for better coordinated care for cancer survivors.

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IN PICTURES

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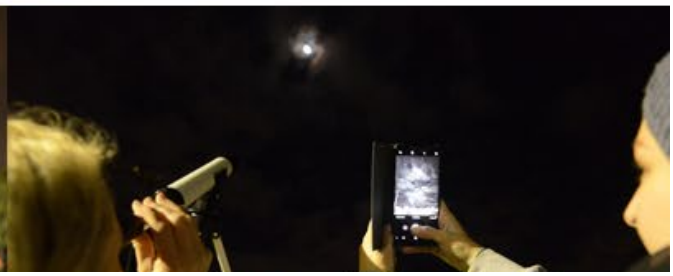
Stargazing Live at Mawson Lakes

Almost 300 people took part in a successful world-record breaking event at Mawson Lakes for the most people stargazing across multiple venues at the same time.

The free community event was held at Mawson Lakes Oval in partnership with UniSA's Adelaide Planetarium.

The event was coordinated as part of the ABC's Stargazing Live with Brian Cox program, which involved more than 250 locations and 40,000 people across Australia.

Read more about the successful achievement of a Guinness World Records title in ABC online.



French Day at UniSA

Together with Alliance Francaise and the Embassy of France in Australia, UniSA brought a taste of French culture to its campuses in May.

Students at Mawson Lakes, Magill and City West were able to learn about French student exchange opportunities and explore connections, relationships and collaborations between France and UniSA.

The events involved representatives from French universities and companies, as well as French culinary experiences, live French music and French films.


French Day
@ UniSA
Tuesday 15 May 2018
Mawson Lakes campus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ALLIANCE FRANÇAISE


NAVAL
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UniSA Sport and Adelaide Crows co-coaching session

A special training session was run by UniSA Sport and featured appearances from Adelaide Crows players Richard Douglas and Bryce Gibbs at Pridham Hall in May.

More than 30 South Australian Year 10-12 high school students got to meet and train with the two players after winning a UniSA competition.

The co-coaching session was aimed at students who have an interest in studying Human Movement or Exercise and Sport Science.

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