Victoria's Research Excellence

ERA Case Studies

STUDY MELBOURNE
Victoria
Australia

DISCLAIMER

The information contained in this booklet is provided for general guidance and assistance only and is not intended as advice. You should make your own inquiries as to the appropriateness and suitability of the information provided. While every effort has been made to ensure the currency, accuracy or completeness of the content, we endeavour to keep the content relevant and up to date and reserve the right to make changes as required. The Victorian Government, authors and presenters do not accept any liability to any person for the information (or the use of the information) which is provided or referred to in the booklet.

Authorised by the Victorian Government
Department of Jobs, Precincts and Regions
1 Spring Street, Melbourne, Victoria 3000
Telephone (03) 9208 3333

October 2019

This document is also available in PDF and accessible Word format at **studymelbourne.vic.gov.au**

Contents

Australia's knowledge capital

Melbourne, the capital city of Victoria, is a global leader in research and education, attracting investment and collaboration from around the world.

Melbourne is Australia's best student city, and the third best in the world, according to QS Best Student Cities rankings (2019). In 2018, more than 220,000 international students from 170 countries chose to study in Victoria.

The State of Victoria is one of the largest research and development hubs in the southern hemisphere. Many organisations base their research and development in Victoria, or partner with our institutions, attracted by a culture of innovation, cutting-edge facilities and world-class universities delivering industry-ready graduates.

The University of Melbourne and Monash University consistently rank among the world's top 100 universities. These universities, together with RMIT University, Deakin University, Swinburne University and Victoria University, all improved their position in the 2020 QS World University Rankings, demonstrating Victoria's ongoing commitment to educational innovation and a premium student experience.

Victoria is a major industry hub with a thriving economy, offering rich opportunities for world-changing and commercially-focused research. Successful companies such as GlaxoSmithKlein, Bosch, Siemens, USA Cargill, Synnex, Eventbrite, Ali Baba and many more are headquartered in Victoria. Victoria's research institutes are experts in delivering complete solutions for local and international partners, across a full spectrum of research disciplines. In particular, Victoria is leading innovation in ICT, life and health sciences, clean energy technology, agriculture and food processing.

Victoria's research was rated as 'above world standard' in 109 disciplines in the Excellence in Research for Australia (ERA) 2018 rankings. Nine universities rated 'well above world standard' in one or more major fields of research.

Victoria's research institutes are supported by world-leading infrastructure, including:

- The Australian Synchrotron – a world-class national research facility
- Carbon Nexus – a carbon fibre research facility
- AgriBio – an agricultural biosciences research and development facility
- Victorian Comprehensive Cancer Centre – cancer research, education, treatment and care.

The case studies in this guide showcase the diversity and calibre of Victoria's research capabilities. In Victoria, researchers have created the algorithms crucial to modern Wi-Fi, developed spray-on technology allowing ships to 'self-repair' at sea, and devised mathematical modelling to predict the spread of influenza. Victorian researchers have the skills, facilities and opportunities to deliver important and lasting change.

Victoria's global leadership in education has generated prosperity and success for countless people, communities and organisations around the world. A concentration of expertise and infrastructure – supported by a commitment to innovation and collaboration – makes Melbourne a true international centre of research and education.

Research excellence in Victoria

The Excellence in Research Australia (ERA) report is produced every third year by the Australian Research Council (ARC). The 2018 ERA report demonstrates Victorian universities continuing to deliver world-leading research across diverse fields.

The ERA evaluation framework aims to identify and promote excellence across the full spectrum of research activity, including both discovery and applied research, within Australia's higher education institutions.

For prospective students and potential research partners in industry, government and education, the data provides invaluable insight into each university's research strengths.

Universities submitted their achievements across 22 major fields of research (and 157 specific disciplines). Based on key indicators, these were evaluated by eight expert committees made up of 150 leading researchers from Australia and overseas.

The scale of the ERA 2018 demonstrates Australia's powerful research capacity, incorporating:

- 2,603 units of evaluation, of which 66 per cent rated as 'above' or 'well above' world standard
- 76,261 researchers and related staff
- 506,294 publications
- AU$10.9 billion in external research income.

Victoria's research expertise clearly recognised

Nine of Victoria's 10 universities rated 'well above world standard' in one or more major fields of research, with particular strength in the fields of Psychology and Cognitive Sciences, Physical Sciences and Medical and Health Sciences across multiple universities.

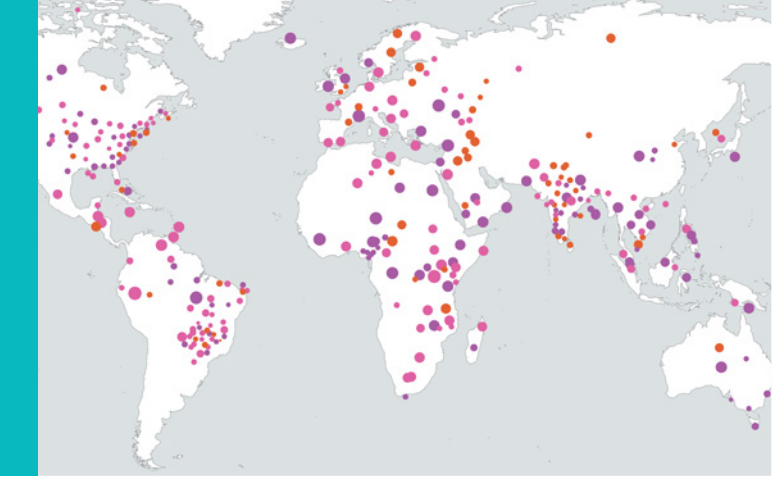
The tables throughout this document show the research strengths measured as:

- ▲ 'well above world standard',
- ■ 'above world standard' and
- ● 'at world standard'.

Notably, 109 discipline areas were rated as 'well above world standard' at Victoria's universities. Numerous disciplines rated 'above world standard' at four or more Victorian universities: Optical Physics, Medicinal and Biomolecular Chemistry, Macromolecular and Materials Chemistry, Physical Chemistry (incl. Structural), Environmental Science and Management, Ecology, Zoology, Electrical and Electronic Engineering, Materials Engineering, Clinical Sciences, Human Movement and Sports Science, Neurosciences, Nursing, Medical Physiology, Pharmacology and Pharmaceutical Sciences, Public Health and Health Services, and Psychology.

INSTITUTION	AUSTRALIAN CATHOLIC UNIVERSITY	DEAKIN UNIVERSITY	FEDERATION UNIVERSITY AUSTRALIA	LA TROBE UNIVERSITY	MONASH UNIVERSITY	RMIT UNIVERSITY	SWINBURNE UNIVERSITY OF TECHNOLOGY	UNIVERSITY OF MELBOURNE	VICTORIA UNIVERSITY
Mathematical Sciences									
Mathematical Sciences			●	■	■	■	▲	▲	■
Pure Mathematics			●	■	▲			▲	
Applied Mathematics			▲	●	▲	■	▲	■	■
Numerical and Computational Mathematics						■			
Statistics				■	●	●		▲	
Mathematical Physics								●	
Physical Sciences									
Physical Sciences				▲	▲	▲	▲	▲	
Astronomical and Space Sciences					▲		▲	▲	
Atomic, Molecular, Nuclear, Particle and Plasma Physics					▲		▲	▲	
Condensed Matter Physics				▲	▲			▲	
Optical Physics				▲	▲		▲	▲	
Quantum Physics							■	▲	
Chemical Sciences									
Chemical Sciences		■		▲	▲	■	■	▲	■
Analytical Chemistry		▲		▲	■	▲	■	■	
Inorganic Chemistry				■	▲			▲	
Macromolecular and Materials Chemistry		▲			▲	▲	■	▲	
Medicinal and Biomolecular Chemistry				▲	▲		▲	▲	
Organic Chemistry				●	▲	■		●	
Physical Chemistry (incl. Structural)		▲		■	▲	▲	▲	▲	
Theoretical and Computational Chemistry					▲		■	▲	
Earth Sciences									
Earth Sciences					■			▲	
Atmospheric Sciences					▲			▲	
Geochemistry					▲			▲	
Geology					■			▲	
Physical Geography and Environmental Geoscience					■			▲	

KEY ▲ 'well above world standard' ■ 'above world standard' ● 'at world standard'



Mathematical Sciences

Ensuring pandemic preparedness

Australia now has the necessary policy toolkit to respond to emerging infectious diseases such as influenza, thanks to University of Melbourne researchers.

Pandemics pose a growing threat to human health, but their infrequent occurrence and unique nature make it difficult for governments to develop scalable, flexible response plans.

Using mathematical modelling, statistics and epidemiology, the researchers can now better predict how pandemics will spread and determine what interventions are needed to protect human health.

Their work has directly informed public health policy on a global scale through recommendations to the Australian and Mongolian governments and the World Health Organisation.

Physical Sciences

Bringing the universe to the world

Swinburne's Centre for Astrophysics and Supercomputing is a research group that also produces 3D astronomy animations and films. As part of its commitment to public education and outreach in astronomy, the centre set up a virtual reality theatre and the dedicated non-academic production group, Swinburne Astronomy Productions.

Since 2001, the centre has produced 12 short 3D films, including *Bigger than Big*, which aired on Australian national television, and the award-winning *Hidden Universe*, which was shown at IMAX cinemas across Australia and internationally. In 2015, Swinburne Astronomy Productions received the Astronomical Society of Australia's David Allen Prize for exceptional achievements in astronomy education.

THE UNIVERSITY OF MELBOURNE

SWINBURNE UNIVERSITY OF TECHNOLOGY

INSTITUTION	AUSTRALIAN CATHOLIC UNIVERSITY	DEAKIN UNIVERSITY	FEDERATION UNIVERSITY AUSTRALIA	LA TROBE UNIVERSITY	MONASH UNIVERSITY	RMIT UNIVERSITY	SWINBURNE UNIVERSITY OF TECHNOLOGY	UNIVERSITY OF MELBOURNE	VICTORIA UNIVERSITY
Environmental Sciences									
Environmental Sciences		▲	▲	●	■	■		▲	
Ecological Applications				■				▲	
Environmental Science and Management		▲	▲		▲	▲		▲	
Soil Sciences				▲				▲	
Biological Sciences									
Biological Sciences		■		▲	▲	●	●	▲	■
Biochemistry and Cell Biology		■		▲	■	●		▲	■
Ecology		▲		▲	▲			▲	
Evolutionary Biology		▲			▲			▲	
Genetics				▲	■			▲	
Microbiology				▲	■	▲	■	▲	
Physiology				▲	■			■	
Plant Biology				▲	▲			▲	
Zoology		▲		▲	▲			▲	
Agricultural and Veterinary Sciences									
Agricultural and Veterinary Sciences		▲		▲				■	
Agriculture, Land and Farm Management								■	
Animal Production				▲				▲	
Crop and Pasture Production				▲				■	
Fisheries Sciences		▲						●	
Forestry Sciences								▲	
Veterinary Sciences				▲				■	

KEY ▲ 'well above world standard' ■ 'above world standard' ● 'at world standard'

Environmental Science and Management

Mine rehabilitation in the Latrobe Valley

With the closure of the Hazelwood coal mine in Victoria's Latrobe Valley and the region's move away from coal-fired power generation, mining research in Victoria is increasingly focused on planning for mine closures.

Federation University research into the stability of batters (open-pit mine walls) has been critical for Victorian mines to operate safely and is now being applied to ensure mines will be successfully rehabilitated. Rehabilitation is likely to involve the creation of lakes and wetlands. Geotechnically, a water-filled pit will provide the lowest risk of failure. However, there is a risk of instability as a consequence of re-wetting the depressurised and de-watered coal seam and interseam strata.

The university's Geotechnical and Hydrogeological Engineering Research Group (GHERG) is working with mines across the Latrobe Valley to test the strata for swelling and shrinking. Combined with numeric modelling, this testing will allow researchers to calculate the safety of batters so mines can be successfully rehabilitated.

Federation University

Evolutionary Biology

Capturing carbon emissions in wetlands

Deakin researchers are the first in the world to calculate the carbon stored in Victoria's inland wetlands. They found these wetlands are capturing three million tons of CO_2 each year, worth $6 billion. This represents the annual carbon emissions of 185,000 people – roughly the population of Geelong, Victoria's second most populated city.

This research by Deakin's School of Life and Environmental Sciences increases understanding of how the environment helps regulate greenhouse gas emissions.

The team showed freshwater wetlands can store 20 to 40 times more carbon than dry land forests. Victoria's alpine wetlands hold the highest overall stocks while freshwater sites, like billabongs, stored the most amount of carbon annually.

DEAKIN UNIVERSITY

Biological Sciences

Eliminating mosquito-borne diseases

Monash researchers, as part of the Eliminate Dengue research team and now the World Mosquito Program (WMP), have developed a major international program to reduce the prevalence of mosquito-borne diseases.

The WMP uses naturally occurring Wolbachia bacteria to reduce the transmission of Dengue and other mosquito-borne viruses by Aedes aegypti mosquitoes. By releasing relatively small numbers of mosquitoes that contain Wolbachia, the bacteria are passed from generation to generation of mosquitoes in the field, resulting in the reduced spread of Dengue, Zika and other diseases by the mosquitoes.

To date, the research has resulted in the protection of more than 3 million people across 12 countries.

MONASH University

Agricultural and Veterinary Sciences

Genomics deliver a stronger dairy industry

Innovative genomics research at La Trobe University has improved productivity and sustainability in the Australian dairy industry.

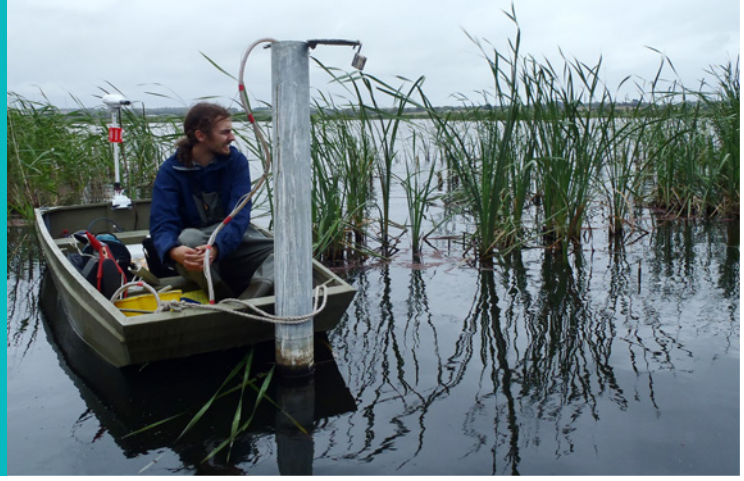
By the end of 2016, Australian dairy was a $13.7 billion farm, manufacturing and export industry providing employment for 38,000 people. However, with ever-rising operating costs and dairy-cow fertility declining dramatically, the growth and sustainability of this critical rural industry was under threat.

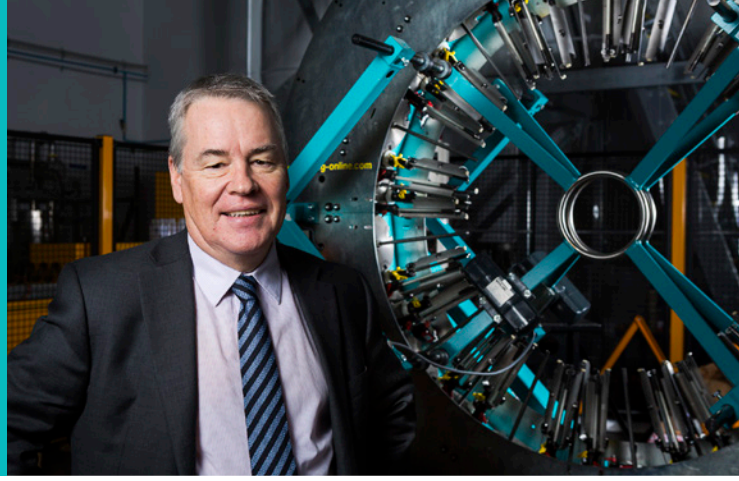
Through innovative genomics research, the DairyFutures Cooperative Research Centre at La Trobe University armed breeders and farmers with the ability to make earlier, better-informed decisions about animal selection for optimal outcomes by radically improving the predictive ability of routine DNA tests and significantly boosting reliability. DairyFutures also led the world in delivering to the industry an estimated breeding value (that is, the genetics a parent transmits to its offspring) that allows farmers to select bulls that can save at least 80kg of feed per cow per year.

LA TROBE
UNIVERSITY • AUSTRALIA

INSTITUTION	AUSTRALIAN CATHOLIC UNIVERSITY	DEAKIN UNIVERSITY	FEDERATION UNIVERSITY AUSTRALIA	LA TROBE UNIVERSITY	MONASH UNIVERSITY	RMIT UNIVERSITY	SWINBURNE UNIVERSITY OF TECHNOLOGY	UNIVERSITY OF MELBOURNE	VICTORIA UNIVERSITY
Information and Computing Sciences									
Information and Computing Sciences		●	●	●	■	●	■	▲	●
Artificial Intelligence and Image Processing		■	■	■	▲	■	■	▲	■
Computation Theory and Mathematics					■				
Computer Software					■		■	■	
Data Format					■	■			
Distributed Computing		■			■	■	●	▲	
Information Systems		●		■	■	●	●	▲	●
Library and Information Studies					■				
Engineering									
Engineering		■		■	▲	■	▲	■	▲
Aerospace Engineering					▲	▲			
Biomedical Engineering					▲	●	■	■	
Chemical Engineering					▲	●		▲	■
Civil Engineering			▲	▲	■	■	■	▲	●
Electrical and Electronic Engineering		▲			▲	▲	▲	▲	▲
Environmental Engineering						▲		●	
Food Sciences						●		●	■
Geomatic Engineering								■	
Manufacturing Engineering		▲			▲	▲			
Maritime Engineering								▲	
Materials Engineering		▲			▲	▲	■	▲	
Mechanical Engineering		■			■	■	■	▲	
Resources Engineering and Extractive Metallurgy								●	
Technology									
Technology		▲			▲		■	■	
Medical Biotechnology					▲				
Communications Technologies							■	▲	
Nanotechnology		▲			▲		■		

KEY ▲ 'well above world standard' ■ 'above world standard' ● 'at world standard'





Civil Engineering

Better water, fewer emissions and lower costs

Federation University has helped optimise Victoria's water supply through a research partnership with a water management authority.

In Western Victoria, Grampians Wimmera Mallee Water (GWMW) was suffering extensive water and energy losses on its inefficient water pipeline system, adding significant costs to the corporation, households and industry. The research partnership between GWMW and Federation University resulted in innovations and improvements across an area of 62,000 square kilometres and 70,000 residents.

The new energy-efficient pipeline system reduced water losses by 103 billion litres a year and significantly cut energy consumption and carbon emissions. By delivering better quality water more efficiently, the water bills of residents and industry were reduced by more than 20 per cent and the security of the water supply was improved.

The research also provided a deeper understanding of the challenges in optimising pipeline systems, which led to the development of an optimisation model that has been rolled out across the entire Victorian water industry.

Materials Engineering

Self-repairing ships are the best line of defence

RMIT researchers have developed spray-on technology for repairing navy ships damaged by fire or missile attack.

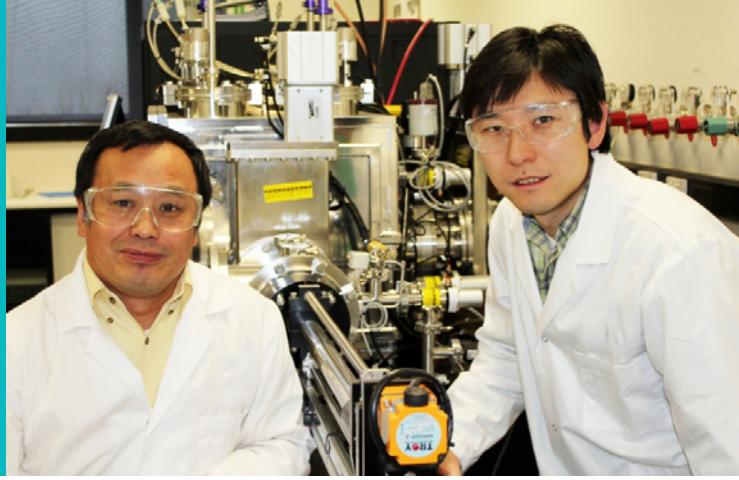
Led by Professor Adrian Mouritz and funded by the Australian Department of Defence and the US Navy, the technology enables ships to repair themselves while at sea.

RMIT is now working with the Commonwealth Scientific and Industrial Research Organisation (CSIRO) to develop a polymer that can be applied to cracked or damaged fibre composite surfaces – repairing them within 10 minutes.

This cost and time-efficient technology can be applied to aircraft, naval ships, wind turbines and other components, enabling immediate repair and reducing the time the ship or equipment is out of action.

Federation University

RMIT UNIVERSITY



Engineering

From smart antenna to smartphone

Modern smartphones perform much faster than their predecessors, thanks in part to Victoria University researchers. A research team, led by Professor Mike Faulkner, paved the way for modern smartphones through their work developing the algorithms that incorporate multiple-antenna (MIMO) Wi-Fi technology. This research helped set the industry standard and all standards since have included MIMO technology.

Victoria University researchers were the first to identify and find a solution to the problem of Doppler shift caused by movement of a wireless terminal. This solution allowed for improved transmission and reception in high-speed moving vehicles. The solution was adopted in Wi-Fi standards, and remains a feature to this day, including cellular fourth and fifth generation (4G, 5G) standards and proposals.

.

Nanotechnology

Cool change in device safety

Computers are getting faster as well as smaller. Yet as they reduce in size they can overheat and even explode.

A team of nanotechnology researchers led by Professor Chen from Deakin's Institute for Frontier Materials is working on how to make smaller devices, including mobile phones, cooler and safer.

The team has investigated different materials and techniques. Its findings have been patented and published in the high-impact journal *Advanced Functional Materials*.

The process of making objects from powder by heating, known as 'sintering', has been a success. Australian Research Council funding has also been received to improve the safety of lithium ion batteries.

VICTORIA UNIVERSITY
MELBOURNE AUSTRALIA

DEAKIN UNIVERSITY

INSTITUTION	AUSTRALIAN CATHOLIC UNIVERSITY	DEAKIN UNIVERSITY	FEDERATION UNIVERSITY AUSTRALIA	LA TROBE UNIVERSITY	MONASH UNIVERSITY	RMIT UNIVERSITY	SWINBURNE UNIVERSITY OF TECHNOLOGY	UNIVERSITY OF MELBOURNE	VICTORIA UNIVERSITY
Medical and Health Sciences									
Medical and Health Sciences	▲	▲	■	■	▲	■	■	▲	■
Medical Biochemistry and Metabolomics					▲			▲	
Cardiovascular Medicine and Haematology	▲			▲	■			■	
Clinical Sciences	▲	▲	▲	●	■	▲	●	▲	
Complementary and Alternative Medicine						▲			
Dentistry								■	
Human Movement and Sports Science	▲	▲	▲	▲	■			▲	▲
Immunology					■			▲	
Medical Microbiology		▲			▲			▲	
Neurosciences		▲		■	▲		▲	▲	
Nursing	▲	▲	▲	▲	■		▲	▲	▲
Nutrition and Dietetics	▲	▲		▲	■			■	●
Oncology and Carcinogenesis				■	▲			▲	
Ophthalmology and Optometry								■	
Paediatrics and Reproductive Medicine		▲			■			▲	
Pharmacology and Pharmaceutical Sciences		▲			▲	▲		▲	
Medical Physiology		▲			▲	▲	▲	■	▲
Public Health and Health Services	▲	▲			■	●	▲	▲	▲
Other Medical and Health Sciences		■		▲					
Built Environment and Design									
Built Environment and Design					●	■	●	■	
Architecture		●			●	■		■	
Building						■		●	
Design Practice and Management					●	●	●		
Urban and Regional Planning						■	■	▲	

KEY ▲ 'well above world standard' ■ 'above world standard' ● 'at world standard'

Medical Physiology

The gut-brain connection in autism

RMIT researchers have discovered that the same gene mutations – found in both the gut and the brain – may be causing gut problems for people with autism.

Led by RMIT's Associate Professor Elisa Hill-Yardin, the discovery confirms a gut-brain nervous system link in autism.

The international research collaboration includes the University of Gothenburg, Lund University, Baylor College of Medicine, University of Minho, La Trobe University, the University of Melbourne, Florey Institute of Neuroscience and Mental Health and Monash University.

This research opens new gut-targeted treatment opportunities to ease autism-related behavioural issues, including dietary and pharmaceutical interventions.

The research team has identified a potential drug target that might improve gut symptoms in people with autism that have similar gene mutations. It is also working to define bacteria populations that could be added to the gut microbiome, possibly in the form of an edible tablet, to positively impact mood and behaviour.

RMIT UNIVERSITY

Clinical Sciences

Improving dental health with Recaldent™

Tooth decay is the world's most prevalent oral disease. Recaldent™ reverses early tooth decay using a protein from cow's milk.

Developed by University of Melbourne researchers, Recaldent™ is used by oral care, food and beverage companies worldwide in products such as chewing gum, tooth mousse and orthodontic cement. These products are sold in more than 50 countries, have exceeded $2 billion in sales and are used by millions of people every day.

As well as improving quality of life, Recaldent™ is reducing the economic burden of tooth decay, saving an estimated $12 billion in dental treatment costs to date.

Image courtesy of the Oral Health CRC. Used with permission.

THE UNIVERSITY OF MELBOURNE

Human Movement and Sports Science

Turning back time on diabetes

Researchers at Australian Catholic University (ACU) are working with an international team to understand how restoring the body's circadian rhythms, through lifestyle interventions, can reduce the incidence of metabolic diseases such as type 2 diabetes.

Lack of exercise, eating at all hours and poor sleep habits all disturb normal circadian biology – the physical, mental and behavioural changes that follow the daily cycle – and contribute to several metabolic diseases. Researchers in the Exercise and Nutrition Research Program at ACU's Mary MacKillop Institute for Health Research are part of the international team, led by the University of Copenhagen, with collaborators from Karolinska Institute and University of California Irvine.

Taking a 'bench to bedside' approach, the research will identify effective, practical and time efficient fitness and nutrition interventions that can be implemented to prevent insulin resistance and type 2 diabetes.

ACU
AUSTRALIAN CATHOLIC UNIVERSITY

Nursing

The benefits of dedicated midwife care

La Trobe University has led an Australian-first trial – the largest of its kind in the world – demonstrating how one-on-one midwife care reduces caesarean section rates during childbirth and improves health outcomes for babies.

The *Comparing Standard Maternity Care with One-to-One Midwifery Support* randomised trial compared the caseload midwifery model (where a dedicated midwife provides the continuity of one-on-one care during the pregnancy and birth) with standard maternity care (where a woman may see a number of midwives during her pregnancy). The trial showed the caseload model resulted in a 22 per cent reduction in the proportion of women requiring caesarean section, and a reduction in the proportion of babies requiring admission to a special care nursery.

Following this trial, the caseload midwifery model is increasingly available, with data showing it is now available in 31 per cent of Australian public hospitals that responded to a large national survey. The model highlights that trust, as well as a sustained relationship between the midwife and the woman giving birth, are critical to positive birth outcomes.

LA TROBE
UNIVERSITY • AUSTRALIA

Public Health and Health Services

Shoe insoles make great strides in falls prevention

Shoe insoles designed at Victoria University to prevent costly and common falls among the elderly were judged the world's most innovative new care product at *The Globals* (seniors innovation and care awards) in 2018 for a second consecutive year.

Dr Hanatsu Nagano developed the insoles to address a worldwide concern that one in three elderly people suffer injurious falls each year.

The insoles are designed with a series of raised bumps that follow a foot's ideal centre of pressure to help with side-to-side balance, a shock-absorbing contoured heel, and a forefront that helps increase minimum toe clearance – the reason for many trips and falls.

VICTORIA UNIVERSITY
MELBOURNE AUSTRALIA

Specialist Studies in Education

Lifting the status of the teaching profession

Developed by researchers from the Institute for Learning Sciences and Teacher Education at Australian Catholic University, the Graduate Teacher Performance Assessment provides a new and rigorous benchmark for measuring teacher readiness for the classroom.

The longitudinal research program brings together a consortium of 14 universities across six states and territories, peak bodies and regulatory authorities, education unions, and international partners. The program uses rigorous design principles and implementation of evidence-based approaches to validation, standard setting and moderation at a level not seen previously in teacher education in Australia.

The national impact of this research will continue to produce outcomes with real applications in the classroom, in direct response to an identified policy need.

ACU
AUSTRALIAN CATHOLIC UNIVERSITY

INSTITUTION	AUSTRALIAN CATHOLIC UNIVERSITY	DEAKIN UNIVERSITY	FEDERATION UNIVERSITY AUSTRALIA	LA TROBE UNIVERSITY	MONASH UNIVERSITY	RMIT UNIVERSITY	SWINBURNE UNIVERSITY OF TECHNOLOGY	UNIVERSITY OF MELBOURNE	VICTORIA UNIVERSITY
Education									
Education	■	■		●	■	●	●	▲	●
Education Systems	●	■	●		■	●		■	
Curriculum and Pedagogy	■	●			■			▲	
Specialist Studies in Education	▲	■		●	■		●	■	●
Economics									
Economics		■		●	▲	●	●	▲	
Economic Theory		■			▲			▲	
Applied Economics		●		●	▲	●	●	▲	
Econometrics		■			▲			▲	
Commerce, Management, Tourism and Services									
Commerce, Management, Tourism and Services		■		●	■	●	●	▲	
Accounting, Auditing and Accountability		■		●	■			▲	
Banking, Finance and Investment		■		▲	■	●		▲	
Business and Management	●	■		●	■		●	▲	
Commercial Services		●							
Marketing		■			▲	●	●	▲	
Tourism				●	●				●
Transportation and Freight Services						●			
Studies in Human Society									
Studies in Human Society	●	●	●	●	■	●	●	■	●
Anthropology				●	●			●	
Criminology		●			▲			●	
Human Geography								▲	
Policy and Administration				●		●		■	●
Political Science	●	●		●	■	●		■	
Social Work				■	●			■	
Sociology	●	■	●	●	■	●	●	▲	●
Other Studies in Human Society									●

KEY ▲ 'well above world standard' ■ 'above world standard' ● 'at world standard'

Psychology and Cognitive Sciences

Mental health help

Swinburne psychology researchers developed and now deliver a free online therapy and mental health information service called Mental Health Online (mentalhealthonline.org.au). The service was the first in Australia to offer an online self-assessment tool for people with mental health concerns. It also offers free online therapy, as well as training and resources for healthcare practitioners.

The service uses research by Swinburne's Department of Psychological Sciences, and was developed with the National eTherapy Centre, Swinburne Centre for Mental Health and Swinburne Psychology Clinic. Since 2009, Mental Health Online has supported tens of thousands of people and is reaching people who would not otherwise receive mental health advice or support.

Applied Ethics

Leading global health policy

Researchers at the Monash Bioethics Centre are impacting global health policy through a leading role as a designated World Health Organization (WHO) Collaborating Centre for Bioethics.

Led by Professor Michael Selgelid, the Centre's work with the WHO delivers policy-oriented research, focused on the ethical issues related to infectious disease research. In 2017, researchers at Monash worked in a global network of WHO Collaborating Centres for Bioethics to produce international guidelines for health surveillance, informing the ethical gathering and analysis of data for public health purposes.

Professor Selgelid's work has informed policy adopted by the WHO and the US Government, in response to public health emergencies such as the Ebola and Zika viruses. He produced a white paper for the US National Science Advisory Board for Biosecurity, developing a framework to guide funding decisions for ethical research.

SWINBURNE UNIVERSITY OF TECHNOLOGY

MONASH University

INSTITUTION	AUSTRALIAN CATHOLIC UNIVERSITY	DEAKIN UNIVERSITY	FEDERATION UNIVERSITY AUSTRALIA	LA TROBE UNIVERSITY	MONASH UNIVERSITY	RMIT UNIVERSITY	SWINBURNE UNIVERSITY OF TECHNOLOGY	UNIVERSITY OF MELBOURNE	VICTORIA UNIVERSITY	UNIVERSITY OF DIVINITY
Psychology and Cognitive Sciences										
Psychology and Cognitive Sciences	▲	▲	●	▲	▲	●	▲	▲	●	
Psychology	▲	▲	●	▲	■	■	▲	▲		
Cognitive Sciences	▲				▲					
Other Psychology and Cognitive Sciences		▲								
Law and Legal Studies										
Law and Legal Studies	●	■		■	■	●	●	▲		
Law	●	●		■	■	●	●	▲		
Studies in Creative Arts and Writing										
Studies in Creative Arts and Writing		●		●	■	●	●	■		
Art Theory and Criticism					●			●		
Film, Television and Digital Media					■	●	■	■		
Journalism and Professional Writing				●						
Performing Arts and Creative Writing				●	■	●	●	■		
Visual Arts and Crafts					▲	■		■		
Language, Communication and Culture										
Language, Communication and Culture		●		■	■	■	●	▲		
Communication and Media Studies		■			■	▲	■	■		
Cultural Studies				●	■	■		■	●	
Language Studies								●		
Linguistics				■	●			■		
Literary Studies		●		●	▲			■		
History and Archaeology										
History and Archaeology	●	●		■	▲			■		
Archaeology				■	■			●		
Curatorial and Related Studies		■								
Historical Studies	●	●	●	■	▲			▲		
Philosophy and Religious Studies										
Philosophy and Religious Studies	■	●		●	▲			■		
Applied Ethics					▲			■		
History and Philosophy of Specific Fields					■			●		
Philosophy	■	■		●	▲			■		
Religion and Religious Studies	■	●			●					●

KEY ▲ 'well above world standard' ■ 'above world standard' ● 'at world standard'

KEY CONTACTS AT VICTORIAN UNIVERSITIES

Australian Catholic University
Pro Vice-Chancellor, Research
Phone: +61 2 9739 2435
Email: pvc.research@acu.edu.au
Web: acu.edu.au

Deakin University
Pro-Vice Chancellor (International)
Phone: +61 3 9244 5270
Email: john.molony@deakin.edu.au
Web: deakin.edu.au

Federation University Australia
Office of the Deputy Vice-Chancellor, Research and Innovation
Phone: +61 3 5327 9745
Email: dvc.research@federation.edu.au
Web: federation.edu.au

La Trobe University
Executive Director, Research Office
Phone: +61 3 9479 1144
Email: researchoffice@latrobe.edu.au
Web: latrobe.edu.au/researchers

Monash University
Director, Global Initiatives
Phone: +61 3 9905 2094
Email: joanna.donagan@monash.edu
Web: monash.edu

RMIT University
Office of the Deputy Vice-Chancellor, Research and Innovation
Phone: +61 3 9925 2260
Email: dvcr@rmit.edu.au
Web: rmit.edu.au

Swinburne University of Technology
Director, Swinburne International
Phone: +61 3 9214 5234
Email: vpifs@swin.edu.au
Web: swinburne.edu.au/global

University of Divinity
Office of the Vice-Chancellor
Phone: +61 3 9853 3177
Email: enquiries@divinity.edu.au
Web: divinity.edu.au

University of Melbourne
Chancellery, Research and Enterprise
Email: dvc-research@unimelb.edu.au
Web: unimelb.edu.au/research

Victoria University
Deputy Vice-Chancellor, Research
Phone: +61 3 9919 2025
Email: vasso.apostolopoulos@vu.edu.au
Web: vu.edu.au/research

VICTORIA
State Government Australia

DJPR12578_1019