

INSPIRED INNOVATION WITH IMPACT



**AUSTRALIAN
TECHNOLOGY
NETWORK**
OF UNIVERSITIES

The ATN Advantage

The ATN is a national collaborative group of five major universities, including QUT in Brisbane, University of Technology Sydney, RMIT University in Melbourne, University of South Australia in Adelaide and Curtin University in Perth.

ATN's National Network



FAST FACTS



INDUSTRY COLLABORATION

Since 2010, almost 70% of our research funding across the ATN comes from industry.

We have a strong history of collaborating with a wide range of national and international partners including multi-national organisations, government departments and not-for-profit organisations.

Our industry partners have access to the ATN's extensive international network of cutting-edge research, skills, knowledge and facilities.



REAL-WORLD RESEARCH

The ATN invest over \$1billion annually on real-world research and experimental development.

We are leading participants in Australia's Cooperative Research Centres linking government, industry and researchers.

93% of ATN research is ranked at world-class or above. All ATN universities excel in the areas of Physical Chemistry (including Structural), Environmental Science and Management, Human Movement and Sports Science, Cultural Studies, Materials Engineering and Nursing.



WORK-READY GRADUATES

Almost 20% of Australia's graduates are educated at ATN universities.

Our graduates are leaders in business and community and enjoy a salary earnings premium (The Household, Income and Labour Dynamics in Australia (HILDA) survey 2015).

ATN graduate employment rates are amongst the best in Australia.

Top

25

ALL 5 ATN UNIVERSITIES FEATURE
IN THE TOP 25 UNIVERSITIES
UNDER 50 YEARS OLD.
2015/2016 QS UNIVERSITY RANKINGS

Top

100

ALL 5 ATN UNIVERSITIES FEATURE
IN THE TOP 100 UNIVERSITIES
UNDER 50 YEARS OLD.
2015 TIMES HIGHER EDUCATION RANKINGS

Top

200

ALL 5 ATN UNIVERSITIES
FEATURE IN THE TOP 200
MOST INTERNATIONAL
UNIVERSITIES IN THE WORLD.
2015/2016 TIMES HIGHER EDUCATION
INTERNATIONAL RANKINGS

INDUSTRY COLLABORATION

ATN Industry Doctoral Training Centre (IDTC)

The IDTC collaborates with industry to find R&D solutions for their business challenges. This unique program combines traditional PhD research with training in professional and broad technical skills required by industry.

Our PhD students work closely with industry partners on research projects that drive innovation, economic development, social change and environmental sustainability.

They collaborate with SMEs and some of Australia's biggest companies in sectors such as banking, mining and energy, as well as research intensive Government agencies including the ABS and CSIRO, both of whom are Foundation Partners of the IDTC.

ATN/Cisco Networking Academy

The ATN will now offer students in IT and engineering-related disciplines more opportunities to enhance their learning by providing a value-added, expanded Cisco Networking Academy in partnership with global IT company, Cisco.

Currently, all ATN members have long standing partnerships with Cisco and house Cisco Networking Academies, identifying and developing the skills people and businesses need to thrive in a changing economy.

Through this enhanced partnership, ATN students will have experiences exclusive to our member universities, giving them access to Cisco technologies, and the wider Cisco ecosystem, through a range of industry-driven learning opportunities.

INTERNATIONAL ENGAGEMENT

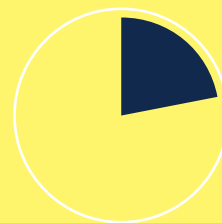
Science without Borders

1750 undergraduate students from Brazil have been placed via the Science without Borders program into ATN universities. Our universities proactively source industry-based internships for these students with a large number of businesses in a range of industry sectors across Australia. Our aim is to provide students and researchers with the opportunity to undertake studies, internships and research projects that equip them with meaningful, industry skills and knowledge to put into practice back in Brazil.

FAPESP-ATN Joint Research Cooperation Scheme

In 2013, the ATN signed a Scientific Cooperation Agreement with the São Paulo Research Foundation (FAPESP) in Brazil with funding of joint research projects, collaboration on scientific and technological seminars, and the exchange of researchers between the State of São Paulo and ATN universities.

22%



**of Australia's
international
students choose
our universities.**

WORK-READY GRADUATES

ATN e-Grad School

The ATN's commitment to research has led to the establishment of a virtual graduate school operating in Australia and internationally, to support the development of non-discipline specific professional skills for public and private sector researchers, research administrators and higher degree research graduates.

Our courses ensure graduates are equipped with the skills required by industry and cover areas such as public policy, project management, research commercialisation, leadership & communication and career skills and portfolio management.

Huawei Seeds for the Future program

The ATN and Huawei Australia have teamed up for a three-year partnership as part of its Seeds for the Future program. To date, thousands of students have participated in the program from over 100 universities across 35 countries. Participating students get an insight into the latest emerging technologies, have the opportunity to explore Huawei's Exhibition Centres, Logistics Centre and R&D facilities and experience life on campus at a Chinese university.

"This program was more than just a unique experience to be included in my resume, it was a life changing opportunity. My studies gave me an advantage amongst my engineering peers. The innovation and ICT development concepts I learned from the program will assist me in constructing my own unique and creative ideas."

JEROME DE VERA, UNISA STUDENT
2015 HUAWEI SEEDS FOR THE FUTURE PROGRAM PARTICIPANT.



CURTIN UNIVERSITY

Curtin's research is concentrated around four key areas and remains broadly based to ensure critical mass and intellectual breadth and rigour. Their research approach promotes collaborative projects that contribute to the sustainable environmental, economic and cultural development of communities worldwide.

Curtin maintains strong networks with industry, government and community both within Australia and internationally. Strong, strategic partnerships and recruitment of world-class research leaders have been important in the establishment and growth of their research programs.

Curtin staff and students are involved in more than 50 major research institutes, as well as 13 industry-focused, cooperative research centres.

Health

Curtin takes a unique and comprehensive approach to addressing the burden of chronic health conditions and lifestyle diseases that impact on the social and economic sustainability of communities.

Information Communication Technology and Emerging Technologies

Curtin has strong research strengths across diverse areas including radio astronomy, big data analytics, wireless

telecommunication, digital humanities, e-business, e-health and digital ontologies. Researchers from Curtin are also leading research in the international Square Kilometre Array (SKA), the world's largest radio astronomy project.

Minerals and Energy

Curtin's research in minerals and energy is aimed at maximising existing resources and developing innovative technological solutions to address our future needs. Research is focused in the areas of resource exploration, extraction and processing; the development of new materials, conventional energy sources and alternative fuel technologies; mineral and energy economics and policy; and the impact of mining on remote communities.

Sustainable Development

Sustainable development is one of the core concerns of governments and communities worldwide. Through fundamental and applied industry-focussed research Curtin offers research opportunities in sustainable development, built environment, economic modelling, climate change, marine and terrestrial ecosystems, biodiversity, sustainable tourism and sustainable resource processing.



RECOGNISED AS THE LARGEST
AND THE MOST CULTURALLY
DIVERSE OF WESTERN
AUSTRALIA'S UNIVERSITIES

61,000+
students

16,000
international students
from 130 countries



OVER 90 EXCHANGE
PARTNERSHIPS WITH
UNIVERSITIES IN MORE
THAN 20 COUNTRIES.



AWARDED FIVE STARS FOR
GRADUATE STARTING SALARY.
(GOOD UNIVERSITIES GUIDE 2015)

Ranked

26

MOST INTERNATIONAL
UNIVERSITY IN THE WORLD.
(TIMES HIGHER EDUCATION WORLD
UNIVERSITY RANKINGS 2016)

Top

2%

OF UNIVERSITIES WORLDWIDE IN
THE 2015 ACADEMIC RANKING OF
WORLD UNIVERSITIES (ARWU).



The MWA array consists of 128 tiles spaced out over three kilometres in the Shire of Murchison in remote Western Australia.

CASE STUDY

A RISING STAR IN ASTRONOMY

As a leader in the preconstruction of the world's most powerful radio telescope, Curtin University is helping change the way we see the cosmos.

Researchers at Curtin University are helping prepare the world for the arrival of the \$2.5 billion Square Kilometre Array (SKA) radio telescope, which will be the largest and most powerful ground-based array ever built.

The SKA is a network of thousands of antennas that will help answer fundamental questions in physics and cosmology, and provide unparalleled insights into the formation and evolution of the Universe.

Curtin leads a prestigious group of partners, including MIT and Harvard, on an SKA precursor project known as the Murchison Widefield Array (MWA), a low-frequency radio telescope that will play a vital role in developing

the SKA's low-frequency science program.

Professor Steven Tingay, Director of the MWA at Curtin University describes the MWA as a 'time machine' designed to look back in time more than 12 billion years, to watch the formation of the first stars and galaxies in the Universe, less than one billion years after the Big Bang.

"The MWA has been operating for almost three years and has collected over seven petabytes of data already, the equivalent of almost half a million High Definition movies," Professor Tingay said.

With more than 2,000 antennas operating between 80 and 350 MHz, the MWA is a groundbreaking project in its own right, with applications ranging from the detection of plasma ducts in the Earth's stratosphere to the study of the first stars and galaxies.

UNIVERSITY OF SOUTH AUSTRALIA

Research at UniSA is inspired by challenges and opportunities, partnered with industry and communities, and underpinned by excellence. UniSA academics engage in interdisciplinary teams to translate their research into meaningful outcomes.

Contributing to a research environment that is vibrant, responsive and outward-facing are the University's research themes, which link research strengths and address local and global socio-economic needs and include:

An Age Friendly World

Unlocking human potential across the community through intergenerational approaches.

Transforming Industries

Building industries and economies for the future.

Cancer Prevention and Management

Taking on one of the world's greatest health challenges with the aim of improving prevention, diagnosis, treatment and patient care.

Society and Global Transformations

Transforming societies through global citizenship.

Healthy Futures

Understanding, treatment and prevention of, chronic diseases.

Scarce Resources

Developing safe and sustainable practices for managing the world's finite resources – making more with less.

SOUTH AUSTRALIA'S LARGEST
ACADEMIC COMMUNITY

33,000+
students

6,000
international students

190,000
Alumni



AUSTRALIA'S LEADING UNIVERSITY
FOR INTERDISCIPLINARY RESEARCH.
(2015 U-MULTIRANK)



2400+ INTERNATIONAL
RESEARCH COLLABORATIONS
ACROSS 109 COUNTRIES.

2000

COLLABORATING WITH OVER
2000 INDUSTRY PARTNERS



GRADUATE EMPLOYMENT RATES
ABOVE THE NATIONAL AVERAGE.
(AUSTRALIAN GRADUATE SURVEY)

Number

2

IN AUSTRALIA FOR STUDENT
SUPPORT SERVICES.
(2015 INTERNATIONAL STUDENT BAROMETER)



Associate Professor Drew Evans,
University of South Australia.

CASE STUDY

WORLD'S FIRST PLASTIC AUTOMOTIVE MIRROR

Researchers from University of South Australia's Future Industries Institute have delivered the world's first plastic car mirror by pioneering highly sophisticated innovations in thin film coatings.

Through clever materials engineering, the plastic mirror out-performs glass in terms of abrasion resistance and environmental sustainability. The mirror is also shatter proof, lighter and safer than conventional glass mirrors, and meets global automotive standards.

The innovative multi-layer coating design includes a reflective mirror layer, an

abrasion resistant layer and a capping layer to prevent environmental damage. The layers combined, are less than one tenth the thickness of a human hair.

This technology has been transferred to industry partner SMR Automotive and to date, more than 1.5 million mirrors have been produced and exported from Adelaide by SMR Automotive to the United States.

The thin film coatings process has the potential to make an impact on other key sectors including defence, aerospace and biomedical industries.





RMIT UNIVERSITY

RMIT University, a global university of technology, design and enterprise brings unique capabilities to research through a transdisciplinary approach. Its academic expertise, strong links to research partners and consideration of technological and social dimensions enables it to find solutions to critical problems.

A priority of RMIT Research & Innovation is to develop clusters of multi-disciplinary research and innovation capabilities which will be deployed to deliver significant economic, social and environmental impact. As such, the University has been investing heavily in people, equipment and facilities to increase the quality and scale of research outputs within the research ecosystem.

Research at RMIT is carried out in colleges and schools under the umbrella of eight Enabling Capability Platforms:

- Advanced Manufacturing and Fabrication
- Advanced Materials
- Biomedical and Health Innovation
- Design and Creative Practice
- Global Business Innovation
- Information and Systems (Engineering)
- Social Change
- Urban Futures

This allows RMIT to deploy its areas of research and innovation capability to comprehensively address critical local, national, regional and global challenges and to nimbly capture emerging opportunities.

LARGEST TERTIARY INSTITUTION
IN AUSTRALIA

82,000
students

26,000
international students
from 100 countries



150+ EXCHANGE PARTNERSHIPS
ACROSS 41 COUNTRIES, 200+
RESEARCH COLLABORATIONS WITH
OVERSEAS INDUSTRY & PARTNERS.



LEADERS IN
INTERNATIONAL EDUCATION.
(INAUGURAL WINNER OF THE VICTORIAN
INTERNATIONAL EDUCATION AWARD)

Ranked

21

UNIVERSITY IN THE WORLD
UNDER 50 YEARS OLD.
(2015/2016 QS TOP 50 UNDER 50)

Ranked

34

IN THE WORLD FOR THE
INTERNATIONAL PROFILE OF THE
UNIVERSITY'S ACADEMIC STAFF.
(QS WORLD UNIVERSITY RANKINGS 2015)



Professor Adrian Mouritz, RMIT University.

CASE STUDY

COMPOSITES FLY HIGH

RMIT researchers have collaborated with Boeing to develop innovative methods for damaged high-tech carbon fibre composite materials to repair themselves without human intervention.

Through the use of 'self-healing', an aircraft with an outer shell is able to mimic the regenerative powers of skin and can repair itself when cracked or damaged.

Led by RMIT's School of Engineering Executive Dean, Professor Adrian Mouritz, researchers are undertaking a number of futuristic research projects in advanced composites that may, in coming years, find applications on civil and military aircraft.

Projects include bio-mimicking, 3D printing and repair technologies for composites.

Mouritz says composite materials allow a lighter aircraft, which increases airplane efficiency, reduces fuel consumption, lowers greenhouse gas emissions and reduces maintenance.

The RMIT research team has had a long standing partnership with Boeing's research and development unit, Boeing Research & Technology Australia (BR&T Australia). It's a relationship that has benefited both organisations - giving Boeing access to innovative thinking and allowing RMIT researchers to work on projects with real, long-term pay-offs.

UNIVERSITY OF TECHNOLOGY SYDNEY

UTS is a world-class research intensive university with a rapidly growing reputation for its research quality and impact across a wide range of discipline fields.

They are committed to practical innovation and to the development of impact-driven research that benefits industry and the broader community, helping shape the world we live in.

UTS's world-leading research spans a range of areas, including health, data science, sustainability, social futures, future work and industry, forensic science, applied economics, environmental sciences, robotics, civil engineering, microbiology and quantum computation.

The University has multiple research centres based within faculties, partnerships with international universities in a number of joint research centres, and collaborates on large-scale joint research programs administered by other institutions.

More than 150 companies partner with UTS, sharing their resources and expertise in exchange for leading research outcomes, programs of innovation, development and commercialisation, staff education and access to our best graduates. UTS also has Key Technology Partnerships with leading universities in Greater China, India and Europe, and collaborative research in dozens more.

Based in the heart of Sydney's southern CBD, UTS's campus has undergone a \$1 billion investment in infrastructure to develop a series of new buildings and equipment, which will support their delivery of technology-based model of teaching and industry-focused research.



40,639

students

11,418

international students

192,483

Alumni



OVER 248 EXCHANGE AGREEMENTS
ENABLING STUDENTS TO STUDY ON
EXCHANGE IN 50 COUNTRIES.



WORLD LEADER IN INNOVATIVE
TEACHING & LEARNING PRACTICES.
(WINNERS OF THE HYBRID LEARNING
INNOVATION CATEGORY, 2015 WHARTON-QS
STARS REIMAGINE EDUCATION AWARDS)

Ranked

21

UNIVERSITY IN THE WORLD
UNDER 50 YEARS OLD.
(TIMES HIGHER EDUCATION 100
UNDER 50 RANKINGS 2015)

CULTURALLY DIVERSE - UTS
STUDENTS REPRESENT

120

different nationalities

145

languages spoken



Sydney Harbour Bridge.

CASE STUDY

ROBOTS REVOLUTIONISE SYDNEY HARBOUR BRIDGE

Leading robotics group Centre for Autonomous Systems at UTS have developed a world-first robotic solution to improve the health and safety of bridge maintenance workers.

The technology, developed in collaboration with New South Wales Roads and Maritime Services (RMS), is a safer solution to the hazards of grit-blasting operations that can expose workers to lead-based paints.

UTS researchers used the latest in mechatronic technology to develop a unique lightweight robot that is able to operate in an unstructured environment with little prior knowledge of its surroundings.

Nicknamed Sandy and Rosie, two of these robots are now used extensively on the iconic Sydney Harbour Bridge. They are able to work unaided in unfamiliar and dangerous environments and can

safely explore an unknown environment, scan and create a 3D map of the space, avoid obstacles and grit-blast surfaces to a high standard.

The robots are a better solution for the hazardous side of bridge maintenance work, allowing workers to be well clear when old paint is being blasted off the bridge's steelwork.

This multi-award winning technology has been commercialised to tap into the \$1.2bn global market in abrasive blasting and has the potential to be adapted to many other industries including steel fabrication, construction and cleaning.

The breakthrough technology has since been commercialised with the formation of spin-off company, Sabre Autonomous Solutions with major investment from Australian company Burwell Technologies.

QUT

QUT's high quality, impact focused research and research training are delivered through two flagship research institutes. The Institute for Health and Biomedical Innovation focuses on three key themes: health determinants and health systems, injury prevention and trauma management, and chronic diseases and ageing. The Institute for Future Environments undertakes programmatic research spanning the global bio-economy, digital productivity and services, sustainable communities, advanced material manufacturing, innovation systems, and intelliSensing.

QUT has identified 12 corporate level strengths, a number of which are embedded in its institutes:

Biomedical Engineering and Health Technologies

QUT researchers are collaborating with surgeons to promote the innovative use of engineering, physics and technology in the development of new medical techniques, materials, procedures and devices.

Biomolecular Science

Biomolecular research at QUT involves molecular, cellular, biochemical, physiological and genetic approaches to investigate disease susceptibility, progression and treatment response.

Chronic Disease Intervention

Chronic disease intervention research is focused on developing new ways of treating and managing common chronic diseases.

Data Science, Computational Modelling and Simulation Science

Research in this field exploits QUT's world-class computing and visualisation infrastructure to turn large data sets into valuable knowledge for a range of industries.

Digital Media

Digital media research investigates digital transformations of contemporary media and communication in their social contexts.

Educating and Engaging Children and Youth

Research is focused on the important social necessity of engaging and educating young people, their families and communities.

Health Systems

Health systems research is focused on providing better care for patients with complex, chronic disorders, and designing optimal health facilities and economic efficiencies in our health systems.

Injury Prevention and Management

Injury prevention and management research spans wide ranging fields like workplace health and safety, road safety, sport injury prevention, education and more.

Innovation

Innovation research focuses on the impact of government and industry policy on innovation, corporate innovation, venturing and strategic renewal and the role of innovation systems.

Materials Science and Engineering

Research is centred around the synthesis, characterisation and application of materials across a range of applications, including nanomaterials research, surface engineering, molecular synthesis and characterisation.

Plant Biotechnology

QUT's security-focused research aims to reduce threats to food, health and water supplies, and minimise the impacts of climate change, crime and terrorism.

Robotics and Computer Vision

Research in this field aims to develop a new generation of intelligent systems that can visually sense and understand complex, unstructured real-world environments.

47,000
students
8,000
international students
230,000
Alumni



STUDENT EXCHANGE AGREEMENTS
WITH MORE THAN 150 PARTNER
INSTITUTIONS IN OVER 35 COUNTRIES.



\$4 MILLION+ IN SCHOLARSHIPS
AVAILABLE TO STUDENTS WHO
NEED FINANCIAL SUPPORT.

Ranked

13

GLOBALLY FOR
EMPLOYABILITY RATE.
(QS GRADUATE EMPLOYABILITY
RANKINGS 2016)

Received over

100

AUSTRALIAN AWARDS FOR
UNIVERSITY TEACHING,
RECOGNISING AUSTRALIA'S
MOST OUTSTANDING
TEACHERS AND PROGRAMS.



Professor Kerrie Mengersen, QUT.

CASE STUDY

SAVING ENDANGERED SPECIES THROUGH VIRTUAL REALITY RESEARCH

QUT researchers have used panoramic cameras to create a virtual reality world to greatly improve conservation efforts for a number of endangered species in Australia and overseas.

Professor Kerrie Mengersen from QUT's School of Mathematical Sciences uses new film technology and 360-degree cameras, to create virtual immersive environments for experts to visit without leaving the laboratory.

In a 3D display with panoramic views, experts can assess any part of a species' habitat that needs to be preserved without having to walk through it.

The QUT team ran a successful trial on the endangered brush-tailed rock wallaby in Queensland,

New South Wales and Victoria. The technology is also being further developed to help manage other iconic species in South Africa, Asia and South America.

Professor Mengersen, who is an ARC Laureate Fellow, has worked to protect critically endangered cheetahs in southern Africa and orangutans in Indonesia, tapping into local knowledge and building statistical models to guide conservation efforts.

"These wallabies live in inaccessible places and are rare. However, working with ecologists' data, we built a predictive model into a virtual reality environment and used it to locate where the habitat exists across a broad landscape."

PROFESSOR KERRIE MENGENSEN.

ATN.EDU.AU

GPO BOX 2471 Adelaide SA 5001

E: info@atn.edu.au

T: +61 8 8302 9135

 Follow us @ATNunis

