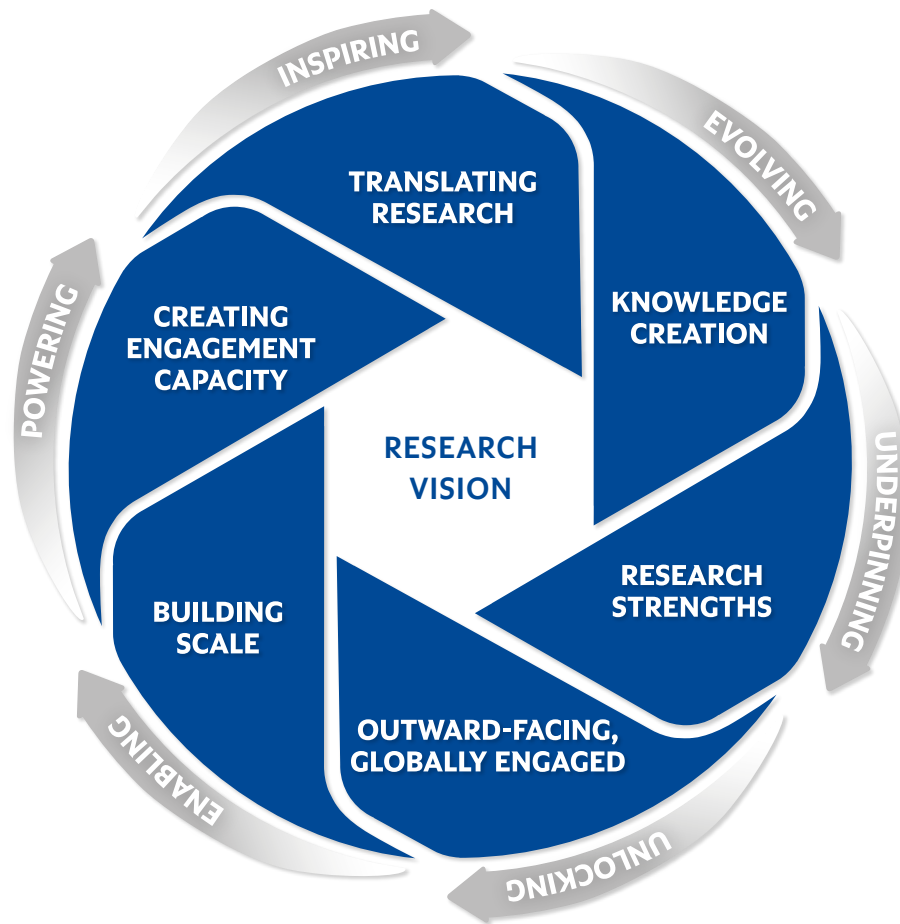




University of
South Australia

RESEARCH AND INNOVATION STRATEGIC PLAN 2016 – 2020

I N S P I R E D P A R T N E R E D E X C E L L E N C E



THE UNISA RESEARCH VISION

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

This research vision frames our shared ambitions for UniSA research and articulates the research and innovation elements of what it means to be *The University of Enterprise*.

Looking ahead to 2020

The spirit of enterprise defines research at UniSA. Our **research culture** is vibrant, outward-facing and responsive. As custodians of this culture, our **research leaders** are highly productive as they shape national and international research directions. By harnessing the talents of a diverse range of researchers, from research students to distinguished professors, we ensure the foundations of **research excellence** and critical mass needed to sustain powerful academic collaborations and end-user partnerships. These **research partnerships** in turn inspire new research directions and drive the delivery of relevant research-informed teaching. We pride ourselves on our capacity to create the interdisciplinary teams that can tackle significant real world challenges, and our researchers strive to make a difference outside the world of academe – **research translation** for impact.



INTRODUCTION

Inspired Partnered Excellence is the University of South Australia's Strategic Plan for Research and Innovation for 2016 to 2020. Developed in 2015 through a year-long consultative process this is the blueprint to achieve our vision for research inspired by challenges and opportunities, partnered with end-users and communities, and underpinned by excellence.

The Research and Innovation Strategic Plan, 2016-2020 builds on the action sets from Crossing the Horizon. In particular, it expands on our intent to “deliver industry and end-user informed research, supporting an industry-relevant curriculum,” including work to embed a thematic approach to research themes, build on our research strengths, and deliver the transformed PhD.

This plan for research and innovation is structured around five pillars and strategic goals:

Research Culture – vibrant, outward-facing and responsive.

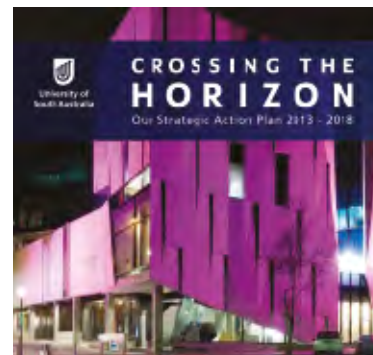
Research Leadership – high performing research leaders who shape research directions, inspire others and lead them to success.

Research Excellence – scale and focus in areas of research strength and seeding new capacity.

Research Partnerships – effective partnerships with the end-users of our research.

Research Translation – as the University of Enterprise we aspire to be a national leader in research translation for real world outcomes.

These interdependent pillars provide a framework through which we can deliberately shape research at UniSA to deliver this vision. They will guide how we invest in the growth of our research capacity, recognise and reward achievement, and signal our distinctiveness to prospective staff, students and partners.





PILLAR 1. RESEARCH CULTURE

**A research culture
that is vibrant,
responsive and
outward facing.**

Vibrant research cultures have clarity of purpose and are identifiable by the engagement and passion of their people. They celebrate success and bring leading researchers from outside the University to work alongside existing and emerging leaders to stimulate activity and debate.

An outward-facing outlook positions researchers to be responsive; to harness their awareness of emerging opportunities to shape research directions and focus resources. It allows researchers to be informed in their approach to partnering with end-users and academics from their own and complementary disciplines as well as inspiring new research directions.

At the heart of this, our research cultures must embed research integrity – ensuring that we conduct our research in a way that is ethical, appropriately recognises the contributions of others and follows best practice and policy. Research environments of this type support and mentor researchers across the experience spectrum – from beginning PhD students to the most established Professors. We produce the best outcomes when we nurture the most capable people, which means that we need our research cultures to embrace diversity and actively model best practice. We aspire to be a sector leader in harnessing the capabilities of women, Aboriginal and Torres Strait Islander people and other minority groups.

Strategically selected and productive academic collaborations with key individuals and groups, internationally and nationally, increases our access to Australian and international funding schemes and drive up the quality and visibility of our research.

FOCUS OF INITIATIVES

THOUGHT LEADERSHIP

Nurture and embed thought leaders to stimulate research culture and shape research directions.

ACADEMIC COLLABORATIONS

International partnerships and consortia that enhance our research quality and impact.

COLLABORATIVE PhDs

Enriched PhDs through collaboration and end-user engagement.

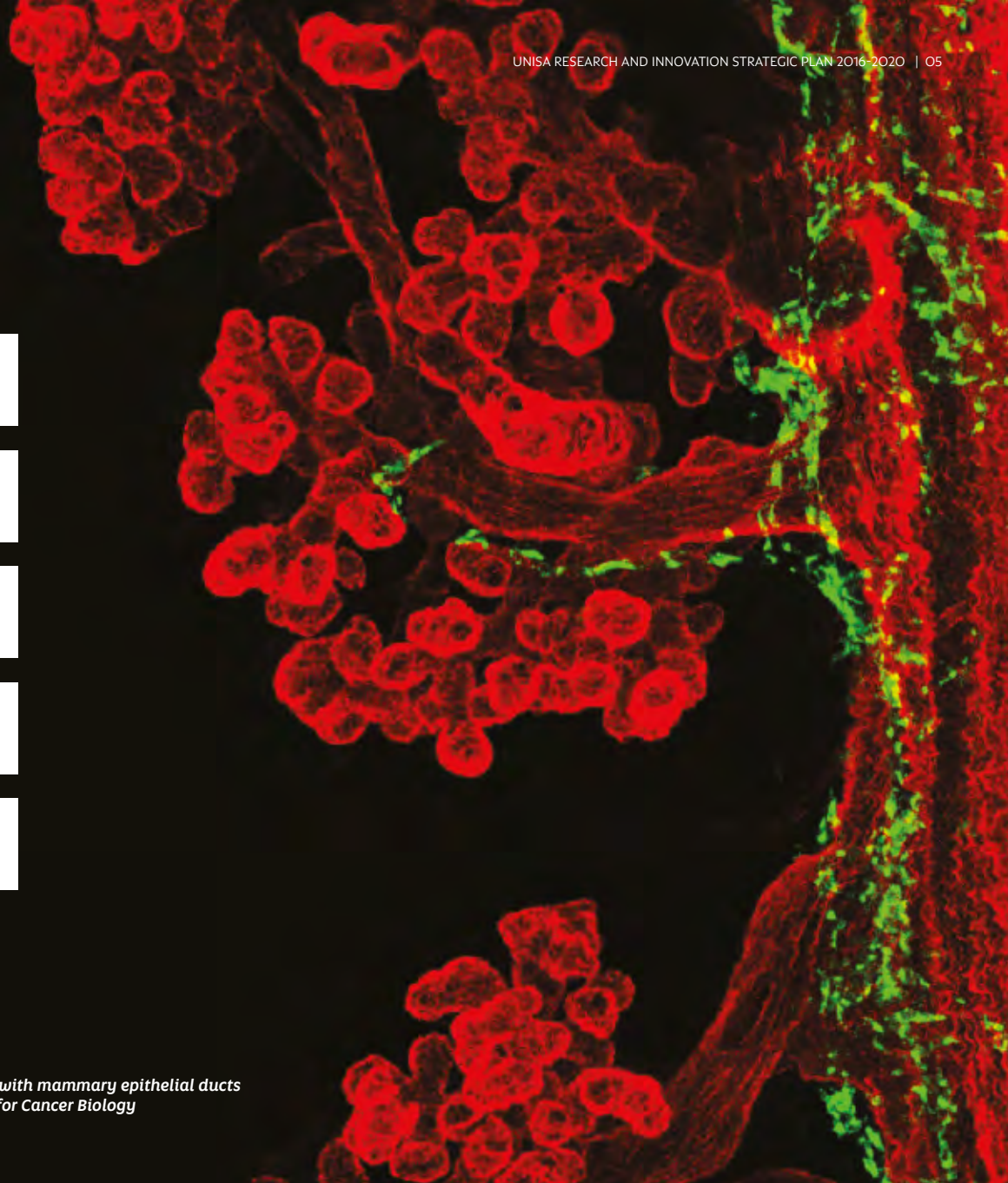
EQUITY AND DIVERSITY

Cultivate an environment where all of our best researchers can thrive.

RESEARCHER AND TEAM PROFILES

As exemplars of vibrant, responsive and outward facing culture.

*Image title: Lymphatic vessels are intimately associated with mammary epithelial ducts
Image by Dr Kelly Betterman, Research Associate, Centre for Cancer Biology*





PILLAR 2. RESEARCH LEADERSHIP

High performing research leaders who shape research directions, inspire others and lead them to success.

Research leadership is the critical differentiator of successful research concentrations. A research leader must be a leading researcher first, and an engaged and productive model for less experienced researchers to be inspired and guided by. Research leaders inspire and harness the talents and aspirations of others to craft and evolve a compelling research narrative – a narrative that integrates and shapes directions in the field and is informed about the opportunities and challenges potential end-users of the research face.

Effective research leadership builds the external profile of individuals and teams and brings in opportunities and partnerships that create the context in which researchers are equipped for success and recognised for achievement. Our most effective leaders will use the UniSA research vision and points of distinctiveness as the foundation for the success of their teams. Critical to the success of this vision is embracing the skills and capacity of staff at all levels, including our Professional staff.

FOCUS OF INITIATIVES

RESEARCH LEADERSHIP DEVELOPMENT

Supporting leading researchers to develop into capable and resilient research leaders.

RESEARCH CAREERS

Promotion and pathways for engaged researchers.

MENTORING AND SPONSORSHIP

To support researcher developments and create opportunities.

Lim Sue May, visiting researcher and Wei Alice Zhang PhD student, from the Centre for Drug Formulation and Delivery research group



PILLAR 3. RESEARCH EXCELLENCE

Nurturing excellence and supporting concentrations of research strength that span the spectrum from fundamental to applied and translational research.

Research excellence critically underpins our capacity to collaborate with the world's best researchers and to engage effectively with research end-users. While it is reasonably rare today for individual researchers working alone, to be able to contribute meaningfully to significant global challenges, in an effective research team that has critical mass in a research area, individual flair and drive can produce extraordinary outcomes.

The strongest results are typically achieved by researchers in interconnected fields working towards a shared vision and with access to world-class research infrastructure.

The results of ERA 2015 confirm the excellence of UniSA's research in a significant number of domains, largely at the 4-digit code level. The University achieved a 5 in sixteen 4-digit discipline codes and in two 2-digit discipline codes.

To build on this foundation we now need to focus on building greater capacity in our areas of research strength. These research strengths

can in some cases effectively be described using the ERA discipline categories, and in other cases other descriptions more effectively capture our distinctive strengths. We also need to identify gaps where building capacity with excellence will transform our ability to engage in significant challenges and opportunities – the “Grand Challenges” of research.

Scale and focus are vital in securing the range of skills and activities our research concentrations need to engage successfully with the full research and funding spectrum – from fundamental research and competitive grants to end-user focussed and contract research.

Research-informed teaching will extend the impact of our research to almost 40,000 students at UniSA, with insights from teaching informing and enhancing research. Research gives teaching distinctiveness and currency by allowing access to the latest thinking, emerging approaches and new techniques. The involvement of practitioners in research further enriches teaching and enhances graduate employability.

FOCUS OF INITIATIVES

SCALE AND FOCUS

Consolidating the scale and focus of our research.

LEVERAGING OUR INVESTMENT

Target internal resources to maximise external funding leverage.

NURTURING CAPACITY

Sponsor emerging researchers to harness external opportunities.

RESEARCH-TEACHING NEXUS

Strengthening our links between research strengths and our teaching programs.

GRAND CHALLENGES

Bringing together interdisciplinary teams to link our strengths to significant real-world challenges.

*Image title: Cultural awareness immersion
Image by Sky Akbar, Research Degree Student, The Business School*



PILLAR 4. RESEARCH PARTNERSHIPS

Effective partnerships with research end-users from industry, government and communities.

Partnering with research end-users from the earliest stages of the conception of a research idea allows our research directions to be shaped by the opportunities and challenges our partners face. This is not in itself an applied research agenda – close engagement with the end-users of research can and should inspire new fundamental research directions as well as provide an effective pathway to the translation of knowledge into societal and commercial outcomes.

A key element in effective research engagement is clear and powerful communication of the outcomes of our research to communities, potential end-users and stakeholders. The ultimate aim here is to develop research ecosystems that create more diverse career pathways for our graduates into the future beyond academia and strengthen links between end-users and our research. Our initiatives will focus on local SMEs to help grow local jobs, local competitiveness and local research as well as global companies who may provide pathways to market for our research.



FOCUS OF INITIATIVES

BUILDING OUR PARTNERSHIPS

Systems and support to enable effective research partnerships.

EMBEDDING PRACTITIONERS IN RESEARCH

Colocate end-users in our research (and vice-versa) to nurture a shared understanding, language, expectations, aspirations and translation pathways.

“INDUSTRY”-READY PhD GRADUATES

Bridging the gap between Universities and research end-users.

RESEARCH IN EVERYTHING

More effectively communicating our research outcomes and harnessing our research to enhance our marketability.

BUILDING OUR RESEARCH THEMES

As a mechanism to support interdisciplinary thematic research and nurture partnerships with end-users.

Image title: The Cluster

Image by Michelle Oppert, PhD candidate, School of Psychology, Social Work and Social Policy



PILLAR 5. RESEARCH TRANSLATION

As the University of Enterprise we aspire to be a nation leader in research translation by being responsive and nimble to societal, industry-driven and governmental challenges.

UniSA is committed to translating new knowledge into outcomes. We are specifically focused on doing research that has the potential to make a difference. For UniSA researchers, the achievement of research impact or “real world outcomes” can mean generating revenue and cost savings for businesses, shaping public policy at state and federal level, improving education outcomes, or relieving pain and prolonging life. To do this we partner with policy makers, government agencies, NGOs, community groups, small businesses, global corporations, education providers, and the public and private healthcare sectors.

We aim to be easy to partner with and recognised for delivering real world outcomes across the spectrum – from impact on policy, benefit to society, to the adoption of disruptive technologies. We will support the development of new industries, the evolution of existing industries and the transformation of communities by working hand in hand with industry, government and end-user communities.

Our approach to intellectual property management is framed by a set of principles that articulate our intent to provide timely and commercially reasonable access to our intellectual property, expertise and capabilities. It will encourage our researchers to be entrepreneurial and to engage in the commercialisation of their research and to be responsive to the needs of industry and community partners. This is enabled by prioritising a deal-focussed approach to translation.

FOCUS OF INITIATIVES

REAL WORLD IMPACT

An evidence base to showcase the impact of our research.

ENTREPRENEURSHIP

Welcome entrepreneurship in research staff, our student community and from our partners.

COMMERCIALISATION

Creating value from knowledge to develop solutions for industry, government and communities via a flexible and easy partnership approach further facilitating the effective management and transfer of intellectual property developed by our research to our partners.





TRANSFORMED PhD

UniSA is taking a leadership role in transforming the PhD to increase prospects for PhD graduates' employment outside academia within roles that utilise their expertise and to meet emerging needs of industry. This brings together the two areas of focused activities in this plan – Collaborative PhDs and Industry-ready PhD graduates.

As articulated in Crossing the Horizon, UniSA aspires to provide PhD education that:

- Incorporates suitable coursework components;
- Uses supervisory panels and practice-based dissertation committees;
- Incorporates a video defence of the thesis, drawing participation from international researchers.

Adding a structured dimension to research training degrees will produce graduates that are not only expert in their disciplines, but are also:

- Capable and confident in working with end-users from industry, government and community;
- Entrepreneurial and business-aware; and
- Effective contributors to interdisciplinary research investigations.

The Transformed PhD will incorporate a coordinated suite of activities that will:

- Integrate end-users in scoping PhD research projects and to take active roles in supervision, advising, and mentoring our research students;
- Have students develop a portfolio of business and transferable skills of relevance to our knowledge-based enterprise economy;
- Broaden research students' focus on entrepreneurship and innovation;
- Involve cohorts of research students in work on research themes that reflect state and national priorities and global challenges.

Emily Johnston, Research Degree Student, School of Pharmacy and Medical Sciences and 2014 Three Minute Thesis UniSA Grand Final winner



SAGE PILOT OF ATHENA SWAN IN AUSTRALIA

SAGE is an initiative of the Australian Academy of Science and the Australian Academy of Technology and Engineering to improve gender equity in STEMM (Science Technology Engineering Maths and Medicine) in Australian organisations.

The program has been adapted from the Athena SWAN Charter, established in the UK in 2005, an accreditation and improvement program for higher education and research organisations focusing on gender and other forms of inequality.

The Athena Swan Charter has proved highly effective in transforming gender equity action to improve the promotion and retention of women and gender minorities within STEMM.

UniSA has accepted the charter principles and will participate in the Australian Athena SWAN Charter pilot commencing in September 2016, with formal accreditation results due mid 2019. To read more about the ten principles and the Australian SAGE pilot, go to: **science.org.au/SAGE/Pilot**

*Image title: Plasma-hydrogel therapy
Image by Dr Endre Szili, Research Fellow, Future Industries Institute*

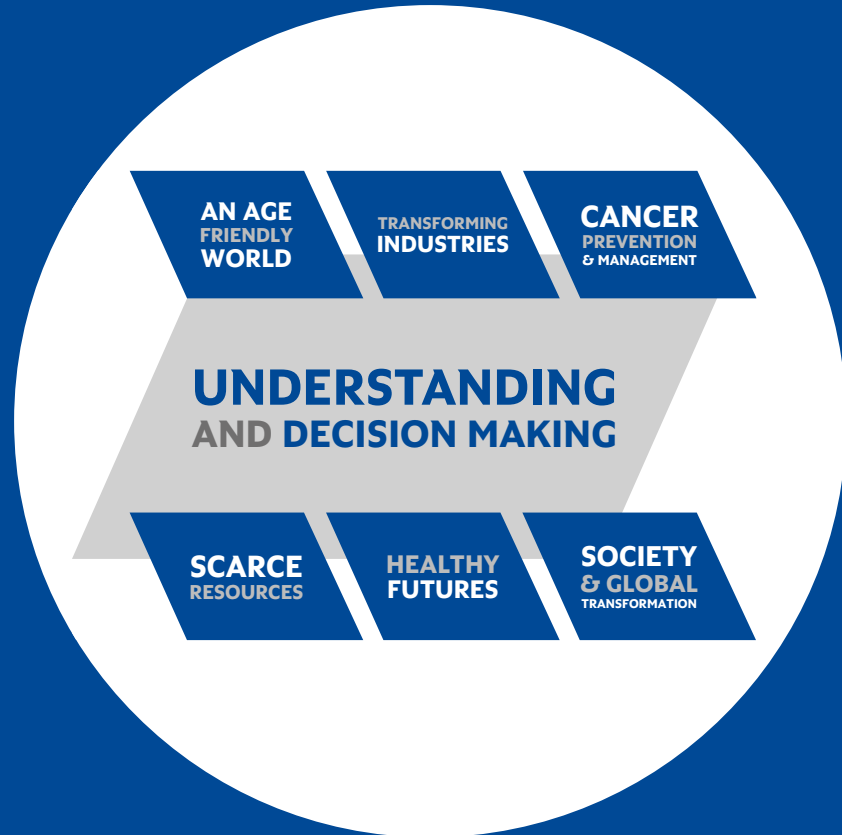
UNISA RESEARCH THEMES

The thematic approach to research at UniSA is a mechanism for building research capability that is positioned around six key themes to ensure we can deliver innovative and sustainable solutions that respond to some of the most pressing needs of society.

Our research themes are:

- An Age Friendly World
- Transforming Industries
- Cancer Prevention and Management
- Scarce Resources
- Healthy Futures
- Society and Global Transformation

The research themes are intrinsically defined to be interdisciplinary and to seed research activities that span our existing Schools and Divisions. All six are underpinned by a shared focus on research that enhances understanding and facilitates evidence-based decision-making.



INTERNATIONAL COLLABORATION

UniSA is committed to being a globally visible university with global reach and leverage and to building enduring and mutually beneficial relationships with international partners.

Already UniSA is a strongly internationally engaged university: placed 25th in the Times Higher Education 2015 ranking of world universities under 50; is the top South Australian university in the Times Higher Education World's Most International Universities 2016 rankings; an array of collaborative relationships with universities and industry around the world; and a globally diverse research community featuring 25% of staff and 29% of PhD students from outside Australia.

Reflecting the importance of global research engagement, measures to build a stronger international profile for our research have been embedded in the UniSA Research and Innovation Strategic Plan. The development of high quality international partnerships is encouraged as a crucial element of our research endeavour. Our researchers are actively supported to work with international academic partners as well as research end-users and to lead and collaborate on international grants. Our Transformed PhD incorporates a video defence that draws participation from leading international researchers into postgraduate research training. All researchers are encouraged to publish with international co-authors because we know these have greater prospects for strong citations, international influence and grant funding.



RESEARCH IN EVERYTHING

**When we reflect
the needs of
others in our
research planning
we become
active partners
in conversations
and outcomes
far beyond
the traditional
boundaries
of academe.**

By placing research in everything we communicate as a University, we increase the visibility of our research, build our research reputation, and demonstrate the contribution we make.

Researchers and professional staff can actively shape and grow this recognition through effective communication about our research focus and achievements and by demonstrating how our research enriches other aspects of our work, including teaching. Teaching that is embedded by research facilitates a learning environment that is current, innovative and progressive; further enhancing the employability of our graduates.

*Image title: Totem
Image by Haydn Smith,
undergraduate student, School
of Information Technology and
Mathematical Sciences*

UNISA INTELLECTUAL PROPERTY PRINCIPLES

We are committed to the effective management and transfer of intellectual property developed by our research to our partners. We offer a pragmatic and flexible approach to working with our partners and to ensuring the outcomes of research have every opportunity to deliver economic, social and environmental benefits to our industry collaborators and entrepreneurs in Australia and internationally. We are committed to working in an agile and nimble way that respects the (often tight) timeframes and unique requirements of our partners and to meet these to the utmost of our ability.

OUR APPROACH TO MANAGING INTELLECTUAL PROPERTY IS BASED ON THE FOLLOWING PRINCIPLES:

1. We embrace partnerships with external parties who are positioned to create outcomes from our research, whether this be end-users who have partnered with us in conducting or proposing the research, entrepreneurs or companies who can provide a pathway to markets.
2. Intellectual Property ownership and commercialisation leadership will be assigned to the party deemed best placed to drive commercial outcomes.
3. Our interactions with research end-users will be governed by a transparent and user-friendly system that supports and encourages engagement using a range of flexible models.
4. We provide open access to our Intellectual Property Policies and Standard Commercial Agreements, to provide a simple and transparent framework.
5. All partnerships and resultant commercial agreements will be developed and negotiated in a prompt manner and in keeping with these core principles.
6. We actively encourage and promote an entrepreneurial culture for our staff and students. This includes a system of supports to facilitate the creation of new ventures led by our staff and students or where they are actively involved.
7. IP Principles that provide clarity to partners, entrepreneurs (from outside and within the university) and staff about how they can engage with UniSA intellectual property.

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

WORLD-CLASS RESEARCH

The Excellence in Research for Australia (ERA) 2015, a federal government assessment activity, evaluates the quality of Australian universities research benchmarked against world standards. World-class research is foundational to an innovative future and facilitates high-quality research necessary to address economic, social and environmental challenges.

The 2015 ERA assessment found that 97% of UniSA's evaluated research is rated at World Class or above (ERA ratings 3, 4 and 5).

UNISA ACHIEVED WELL ABOVE WORLD STANDARD STATUS (ERA RATING 5) IN THE FIELDS OF:

- 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

UNISA ACHIEVED ABOVE WORLD STANDARD STATUS (ERA RATING 4) IN THE FIELDS OF:

- 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



ERA 2015 97%

ERA Year	Percentage
ERA 2015	97%
ERA 2012	86%
ERA 2010	70%

ERA 2012 86%

ERA 2010 70%

Percentage of UniSA's research assessed,
classified as **WORLD STANDARD OR ABOVE.**



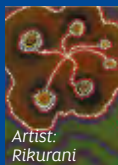
University of
South Australia

Prof Tanya Monro FAA, FTSE, FOSA, FAIP, GAICD
Deputy Vice Chancellor and Vice President: Research and Innovation
ARC Georgina Sweet Laureate Fellow

DVCResearch@unisa.edu.au

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

Telephone: +61 8 8302 6611
unisa.edu.au



Acknowledgement of Country

UniSA respects the Kurna, Boandik and Barngarla 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

CRICOS Provider Number: 00121B