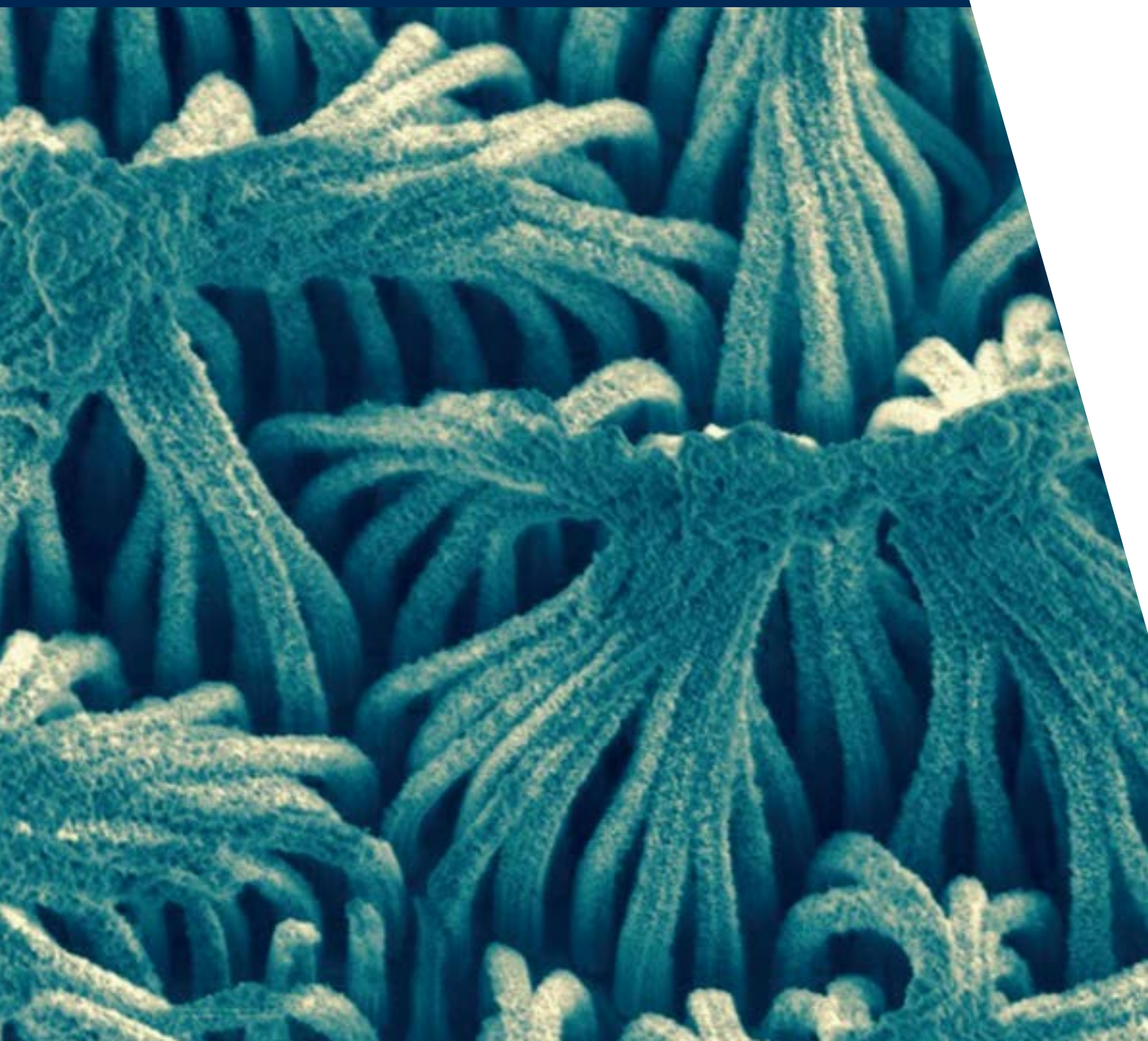




University of
South Australia

Enterprising

Research



Contents

- 01 | Australia's University of Enterprise
- 02 | Research Excellence
- 04 | Our Research Vision
- 06 | Business and Law
- 08 | Education, Arts and Social Sciences
- 10 | Health Sciences
- 12 | Information Technology, Engineering and the Environment
- 14 | Research Partnerships

As Australia's University of Enterprise, the spirit of enterprise runs through everything we do. And that extends to our research.

At UniSA, our research is inspired by challenges and opportunities, partnered with end-users and communities, and underpinned by excellence. Our initiatives are focused on real world impact, entrepreneurship and commercialisation, through an interdisciplinary approach to research and research outcomes.

We take particular pride in our effective partnerships with end-users. We work collaboratively right from the conception of a research idea, allowing our research directions to be shaped by the opportunities and challenges our partners face.

Our key to success is how well we listen and understand fundamental drivers and issues. Through listening we create optimal research teams that deliver ground-breaking yet practical solutions.

UniSA's strong commitment to cutting-edge research and engagement with industry has been well recognised, with 97 per cent of our research rated at or above world-class standard (Excellence for Research in Australia 2015). This is an impressive result for a young university and we are proud of our achievements.

As a university, we are focused on extending our global reach and influence. We are building enduring and mutually beneficial relationships with our international partners, and have a globally diverse research community.

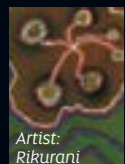
Our researchers are actively encouraged to work with international academic partners and our transformed PhD also draws participation from leading international researchers into postgraduate research training.



Professor David Lloyd,
Vice Chancellor and President



Professor Tanya Monro,
Deputy Vice Chancellor,
Research and Innovation



Acknowledgement of Country

UniSA respects the Kurna, Boandik and Bamgarla peoples' spiritual relationship with their country. We also acknowledge the diversity of Aboriginal peoples, past and present.

Find out more about the University's commitment to reconciliation at unisa.edu.au/RAP

ON THE COVER: NANO-SPAGHETTI.
DR MARIA ALBA-MARTIN, RESEARCH ASSOCIATE,
FUTURE INDUSTRIES INSTITUTE

Australia's University of Enterprise

The University of South Australia is a globally connected and engaged university helping solve the problems of industry and the professions. Our teaching is industry-informed, our research inventive and adventurous, and focused on creating impact.

Through our research, we create knowledge that is central to global economic and social prosperity. We are a young university, continuing to set the pace for world-class research and solutions for a changing world.

**RATED 6TH OVERALL
IN AUSTRALIA FOR
INNOVATION**

REUTERS TOP 75: ASIA'S MOST
INNOVATIVE UNIVERSITIES 2016

**RATED 8TH OVERALL
IN AUSTRALIA FOR
RESEARCH EXCELLENCE***

*PROPORTION OF TOTAL ERA RATINGS AT
THE 2-DIGIT AND 4-DIGIT LEVEL IN 2015.
THE AUSTRALIAN, 11 DECEMBER 2015.

**97% OF OUR ASSESSED
RESEARCH AT OR ABOVE
WORLD-CLASS**

EXCELLENCE IN RESEARCH AUSTRALIA (ERA) 2015

**AUSTRALIA'S YOUNGEST
UNIVERSITY TO RECEIVE
FIVE-STARS IN RESEARCH**

QS STARS RANKING 2015

**25TH PLACE AMONG
THE WORLD'S TOP 50
UNDER 50 2015/16**

2015/16 QS TOP 50 UNIVERSITIES AGED UNDER 50

Research Excellence

Led by the Australian Research Council, *Excellence in Research for Australia* (ERA) is the national research evaluation framework. ERA identifies research excellence by providing a comprehensive quality assessment of all research produced by Australian higher education institutions against both national and international benchmarks.

NO. 1 in South Australia for **Engineering** research

THE **ONLY** UNIVERSITY IN SA TO HAVE **ALL** OF ITS ASSESSED RESEARCH **ABOVE WORLD-CLASS**

well above world-class

research in

- ENGINEERING
- MATHEMATICAL SCIENCE
- APPLIED MATHEMATICS
- BIOCHEMISTRY AND CELL BIOLOGY
- CIVIL ENGINEERING
- CLINICAL SCIENCES
- ELECTRICAL AND ELECTRONIC ENGINEERING
- ENVIRONMENTAL SCIENCE AND MANAGEMENT
- HUMAN MOVEMENT AND SPORTS SCIENCE
- MATERIALS ENGINEERING
- MECHANICAL ENGINEERING
- MEDICAL PHYSIOLOGY
- NURSING
- NUTRITION AND DIETETICS
- PHARMACOLOGY AND PHARMACEUTICAL SCIENCES
- PHYSICAL CHEMISTRY
- PSYCHOLOGY
- RESOURCES ENGINEERING AND EXTRACTIVE METALLURGY

above world-class

research in

- BUSINESS AND MANAGEMENT
- MARKETING
- LAW
- CULTURAL STUDIES
- CHEMICAL SCIENCES
- ENVIRONMENTAL SCIENCES
- BIOLOGICAL SCIENCES
- MEDICAL AND HEALTH SCIENCES
- PSYCHOLOGY AND COGNITIVE SCIENCES
- LAW AND LEGAL STUDIES
- LANGUAGE, COMMUNICATION AND CULTURE

SAIGON: THE LIGHTS OF TET.
 DR JOSH MCCARTHY, SENIOR LECTURER, SCHOOL OF COMMUNICATION, INTERNATIONAL STUDIES AND LANGUAGES

EXCELLENCE IN RESEARCH AUSTRALIA (ERA) 2015

Our Research Vision

**NO.1 IN SOUTH AUSTRALIA
FOR INTERDISCIPLINARY
PUBLICATIONS**

U-MULTIRANK 2016

**AUSTRALIA'S YOUNGEST UNIVERSITY IN
NATURE'S ASIA PACIFIC RISING STAR INDEX
FOR SCIENTIFIC RESEARCH**

2016 NATURE INDEX RISING STARS

Our research culture is vibrant, outward facing and responsive. We pride ourselves on our capacity to create interdisciplinary teams that can tackle significant real-world challenges, and our researchers strive to make a difference outside the world of academe.

Inspired Partnered Excellence is the University's Strategic Plan for Research and Innovation for 2016 to 2020 aimed at expanding our commitment to deliver industry and end-user informed research, supporting an industry-relevant curriculum, building on our research strengths and delivering the transformed PhD.

Research inspired by challenges and opportunities, partnered with end-users and communities, and underpinned by excellence.



HEALTHY PODOCYTES SHARING WITH CANCER CELLS
DR MELANIE MACGREGOR-RAMIASA, RESEARCH
ASSOCIATE, FUTURE INDUSTRIES INSTITUTE

Research themes

The rapid pace of global change is driving many new social, economic and environmental challenges. Research at the University of South Australia has been positioned around six key themes to ensure we can deliver innovative and sustainable solutions that respond to the most pressing needs of our world today.

AN AGE FRIENDLY WORLD

Demographics are changing dramatically around the world. We are living longer and the demand on our energy resources, transportation and health services is increasing, and there is a need to improve efficiency.

CANCER

The doubling of our lifespan over the last 100 years has seen an increase in chronic diseases, including cancer. While a focus on therapeutic cancer treatment is fundamental, we have the opportunity to offer leadership in early detection and lifestyle intervention.

TRANSFORMING INDUSTRIES

Australia's competitiveness in the global marketplace calls for innovative industries that are focused, agile, value-adding, transformative and fully integrated into international supply chains. Research will be critical in developing a new advanced manufacturing sector for Australia.

HEALTHY FUTURES

Chronic disease is an ongoing burden in Australia, but research over the past two decades has identified that most chronic diseases are preventable. Prevention and management is heavily dependent on intervention as early as possible, which includes the integration of population health activities with lifestyle, communication and better decision making.

SCARCE RESOURCES

Australia will need to develop sustainable, high intensity and high production capacity in new and existing food products to meet growing demands. However, we are faced with constrained soil and water resources, and significant changes in the environment. Questions of scarcity present opportunities for our researchers to directly source, understand and appropriately support what is required to respond to this challenge.

TRANSFORMING SOCIETIES

In an inter-connected world it is important to examine the complex inter-relationships between social, environmental, cultural and political changes, in order to influence and revolutionise citizen-led social innovation. This includes research into information technologies, telecommunications, cyber security, manufacturing, supply chain management, finance systems in a global economy, environmental change, politics, languages and cultures, social capital, globalisation and sustainability.

Research Institutes

- **EHRENBERG-BASS INSTITUTE FOR MARKETING SCIENCE**
- **FUTURE INDUSTRIES INSTITUTE (FII)**
- **HAWKE RESEARCH INSTITUTE**
- **SANSOM INSTITUTE FOR HEALTH RESEARCH**

Higher degrees by research

The University offers a wide range of research degrees including a PhD, professional doctorate or masters by research. Our research environment is supported by highly experienced and engaged supervisors, with strong connections to industry, government and communities.

Research degrees at UniSA are focused on learning and applying advanced research methodologies that produce new knowledge and provide solutions to global challenges.

Business and Law

By working closely with industry, the UniSA Business School is able to facilitate high quality research that tackles real-world problems. We are respected as global thought leaders and academic experts in the areas of marketing, applied economics, human resource management, tourism and international business.

We know that excellent results come from ethical and rigorous research. By supporting researchers to cross boundaries and take responsible risks, we facilitate breakthrough research that impacts industry, organisations and communities.

Global research into marketing

The Ehrenberg-Bass Institute for Marketing Science is the world's largest centre for research into marketing. The Institute's team of over 50 marketing scientists make fundamental discoveries about how brands grow and how buyers behave, and help companies all over the world to develop and benefit from a culture of evidence-based marketing.

The Institute's research tackles some of the biggest questions in marketing, and key research areas include:

- Advertising
- Branding and brand equity
- Buyer behaviour
- Loyalty
- Marketing metrics and accountability
- New and traditional media
- Pricing
- Service quality
- Shopper research
- Sustainable marketing
- Wine marketing

The Institute offers businesses access to a multi-million dollar program of R&D into marketing through the Corporate Sponsorship Program, providing access to decades of discoveries. Over 60 companies are part of this program, including many of the world's biggest brands like Mars, Procter & Gamble, Coca-Cola and Unilever.

Taking wine to the world

Finding out what Chinese consumers like in a glass of red wine has become a key research project at UniSA – with China's import market estimated at over \$1.7 billion and growing rapidly. The project aims to help Australian wine producers break into the Chinese market and is bringing together great minds from The Australian Wine Research Institute, the Institute for Business and Market Research, and the Ehrenberg-Bass Institute for Marketing Science. Research techniques have varied from sensory studies through to different consumer research projects, to help determine their purchasing preferences.



PROFESSOR BYRON SHARP, DIRECTOR, EHRENBERG-BASS INSTITUTE FOR MARKETING SCIENCE



ACCOUNTING FOR ENVIRONMENTAL IMPACT. PROFESSOR CAROL TILT, PROFESSOR OF ACCOUNTING, SCHOOL OF COMMERCE

Centre for Workplace Excellence

'Achieving Excellence through People and Practices.'

In 2015, we launched the Centre for Workplace Excellence (CWeX), focusing on progressive research in human resource management and organisational behaviour. Our research takes a scientific approach to understanding how workplaces can meet the challenges of today and tomorrow, as societies, people and work continue to change.

Institute for Choice

What are the driving forces behind the thousands of choices we make every day? The Institute for Choice is a world-class research facility that focuses on understanding and modelling human decision making and choice behaviour. The team of global experts help businesses, government and organisations understand "why" – to help make better decisions, achieve better and more effective policies, and deliver more targeted programs to the greatest number and in the most cost-effective way.

Education, Arts and Social Sciences

UniSA's research in Education, Arts and Social Sciences has extensive national and international research links, and is focused on influencing culture and social change, and exploring meaning in our interconnected world.

Areas of research include a wide range of topics from creative industries, design, digital arts and humanities, and media and communication, to urban sciences and informatics, social care and social innovation, Indigenous affairs, brain science, learning analytics and language development.

Sustainable societies

The **Hawke Research Institute (HRI)** is Australia's largest social science and humanities institute, focusing on helping to create sustainable and just societies.

The Institute was established in 1997 to undertake public policy research in association with the newly established Bob Hawke Prime Ministerial Centre. In 2014, the Institute was expanded, with a strong commitment to working towards social inclusion, equity and social sustainability.

Key areas of research include social theory, cultural studies, globalisation, work and life, education and literacy, equity and gender, and Islamic teaching and education.

Research into child protection

The **Australian Centre for Child Protection** conducts national, award-winning research that supports the development of policy and practice solutions to make a real difference to the lives of vulnerable children and their families.

Supported over the past decade by a National Advisory Council of seven eminent Australians, the Centre is committed to strengthening the evidence that informs the design and delivery of services to children.

Our future with robotics

Supported by the Australian Research Council, researchers from the Hawke Research Institute are developing new and powerful understandings of the social consequences of robotics and artificial intelligence, especially the impact on mobility, employment and lifestyles.



TWISTING NIGHTLINES.
MR GREG DONOVAN, PROGRAM DIRECTOR,
SCHOOL OF ART, ARCHITECTURE AND DESIGN



BIOLOGICAL CO-CREATION NETWORK.
MR AARON DAVIS, SCHOOL OF ART,
ARCHITECTURE AND DESIGN

Migration matters

Developing a dialogue and cooperation between the European community and Australia in matters of migration and asylum and refugee protection is the primary focus of the **Hawke EU Centre for Mobility, Migrations and Cultural Transformations**. Researchers are particularly interested in the political importance of learning through bilateral dialogues on our shared commitments to human rights, fundamental freedoms, democracy, and the rule of law.

Islamic Thought & Education

UniSA is home to one of the largest research concentrations in Islamic studies. The **Centre for Islamic Thought and Education (CITE)** encourages a deeper understanding of evidence-based knowledge of Islam and issues facing Muslims both in Australia and globally, through education and engagement with the wider Australian community.

Health Sciences

MORE THAN 500 CLINICAL
PLACEMENT PARTNERS AND OVER
500 RESEARCH PARTNERS

Research in the Health Sciences contributes to practical solutions which address local, national and international health-related challenges.

We have an outstanding reputation amongst industry, government and the community for the education of quality health professionals, and the delivery of research excellence in the prevention, diagnosis and treatment of health issues, improving the overall health and wellbeing of society.

Research is focused on a wide range of health issues from healthy lifestyles and population health to neuroscience and mental health, pharmaceuticals, cancer and more.

Premier health research

Led by renowned oncologist, cancer researcher and bioethicist Professor Ian Olver AM, the **Sansom Institute for Health Research** is the University's premier health and biomedical research concentration.

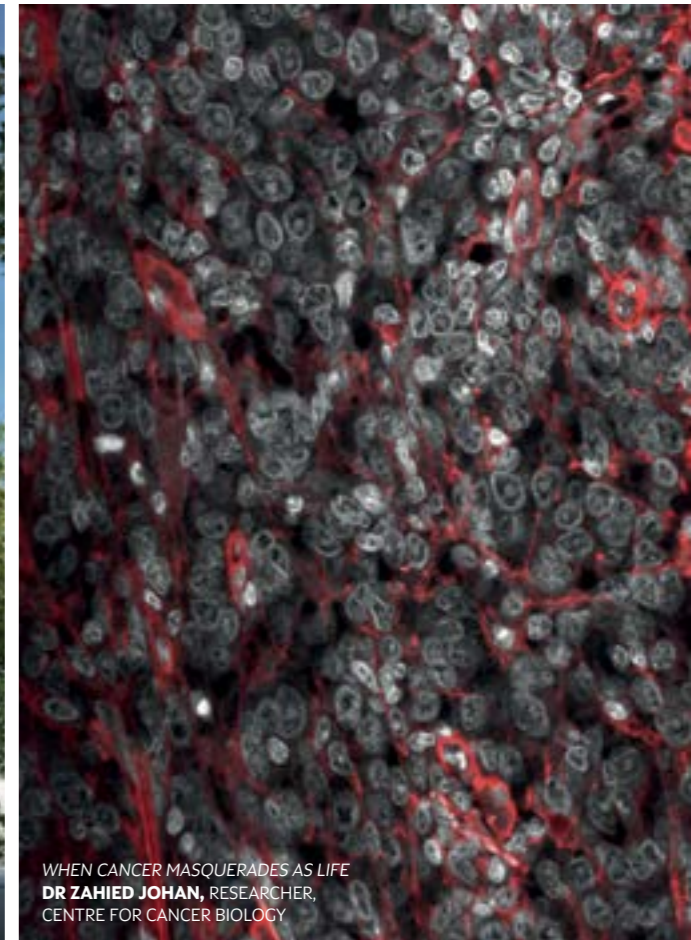
The Institute brings together a diverse group of leading scientists with the key aims of intervening early to prevent illness, improving health systems and services, creating more effective therapies, and advancing health equality. From the molecular to the global, researchers are involved in a diverse range of research activities across a broad spectrum of health and medical sciences.

Joining forces

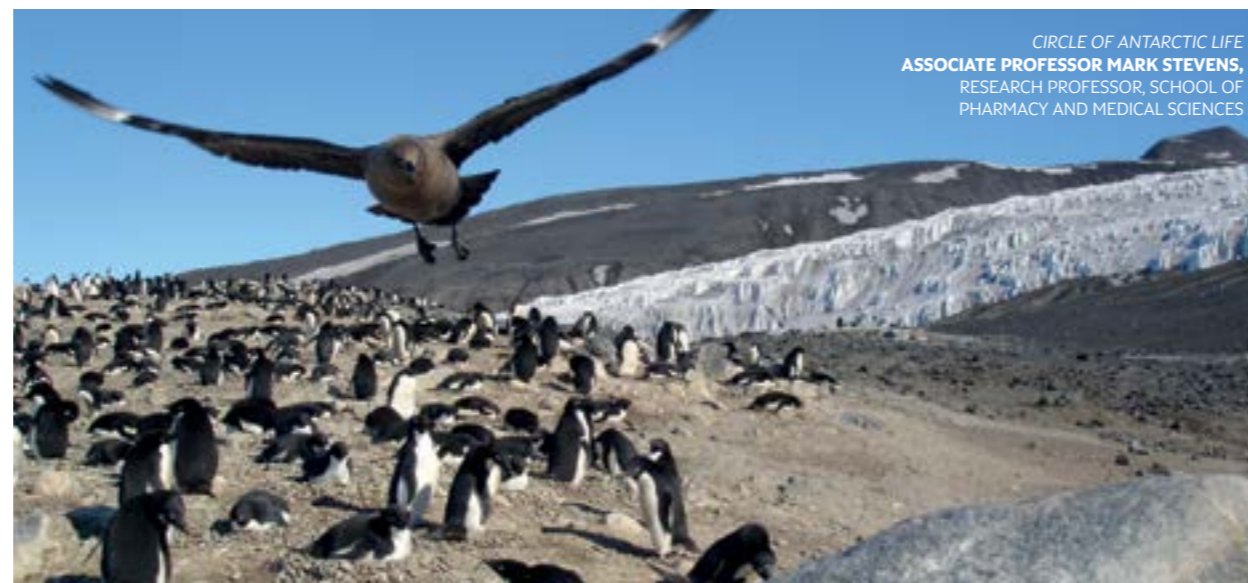
The Sansom Institute for Health Research formalised a new partnership with the Australian Orthopaedic Association (AOA) and the South Australian Health & Medical Research Institute (SAHMRI). The partnership provides UniSA researchers with collaborative opportunities for translation of AOA's National Joint Replacement registry outputs into public health outcomes.



ARTIST IMPRESSION OF THE HEALTH
INNOVATION BUILDING



WHEN CANCER MASQUERADES AS LIFE
DR ZAHIED JOHAN, RESEARCHER,
CENTRE FOR CANCER BIOLOGY



CIRCLE OF ANTARCTIC LIFE
ASSOCIATE PROFESSOR MARK STEVENS,
RESEARCH PROFESSOR, SCHOOL OF
PHARMACY AND MEDICAL SCIENCES

Centre for Cancer Biology

The Centre for Cancer Biology (CCB) carries out a world-class program of innovative research, making breakthrough discoveries in the fundamental causes of cancer, and translating these discoveries into new ways to prevent and treat this group of diseases. The CCB is an alliance between SA Pathology and the University of South Australia, and boasts the largest concentration of cancer research in SA.

Building healthy futures

Opening in 2018, the \$230 million Health Innovation Building is an exciting new space that will form part of South Australian health and biomedical precinct in the Adelaide CBD, creating a number of new research, teaching and community engagement opportunities, and will also be home to the Centre for Cancer Biology.

Information Technology, Engineering and the Environment

Information Technology, Engineering and the Environment has a proud history of furthering education and research in the fields of science and technology to promote innovation and productivity on a local, national and international scale.

We have a diverse and multicultural environment with more than 300 academic researchers in the Division and more than 320 PhD students. Key research disciplines include natural resources and carbon living, environmental remediation, and new technologies in information technology, engineering, mathematics, and the natural and built environments.

Future Industries Institute

The Future Industries Institute (FII) is focused on informed, industry-connected research in engineering and the physical sciences. FII represents UniSA's largest investment in research and has been established to drive more economic growth through greater collaboration between business and academia.

Through national and global research partnerships, including the University College London (UCL), the Institute undertakes global research inspired by real-world issues.

Research is focused on four key strands: Energy and Advanced Manufacturing; Minerals and Resource Engineering; Environmental Science and Engineering; and Bioengineering and Nanomedicine.

Engineering ingenuity

UniSA has formed several significant partnerships, which have led to breakthrough research and innovation:

- Teaming up with Heliostat SA, researchers from UniSA produced the world's first lightweight plastic automotive mirrors.
- Over the past four years UniSA researchers and Defence Science and Technology Group (within Australia's Department of Defence) have engaged on projects worth more than \$4 million in the areas of aerospace, joint and operations analysis, maritime, national security and intelligence.
- Partnering with IT giant Hewlett Packard Enterprise we support South Australia's IT innovators, including students and industry, through a new space to exchange and explore ideas. The partnership also incorporates an IT Honours program that integrates world-class education with industry experience through internship opportunities.



HOUSE IN THE URBAN HEAT ISLAND.
MS GERTRUD HATVANI-KOVACS, PHD CANDIDATE,
SCHOOL OF INFORMATION TECHNOLOGY AND
MATHEMATICAL SCIENCES



CREEPING LIQUID LAYERS.
MS STEPHANIE MACWILLIAMS,
HONOURS STUDENT, FUTURE
INDUSTRIES INSTITUTE

National collaborations

Through the Australian Government's Cooperative Research Centres (CRC) scheme, our researchers have partnered in seven CRCs, working with industry on multi-million dollar projects to address some of the major challenges facing developed and developing economies. UniSA is contributing to the CRCs focus on Contamination Assessment & Remediation of the Environment, Cell Therapy Manufacturing, and Big Data – Data to Decisions.

A flying start

UniSA student, Imogen Domin, set off to America to undertake a cutting-edge internship at the world's largest aeronautical school – the Embry-Riddle Aeronautical University. Imogen was the first Australian student to participate in the NextGen Test Bed International Harmonization internship in Florida. She is one of only eight students selected internationally to work at the NextGen Test Bed, a research and demonstration facility governed by the Federal Aviation Administration in the United States.

Research Partnerships

COLLABORATING WITH
OVER 2,500 COMPANIES
WORLDWIDE

UniSA RESEARCHERS HAVE
TRIPLED THE NUMBER OF LICENCE
DEALS IN THE PAST FOUR YEARS

We take particular pride in our effective partnerships with end-users of our research.

Partnering from the earliest stages of a research idea allows our research directions to be shaped by the opportunities and challenges our partners face.

Our foundation of research excellence underpins our capacity to engage effectively with research end-users and deliver value.

Our ability to drive research impact is enabled by our long-standing and distinctive approach to intellectual property. We offer a pragmatic and flexible approach to working with our partners, to ensure the outcomes of research have every opportunity to deliver economic, social and environmental benefits.

Cohda Wireless

Known internationally for its “talking cars” technology, Cohda Wireless was founded by a group of highly regarded scientists working at UniSA’s Institute for Telecommunications Research. The spin out company is now a global leader in 802.11 connected vehicles.

Cohda’s world-class team of scientists and engineers has progressed through the completion of prototype Cooperative-ITS systems to designing and selling real world products with a compelling advantage. Cohda Wireless has secured revenues in the emerging Cooperative-ITS market through the sales of five generations of its on-board and roadside equipment.

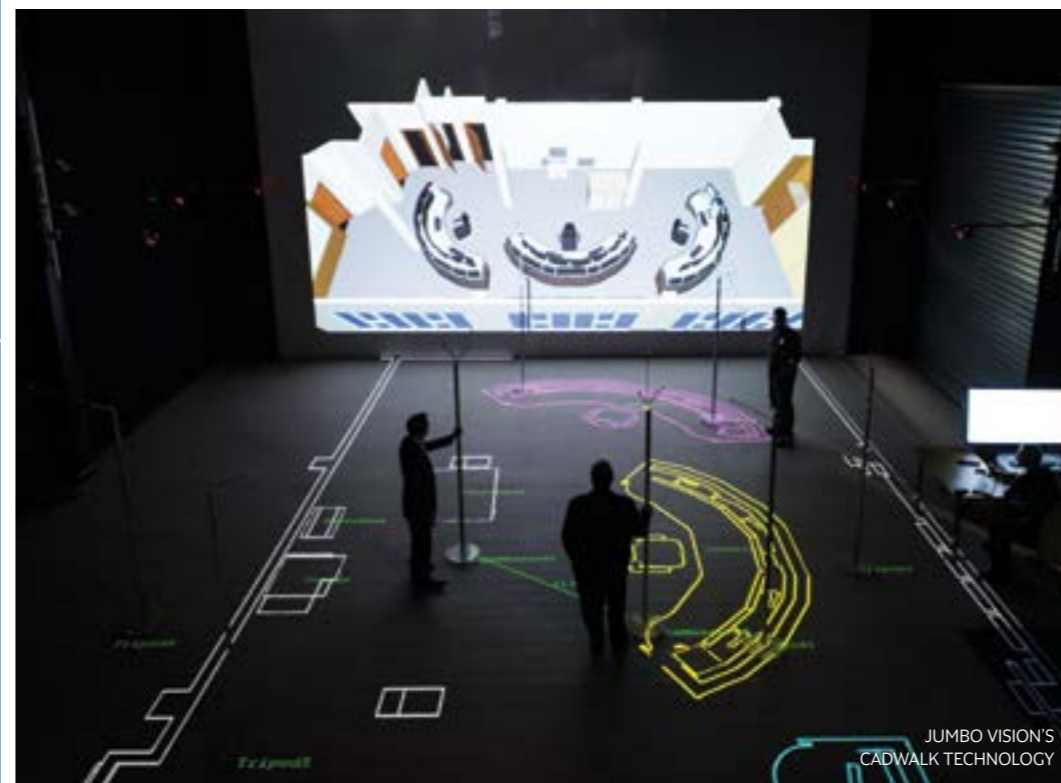


DR PAUL GRAY,
CEO OF COHDA WIRELESS

Jumbo Vision

Working in collaboration with Prof Bruce Thomas from UniSA’s Wearable Computer Lab, and in partnership with the company Jumbo Vision, a new technology in the field of Spatial Augmented Reality (SAR) has been developed and licensed to the company.

Called CADwalk, the technology allows for the projection and real-time adjustment of objects onto a variety of 2D and 3D surfaces that enable a SAR application for visualising layouts of control panels, floor plans and buildings in real-time. Jumbo Vision has built and operates facilities in Technology Park, Mawson Lakes, SA, and in Forrestfield, WA, and is now looking to deploy CADwalk worldwide.



JUMBO VISION'S
CADWALK TECHNOLOGY

UniSA Ventures

UniSA Ventures is focused on creating business opportunities through innovation. By leveraging the needs of industry against the core capabilities and intellectual assets of our world-class research, UniSA Ventures creates opportunities for industry to engage with the University and secure commercial interest in innovative technologies that have commercial applications.

UniSA Intellectual Property Principles

Our approach to managing intellectual property is based on the following principles:

1. We actively encourage students and staff to undertake research that is relevant to challenges faced by society and in partnership with industry, government and community groups.
2. As guided by our industry partners, we encourage them to own and take the lead in commercialisation of intellectual property generated from industry-funded research when they are best placed to do so.
3. Where access to university owned or jointly owned IP is necessary or beneficial for commercialisation we support access to the IP based on fair and equitable terms, in a timely manner.
4. Our interactions with industry will be governed by a transparent, flexible and user-friendly system that supports and encourages engagement using a range of IP models.
5. Each university will make public our Intellectual Property Policies and Standard Commercial Agreement templates, to provide a simple and transparent framework.
6. We actively encourage and promote an entrepreneurial culture for our staff and students. This includes a system of support to facilitate the creation of new ventures where our staff and students are appropriately involved.
7. All partnerships and resultant commercial agreements will be developed and negotiated in a prompt manner and in keeping with these core principles.

The commercialisation of IP and spin out companies for UniSA is managed by UniSA Ventures, a wholly owned entity of the University of South Australia.



LITTLE WINDOWS.
MS BRIDGETTE MINUZZO, MASTERS
STUDENT, SCHOOL OF ART,
ARCHITECTURE AND DESIGN



**University of
South Australia**

University of South Australia
GPO Box 2471, Adelaide
South Australia 5001
Australia

Telephone: +61 8 8302 5300
Facsimile: +61 8 8302 5301
unisa.edu.au/research

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Australia's University of Enterprise