GRADUATE RESEARCH STUDIES

DOCTOR OF PHILOSOPHY (PhD)
PROFESSIONAL DOCTORATES
MASTERS BY RESEARCH
Beyond its standing as Australia’s centre for culture, food and fashion, Melbourne combines a growing international reputation as an ideas and innovation hub with outstanding research facilities.

Melbourne is increasingly known as a global ideas and innovation capital for the 21st century. The city is the location of the Australian Synchrotron, a facility that has inspired a new era of scientific inquiry, especially in biotechnology and medical research. Melbourne became UNESCO’s second city of literature in 2008, acknowledged for its extraordinary diversity in literary activity and the vibrancy of its creative industries. Other fields identified as key knowledge industries in Melbourne are advanced manufacturing, design and information and communication technology.

Melbourne was rated the world’s 5th best student city in 2017 as part of the Quacquarelli Symonds (QS) Best Student City Rankings for its quality of life, employer activity and student mix. The city has also held the title of World’s Most Liveable City, as ranked by the Economist Intelligence Unit (EIU), for the past six years. Melbourne is full of all the attractions that make the Australian lifestyle so appealing – beautiful beaches, cultural events, international sporting events, good food, and fine weather.

Multicultural Melbourne is home to 4.8 million people from over 180 countries across the world. With students from more than 100 countries, Victoria University is among Australia’s most culturally diverse institutions.

Once you complete a research degree at Victoria University, you will have acquired a world-class qualification with skills that employers globally recognise and reward.
Innovation has become a catchcry across the world, but it is a concept that Victoria University has long embraced and championed.

I’m proud that Victoria University’s dedication to high-quality research and research training continues to significantly impact industry, government and the community, as demonstrated by the many projects and programs profiled in this Graduate Research Studies publication.

Proudly based in Melbourne’s west and CBD, we have a global vision that leads us into areas of enquiry of international significance. Under the banner of our flagship areas of: Sport, Health and Active Living and Sustainable Industries and Liveable Cities, research from across the University and a range of academic disciplines is drawn together on topics such as sustainable environments, climate change, community wellbeing and health.

Victoria University is recognised by the influential Times Higher Education Rankings (2016-2017) as one of the top 2% of universities worldwide. We’re also delighted to be ranked 56 in the world’s top universities aged under 50 in the Times Higher Education Young University Rankings 2017. Our positioning in these definitive rankings is a fitting and formidable acknowledgement that our excellence in graduate research training is recognised in Australia and internationally.

We actively contribute to the development of our graduate researchers and research supervisors who are a culturally diverse cohort from countries including Indonesia, China, Malaysia, Saudi Arabia, Colombia and East Timor.

The breadth of the researcher development opportunities we offer supports our graduate researchers to be equipped for successful academic and research careers, and for a range of other exciting and challenging professions in industry, government and the community. Analytical and problem-solving capabilities, such as those nurtured through graduate research training, are highly valued.

We continue to be innovative in our approaches to graduate researcher training. We have recently:

• introduced a new pathway to attaining a PhD via our cutting-edge PhD (Integrated). This degree is designed for those who wish to pursue a program of graduate research study at the highest level, have limited or no research experience but strong academic performance in masters by coursework programs
• developed and launched VU MyPlan which enables graduate researchers to design, implement and document their professional development while undertaking a graduate research degree.

Our performance in graduate research training is of the highest level. We possess an impressive reputation for excellence in applied and translational research but we never forget that the aim of our research is to have real-world impact so individuals, communities and industry can harness their full potential. I hope you’ll find that goal very apparent in our approach to research and graduate research training at VU.

We look forward to discussing your research goals and working with you as a graduate researcher at Victoria University.

PROFESSOR WARREN PAYNE
PRO VICE-CHANCELLOR,
RESEARCH AND RESEARCH TRAINING VICTORIA UNIVERSITY
THE VU DIFFERENCE

At Victoria University we strive to make a real difference by harnessing the strength, breadth and depth of our research to solve real-world problems.

Our research goes beyond getting published — our focus is on shaping a healthier, smarter and more sustainable society.

OUR FLAGSHIP AREAS

VU is renowned for its two research flagship areas:

• Sport, Health and Active Living
• Sustainable Industries and Liveable Cities

Within each flagship area are underlying research themes and key research areas where synergies between disciplines occur. This cross-disciplinary approach allows us to offer expertise across diverse areas, meaning you will continually develop new knowledge, and more opportunities will be opened in your industry and community.

VU’s dynamic research environment is supported by our collaborations with industry, business, government, not-for-profit organisations, the community, and other universities and researchers.

We have comprehensive research expertise and technologies that can be utilised by organisations to enhance their competitive advantage in commercial endeavours.

We are partners and founders in a diverse range of research centres, institutes and groups that offer specialised research, consultancy and tailored learning opportunities for graduate researchers. With over 150 industry connections, including the Australian Sports Commission, National Drug Research Institute, and Western Health, over 180 industry-based research projects were conducted last year alone.

Our research centres and institutes include:

• Institute of Sport, Exercise and Active Living
• Institute for Sustainability and Innovation
• The Victoria Institute for Education, Diversity and Lifelong Learning
• Victoria Institute of Strategic Economic Studies
• Mitchell Institute for Health and Education Policy
• Centre for Applied Informatics
• Centre for Chronic Disease Prevention and Management
• Centre for Cultural Diversity and Wellbeing
• Centre for Environmental Safety and Risk Engineering
• Centre for International Research on Education Systems
• Centre of Policy Studies.

VU is proudly ranked in the world’s Top 400 universities (Times Higher Education World University Rankings 2016-2017). VU also ranked 56 in the world’s top universities aged under 50 in the Times Higher Education Young University Rankings 2017. This outstanding acknowledgement firmly positions VU as a high-quality and stakeholder-valued research organisation and exceptional training ground. To find out more about VU’s world rankings see page 9.

EXCELLENCE IN RESEARCH

At Victoria University we provide quality research training and undertake specialised and cross-disciplinary research. In 2015, the Australian Research Council awarded Victoria University with the following:

★★★★★

WELL ABOVE WORLD STANDARD

• electrical and electronic engineering
• human movement and sports science
• nursing

★★★★

ABOVE WORLD STANDARD

• mathematical sciences
• applied mathematics
• engineering
• mechanical engineering

★★

WORLD STANDARD

• artificial intelligence and image processing
• distributed computing
• information systems
• specialist studies in education
• tourism
• language communication and culture
• cultural studies
MORE THAN A RESEARCH DEGREE

We support our graduate researchers by providing services, facilities and training they need to emerge as ethical, independent and respected researchers.

TRANSFERABLE SKILLS AND EMPLOYABILITY

Our graduate researchers have varying career aspirations, and while many are employed as academics, many others find employment in industry, government, and the private and not-for-profit sectors.

Undertaking a research degree enables you to develop the critical thinking, problem-solving, and communication skills that are highly attractive to prospective employers.

MyVU Plan is our web-based platform which allows you to document your professional development activities during the course of your graduate research degree — highlighting your high-level knowledge, skills and abilities. Your MyVU Plan assists you to identify the areas you need to focus on to realise your career aspirations and to position yourself as a career-ready researcher.

We recognise the critical importance of writing well as a graduate researcher. In addition to workshops, research writing circles and a coursework unit in English language, you can access individual assistance to enhance your communication and research writing skills.

Bring along your own research writing, such as proposals, literature reviews, research articles and thesis chapters, and receive helpful advice and resources from qualified academics and editors.

AWARD-WINNING SUPERVISORS

Many Victoria University research supervisors are internationally-recognised scholars in their fields, dedicated to providing a high-quality experience for research students. Our graduate researchers report high satisfaction with the quality research supervision and research training we provide.

RESEARCH AMBASSADORS

Our graduate research students can benefit from hands-on, supportive advice and assistance provided by Victoria University’s Research Ambassadors. The Ambassadors are experienced later-year graduate researchers employed by the Graduate Research Centre who work in the University’s research lounges.

Victoria University’s Research Ambassadors share their skills and provide a peer perspective as students navigate the world of research. They familiarise you with specialist computer packages, referencing and information management, quantitative and qualitative research design, data analysis and presentation, or simply act as a sounding board for ideas and questions. If they don’t know the answer, they’ll help you find someone who does.
Several PhD scholarship students from Victoria University work closely with the 2016 AFL Premiers, the Western Bulldogs Football Club and with the Western Bulldogs AFL Women’s team to help continuous performance improvement on the field.

Subhan Iswahyudi (Indonesia) is researching ethical leadership in business-to-business marketing.

OUR GRADUATE RESEARCHERS

VU SCHOLARSHIP RECIPIENTS WORKING WITH THE 2016 AFL PREMIERS, THE WESTERN BULLDOGS

Victoria University’s leading sports scientists are helping 2016 AFL Premiers, the Western Bulldogs Football Club continue to improve their game. Five PhD scholarship students each have their own specialist research areas to investigate with the Western Bulldogs:

- Nathan Pitchford is investigating the effect of sleep on player recovery
- Sam McIntosh is evaluating decision-making in management of player lists
- Emily Cust is looking at applications of inertial measurement units worn by the Western Bulldogs AFL Women’s team allowing for objective feedback to be obtained on kicking practice volume, resulting in targeted coaching and medical support
- Bart Spencer is investigating use of technology and data to inform on-field tactics
- David Corbett is integrating skill and physiological data to better understand training and match demands

Chris Maple, Western Bulldogs’ General Manager, Football, says the club is reaping numerous benefits from its involvement in this type of bespoke and integrated research.

“We’re using GPS and other player monitoring tools to understand the impact of our total preparation on players in training, in games and other areas,” Chris said. “It helps us manage players in the optimal way on and off the field so they can perform consistently for us.”

BUILDING A BRIGHTER, MORE ETHICAL FUTURE FOR BUSINESS

After 10 years in various marketing roles, Subhan Iswahyudi was awarded a scholarship from Telkom Indonesia to pursue a professional doctoral degree. He chose Victoria University for its reputation, unique mix of subjects and research opportunities. Subhan is conducting research on ethical leadership in business-to-business marketing, and uses interviews and online surveys as his data collection techniques.

Subhan has seized opportunities at Victoria University to broaden his expertise and share his knowledge with peers, as well as academics. While undertaking his Doctor of Business Administration (DBA) in the College of Business, Subhan has been part of Victoria University’s Research Ambassador Program. Through the program, Subhan works in the VU library consulting on specific areas of research such as bibliographic management, survey design and data analysis.
Sarah Oxford conducted six months of ethnographic research in Colombia, exploring whether young women’s participation in sports programs influenced gender relations.

In 2014, Jean Hopman presented her preliminary findings on the emotional experience of teachers in the workplace as part of the national Three Minute Thesis (3MT) competition for graduate researchers.

In 2015, Subhan volunteered to be part of the graduate researchers’ working group to conduct a study on supervision and intellectual climate. Subhan and fellow graduate researchers composed a report and presented it to the College of Business senior leadership team and the Graduate Research Centre. Subhan’s involvement in the working group was recognized by a 2016 Student Leadership Award in the category of Victoria University Spirit Team.

“Currently I’m finishing up my studies and am anticipating a future assignment as the head of the Leadership Development Centre at Telkom Corporate University. At Victoria University, I have become a skillful researcher and plan to use my knowledge to showcase improved leadership practices in Indonesia,” Subhan said.

Find out more about our international scholarship schemes: vu.edu.au/international-scholarships

RESEARCHING SOCIAL CHANGE THROUGH SPORT
Sarah Oxford, PhD candidate in Victoria University’s Institute of Sport, Exercise and Active Living, is exploring the extent sport may be a catalyst for empowering girls.

Her research investigates youth sports programs operating in marginalised Colombian communities where participation of girls in male-dominated sports and leisure activities, such as soccer, is considered a social taboo.

Sarah conducted six months of ethnographic research in Colombia. Through interviews and observations she explored the extent young women’s participation in sports programs shapes or constrains gender relations.

Through fieldwork with a Sport for Development and Peace (SDP) organisation and engagement with international and local development agencies, Sarah’s research aims to improve current methods of promoting gender equity in sport.

Sarah is also the founder and board member of Breaking Ground, a non-governmental organisation (NGO) that partners with Cameroonians to achieve lasting solutions by investing in local knowledge, empowering women and promoting economic development.

EXPLORING EMOTIONS OF TEACHERS TODAY
Jean Hopman is a qualified teacher with a background in psychotherapy. Her doctoral research draws on practices and theories from education and psychology with her research aimed at better understanding the emotions teachers experience in their workplaces.

As part of her doctoral research in the College of Arts and Education, Jean worked with a group of teachers to explore the emotional work inherent in teacher practice. She collated stories to capture the teachers’ emotional experiences that are set within a complex professional environment — bound by limitations, expectations and assumptions all mediated through relationships.

In 2014, Jean presented her preliminary findings as part of the national competition for graduate researchers, the Three Minute Thesis (3MT), where she was Victoria University’s winner. She went on to compete in the national finals in Western Australia and in 2015 helped other students to develop their presentation skills for subsequent 3MT competitions.

As Jean is nearing the completion of her research, she is disseminating her findings — connecting to the teaching profession, government and other stakeholders — to enhance the experiences of teachers and ultimately students in schools.
NEW PATHWAYS TO A DOCTOR OF PHILOSOPHY: PHD (INTEGRATED)

Victoria University’s new doctoral research program provides you with the opportunity to become a PhD candidate, even if you have not previously undertaken research training.

The PhD (Integrated) includes opportunities for the development of research, generic and transferable skills through participation in both formal and informal learning.

Victoria University’s pioneering program is designed to support and assist you in your PhD studies, with intensive research training and a minor thesis comprising key components in the first year of your studies, providing a strong foundation for subsequent years.

Doctor of Philosophy graduates will demonstrate a scholarly and enquiring mind, and strong capabilities in:

• research conceptualisation and design including reviewing of literature
• marshalling and critical analysis of data and evidence
• conceptual innovation in order to make a significant new contribution to knowledge and society
• deep disciplinary immersion and broad interdisciplinary literacy, including methodological literacy.

Upon meeting the hurdle requirement (70% average across the Year 1 coursework units and 70% in the Year 1 thesis), students will plan for and conduct further original research in their field in Years 2 to 4.

This will lead to the presentation of a doctoral thesis within the normal four-year maximum period for the award of Doctor of Philosophy.

There is a broadening range of career options for PhD graduates within the university and research sectors, as well as in government and industry roles with an emphasis on high level research and analytical skills.

Entry requirements for the PhD (Integrated) include completion of a masters undertaken entirely by coursework with a minimum H2A/Distinction (above 70% VU standard) or equivalent.

All applicants must meet the English language proficiency requirements for postgraduate courses. If you meet the academic requirements for a course, but not the English language requirements, you may be offered a place at VU English in an intensive course that will help you work towards achieving the English level required.

If you have completed a qualification in which English was the primary language of instruction, you may be eligible for an English language exemption.

To download our Guide to English Language Requirements visit: vu.edu.au/study-at-vu/how-to-apply/international-applicants/entry-requirements

DEMYSTIFYING THE THESIS

Victoria University supervisor and researcher, Professor Ron Adams, takes the stress out of writing a thesis with his award-winning program ‘Demystifying the Thesis’.

The series of intensive workshops empowers graduate researchers with the understanding, tools and confidence to become independent researchers. It has proved so successful it has spread to other universities in Australia and has been delivered in Indonesia, Thailand, East Timor, Hong Kong, Oman, Colombia, Fiji and Papua New Guinea.

Professor Ron Adams has been delivering the four-part workshop for more than six years. The workshops range from a three-day intensive through to a live-in writing retreat with time for relaxation and reflection.

“The retreat doesn’t offer a blueprint for writing a thesis but rather an opportunity for thesis-writers to push themselves to explore their own creative depths in a supportive environment,” Professor Adams said.

The program won the national Australian Learning and Teaching Council Award for Postgraduate Education.
PURSUING A PASSION

Davina Taylor pursued her passion for research thanks to new pathways opened up with Victoria University’s PhD (Integrated).

What motivated you to undertake a doctoral degree?
For many years, I considered embarking on a PhD program. I didn’t previously have the confidence to pursue such a journey as I had no formal research education. I had been involved in research projects within my workplace and was an active member of the ethics panel at work. These experiences sparked my interest and passion for research.

I had originally applied for a masters by research, even though I had previously completed a masters by coursework. It was this application process that highlighted to me a PhD (Integrated) pathway may suit my needs.

What will be the focus of your research?
I plan to explore the experience of childbirth pain of women from multicultural backgrounds. I hope that this study will provide educators and clinicians with a better understanding of how women are preparing for and managing the pain of childbirth.

What challenges did you face returning to study?
The challenge for the first year of the program came with balancing the commitment of full-time study, part-time work and being a mother of two young children. Having not studied for over 20 years, the contact hours required in the first semester was at first overwhelming but became enjoyable once I formed a routine.

I enjoyed the contact with other students and developed friendships that I believe will continue throughout my PhD journey and beyond.

How well do you think you’ve overcome those challenges?
Having just completed the first year of the PhD (Integrated), I feel confident to embark on a major research project. The first year of the program was well supported by the course structure, the subject coordinators, guest lecturers and fellow students.

Why would you recommend studying a PhD at Victoria University?
The coursework aided in articulating my project aims and developing a foundation for further research study. The research subject coordinators provided exceptional guidance and support. They displayed a genuine interest in all the students’ projects and their passion for research was palpable.

Victoria University is proud to be ranked 56 in the world’s top universities aged under 50 in the Times Higher Education Young University Rankings 2017.

The list showcases the world’s top 200 young universities for teaching, research, and international engagement.

Now in its sixth year, the category acknowledges world-class universities aged under 50 that have made a “big impact on the world stage in years rather than centuries,” World University Rankings Editor Phil Baty said.

For nearly five decades, the highly-regarded Times Higher Education organisation has provided rankings in various categories of universities around the world.

Victoria University Vice-Chancellor Professor Peter Dawkins said this breakthrough into its relatively new ranking of top young universities confirms Victoria University’s commitment to its local and international reputation as an open, excellent, and dynamic university.

“Our first-ever appearance in the Young University Rankings highlights our unwavering commitment to continuous improvement, with a strong focus on cross-disciplinary research and enriching the student experience.”

While Victoria University formally became a university only 26 years ago, it has a long and celebrated history dating back more than 100 years as an education provider in Melbourne’s west.

Victoria University was also named among the world’s top 400 universities in the Times Higher Education World University Rankings 2016–17. This places it in the top two per cent of universities worldwide.
OUR FLAGSHIP AREAS

SPORT, HEALTH AND ACTIVE LIVING

Our research in the flagship area of Sport, Health and Active Living is internationally recognised for providing real-world solutions to real-world problems.

As Leaders in Sport with a $68m Sport and Learning Precinct and 40 sport-related courses, Victoria University has a proven track record of delivering research programs that shape healthier communities. Our groundbreaking research achievements include:

• the world’s first comprehensive study into the effects of high altitude on soccer performance
• Health Tracker by Area — a digital platform that reveals the health of Australia’s suburbs and towns
• GPS monitoring to develop tactical training for professional rugby team, the Melbourne Storm
• measuring the link between elite tennis players’ mental skills on court and their performance
• a world-first study into the effects of falls on elderly osteoarthritis patients
• research into the use of immunotherapy to stop the progression of multiple sclerosis.

Our position as Leaders in Sport is demonstrated in the latest (2015) Excellence in Research for Australia assessments. Victoria University achieved the highest rating of 5 (well above world standard) in human movement and sports science.

RESEARCH PROGRAMS

Within the flagship area of Sport, Health and Active Living, key research themes have the potential to overlap. This cross-disciplinary approach to research means you will continually expand your knowledge in a diverse range of areas — opening more opportunities to work in industry and community.

HEALTH & BIOMEDICINE

Our research program focuses on medical physiology, pharmacology and pharmaceutical sciences, nursing, metabolism and inflammation in health and disease. It includes studies in areas as diverse as immunology and cancer, mental health and substance misuse, and complementary medicine.

SPORT SCIENCE

The sport science research program seeks to enhance sporting performance by advancing the understanding of athlete preparation and performance. We currently have two dedicated sports scientists embedded full-time at the Western Bulldogs Football Club.

SPORT IN SOCIETY

The program unifies humanities and social science research disciplines to gain a deeper understanding of sport in Australia and internationally. Victorian University and partners Netball Victoria are currently working on a major project documenting the history of netball in Australia.
ACTIVE LIVING AND PUBLIC HEALTH
The program aims to improve the health and wellbeing of populations by analysing information and conducting evidence-based interventions for the promotion of active living.

CLINICAL EXERCISE SCIENCE
The program translates basic science discoveries into patient-centred therapeutics and explores mechanisms that limit clinical outcomes, function and quality of life. The metabolic function research group is investigating epigenetics as a potential cause of insulin resistance in Polycystic Ovary Syndrome sufferers.

RESEARCH PARTNERS
Our researchers actively partner and work closely with industry networks and world-leading researchers, placing you at the heart of the industry you are passionate about.

We have more than 50 strategic partnerships and collaborations with internationally recognised industry and community organisations including:

- Western Health
- Turning Point Alcohol and Drug Centre
- 2016 AFL Premiers the Western Bulldogs Football Club
- Real Madrid Graduate School Universidad Europea
- Netball Victoria and the Melbourne Vixens
- Tennis Australia
- Commonwealth Scientific and Industrial Research Organisation (CSIRO)
- The Australian Sports Commission
- The Australian Institute of Sport
- The Sport Australia Hall of Fame.

As part of his PhD at Victoria University, researcher Dr Hanatsu Nagano has developed special shoe insoles to prevent costly and common stumbles among the elderly.

Worldwide, one-in-three elderly people experience injurious falls annually, but the problem is particularly serious in Japan where one-quarter of the population, or 35 million people, are over 65.

“I wanted to make a social contribution to this very big problem by offering a product that is affordable, and can be easily made and used,” Dr Nagano said.

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.

Human trials with partner University of Tsukuba in Japan have proved the insoles dramatically reduce falls among the elderly, as well as with tripping-prone hospital patients suffering from conditions such as dementia, osteoarthritis, or knee surgery.

Over a recent six-month trial, Dr Nagano found nearly 40 elderly people wearing the insoles did not fall at all. And only one of 12 insole-wearing hospital patients suffered a fall over a four-month period compared to three falls for a control group of a similar size who were not wearing them.

Dr Nagano estimates that his invention could save 36.5 billion Yen (or close to AUD$500 million) in direct medical costs in Japan for every one per cent decrease in incidents of trips and falls.

Dr Nagano said he initially designed the insoles for the elderly, but he expects to further refine them for other users, including joggers and walkers.

Victoria University has an international patent on the injury-reduction insoles. Dr Nagano’s company, Global Bridge, is now working with Japanese fashion manufacturer and retailer, Caitac Family, to commercialise them.

Dr Hanatsu Nagano is a postdoctoral research fellow specialising in biomechanics at Victoria University’s Institute for Sport, Exercise and Active Living (ISEAL). His research supervisor is Professor Rezaul Begg, leader of Victoria University’s assistive technologies research.
TRUSTING YOUR GUT

Victoria University PhD candidate, Amy Wallis, is working with sufferers of chronic fatigue syndrome on research that could transform their lives. Her research, which is part of a larger program, is focusing on an investigation into links between gut bacteria and the brain in Myalgic Encephalomyelitis.

This major study at Victoria University is helping uncover how the gut is involved in health and disease and how gut dysfunction can affect the brain.

“The treatment pathways for people diagnosed with this condition are really unclear. Often they jump from doctor to doctor and eventually after 10 years end up with a diagnosis. It can take that long,” Amy said.

Amy, along with a team of other researchers, is performing a clinical trial on 40 patients to establish whether a treatment to alter gut bacteria impacts sleep, mood and cognitive symptoms.

“We are looking from the angle of dysfunction in the gut — what we call gut dysbiosis. This is the imbalance of bacteria in the bowel and colon. It’s been proposed this imbalance in gut bacteria may lead to systemic inflammation and impairment of the immune system.

This is a multidisciplinary project. As psychologists at VU, we are particularly interested in the role that gut bacteria can play in the brain. Gut bacteria produce neurotransmitters, like serotonin and dopamine, and other more toxic substances.”

Bioscreen is the industry partner and CFS Discovery Clinic is the sponsor of the trial.

BUILDING HEALTHIER COMMUNITIES

Wealthier postcodes are healthier postcodes, reveals a study by Victoria University.

A digital platform from Victoria University, Australia’s Health Tracker by Area reveals that West Australians have low rates of high blood pressure (9.3%) while Tasmania’s blood pressure is soaring (12.1% have high blood pressure).

Australia’s Health Tracker by Area is developed by the Australian Health Policy Collaboration at Victoria University with the Public Health Information and Development Unit at Torrens University.

Available to media, health professionals, policy makers and academics, the digital platform hosts a series of maps and filters which provide localised data on chronic diseases and their risk factors at the local government, primary health network, population and state level.

It includes obesity, high blood pressure, cancer screening, early deaths by chronic disease and suicide rates.

Many health and non-health organisations have welcomed the new resource which has been created to enhance the use of health data for planning, commissioning and monitoring, with the potential to shape policy at a local, state and federal level.

“One in every two Australians has a chronic disease — however roughly one third of these diseases are preventable. Australia’s Health Tracker by Area is a call to action and a resource to help protect the most important asset in the country — our health.”

DR ROSEMARY CALDER
Director
Australian Health Policy Collaboration
Victoria University
LINKING MENTAL AGILITY TO ON-COURT PERFORMANCE

Victoria University researchers are behind one of the largest quantitative studies ever undertaken to measure the link between an elite tennis player’s mental skills on court and their performance.

Led by Dr Stephanie Kovalchik, research fellow at Victoria University’s Institute of Sport, Exercise and Active Living (ISEAL), researchers analysed three million points in almost 20,000 singles matches played by 858 tennis players on the professional world tour between 2011 and 2015.

Using an analysis of the outcome of every point in tens of thousands of professional matches, Dr Kovalchik’s team assessed how each player’s performance varied depending on the game situation. This enabled them to identify the mental skills and mental profiles that characterised the most successful players.

Funded by a $2 million co-investment research partnership with Victoria University, ISEAL and Tennis Australia, this ground-breaking research is designed to improve the tactics and decision-making of Australian tennis players, coaches and their supporting sports science staff.

Data analysis in sport is growing rapidly and its growth presents huge opportunities for researchers. This type of analysis has application not only in tennis but also in other sports where there’s a large pool of data.

Interested in undertaking research in this area? If you have a related undergraduate or masters degree, contact apply.research@vu.edu.au

To find out more about completing your research qualification at Victoria University as an international student, visit vu.edu.au/international

STOPPING THE BODY’S SELF-DESTRUCTION

Human trials of a breakthrough therapy could slow or even stop the progression of multiple sclerosis.

Professor Vasso Apostolopoulos from the Centre for Chronic Disease within Victoria University’s College of Health & Biomedicine, teamed up with leading Greek researchers to work on what could be a ground-breaking treatment for multiple sclerosis (MS), an incurable disease affecting 2.5 million people around the world.

In collaboration with the University of Patras (Greece), Professor John Matsoukas, his team and the Greek pharmaceutical company Vianex SA, Professor Apostolopoulos has developed a therapy that stops the body’s immune cells from destroying the nervous system.

The team has designed a method of delivering peptides – chains of amino acids or proteins – which alter the autoimmune T cells attacking the nervous system.

Though the process of delivery is similar to a vaccine, Professor Apostolopoulos says the correct term is ‘immunotherapy’ – a treatment that relies on using the body’s own immune system to fight disease.

“MS is a slow progressive disease. Eventually most people become paralysed. If you can stop that from happening they can live a normal life.”

Professor Apostolopoulos says she is confident going into human trials because the immunotherapeutic treatment has successfully intercepted MS in previous tests in the laboratory and in animal models of MS.

For more information on Victoria University’s quality research training, visit vu.edu.au/research

Professor Apostolopoulos has helped develop a breakthrough treatment for MS.
Work with industry and community to drive global change when you undertake research in our flagship area of Sustainable Industries and Liveable Cities.

With a strong focus on applied research, our research activities strive to find evidence-based solutions to important contemporary challenges in Australia and across the world.

Our research promotes and enables sustainable outcomes for industry and the community, based on environmental and innovative technologies. We provide industry and community solutions in water treatment technology, resource management, asset management, social and behavioural research, environment, e-research, smart energy, alternative energy and packaging.

We also place special emphasis on our translational research. As a graduate researcher, you will turn knowledge, information and insights into usable policies, programs and strategies to improve communities and broader society.

**RESEARCH PROGRAMS**

Our research takes a multi-disciplinary approach, which allows us to offer expertise across diverse areas.

**SUSTAINABILITY AND INNOVATION**

Our research in this area focuses on managing increasing and competing demands for resources, and the development of sustainable environments and technologies globally including sustainability and climate change, water management, green construction and engineering.

**DIVERSITY AND COMMUNITIES**

Through research, we strive to not only empower individuals and communities to meet challenges associated with social, cultural and economic inequality, but also to inform government policy and community development. Research areas include community health and wellbeing, cultural diversity and indigenous culture and communities.

**ECONOMICS AND FINANCE**

Our research in this area informs policy and provides an understanding of the causes and consequences of economic, technological and social change globally. Research focus areas include labour market growth and development, social economics and the issues of poverty, education and human capital.

**EDUCATION AND LIFELONG LEARNING**

Research conducted at Victoria University provides innovative and practical approaches to the consideration of local and global educational issues. Research focus areas include early childhood education, social inclusion, problem-based learning, and the economics of education.

**RESEARCH PARTNERS**

Victoria University has a strong focus on collaborative partnerships with community organisations, government and industry.

Our research partnerships focus on knowledge sharing and inform government policy and community development across the globe.

Our collaboration partners include:

- China Energy Research Institute
- CSIRO
- Fire Protection Research Foundation (USA)
- Universidad de La Sabana (Columbia)
- Victorian Transport Association
- Water Research Australia
- Western Bulldogs
- World Health Organisation (WHO).
The Wildland Urban Interface Fire Dynamics Simulator is the face of tomorrow’s world.

Researchers at Victoria University have been working on a computer model that will provide firefighters with a blueprint of how to beat fire.

The Wildland Urban Interface Fire Dynamics Simulator absorbs facts and figures including temperature, humidity, wind speed, the characteristics of the terrain, whether it is flat or undulating, and then provides firefighters with a blueprint of how to beat a fire.

While a computer model with the capability to provide solutions still belongs to tomorrow, the team has made huge advances for today.

According to Associate Professor Khalid Moinuddin, who is leading the research, the yield from the work to date has already boosted our capability to build homes and schools in bush locations that could be better and more safely defended from fires.

Fire agencies currently use what is known as “operational models” in their battles with fire. However, these models are limited in scope and are not representative of the most destructive blazes.

“If the wind speed was this, the temperature was that, it could then be extrapolated that the fire front would move at this speed.

The problem is that even with 200 to 300 experiments on which to model their fight, the scenario fire agencies face might not fall within those experiments,” Associate Professor Moinuddin said.

Associate Professor Moinuddin’s new research is concentrating on a physics-based model that is founded on basic fire dynamics and corresponding differential equations to simulate bushfire scenarios.

This knowledge can be used to decide the best site for infrastructure like power lines, roads and bridges. The technology can also provide post-fire analyses and the lessons learned can be carried into new fire seasons.

The Bushfires and National Hazards Co-Operative Research Centre decided to fund the research project, also involving the University of Melbourne.
One of Australia’s most influential Aboriginal activists, Professor Gary Foley, has developed a major archive of Indigenous historical material.

Housed at Victoria University, the fully catalogued and indexed collection is considered one of the most comprehensive Indigenous history resources in the world.

Aptly named the ‘Foley Collection’, the online component of the archive contains a record of papers, photographs, posters, reports and newspaper articles collected over the past 45 years.

The physical collection includes almost 500,000 items documenting decades of Aboriginal activism.

As his collection moves to a digital platform, Professor Foley emphasises that an accessible online archive will illuminate Aboriginal self-determination hidden in existing public histories. It can also improve public awareness, educational curricula and public policy responses for the political, legal, health and social position of Australia’s Indigenous communities.

“The teaching of Australian history is still to this day in most universities and high schools superficial, nonsensical and wrong. Most Australians don’t know their own history, let alone the history I’m talking about,” Professor Foley said.

In Professor Foley’s view, a well-resourced archive has a crucial role in strengthening the resilience of Aboriginal people, building leadership capabilities within Indigenous communities and in transforming race relations for the future of all Australians.

This project is supported by the Australian National Data Service (ANDS). ANDS is supported by the Australian Government through the National Collaborative Research Infrastructure Strategy Program.

To view the Foley Collection visit vu.edu.au/library

LISA BELLEAR INDIGENOUS RESEARCH SCHOLARSHIP

In honour of the late Indigenous poet Lisa Bellear, Victoria University, in conjunction with the Moondani Balluk Indigenous Academic Unit, offer one PhD scholarship per year in her name. The scholarship is open to all promising Indigenous Australian researchers wishing to undertake a graduate research degree. Applications are open to candidates who:

- meet the minimum academic entry requirements for a graduate research degree at Victoria University
- are of Aboriginal or Torres Strait Islander descent.

Lisa was a friend, colleague and staunch supporter of the Moondani Balluk Indigenous Academic Unit. Her skills and expertise are carried on through the Victoria University graduates who she taught and mentored in the Bachelor of Education/Arts (Nyerna Studies) program.
As part of our Indigenous Strategy, Victoria University is pleased to support Indigenous researchers through the Lisa Bellear Indigenous Research Scholarship. Visit vu.edu.au/research-scholarships.

STUDENT PROFILE – PAOLA BALLA

Contemplating a PhD is not an easy decision. Until recently, current Victoria University student Paola Balla wasn’t sure if she was ready to start the journey. With the support and encouragement of Victoria University’s Moondani Balluk Indigenous Academic Unit Director, Karen Jackson, Professor Gary Foley and the late Lisa Bellear, Paola not only developed the confidence to apply for her PhD but also became the first recipient of the Lisa Bellear Indigenous Postgraduate Research Scholarship.

“Lisa Bellear was one of my lecturers and someone I very much admired. Lisa encouraged me and countless others to go further through education. Karen Jackson encouraged me to apply for the scholarship and because it was named after Lisa, I felt a strong connection to it and it made me want to apply,” Paola said.

Since completing her undergraduate degree, Paola has worked as a lecturer at Moondani Balluk, worked in human rights education and was a senior curator on the ‘First Peoples’ exhibition at Melbourne Museum. She is a practicing artist and established the Indigenous Cultural Program at Footscray Community Arts Centre.

Paola plans to continue her research into the ways in which Aboriginal women artists disrupt and speak back to colonisation both in contemporary art and Australia in general.

Through her research, Paola continues her journey to give back to the Indigenous community and make gains into the bigger picture of sovereignty, treaty, land and cultural rights as human rights through the arts and education.

“I got here through hard work, but also the support of my family, husband and Victoria University’s Moondani Balluk community. I strive to continue to create change for, and with our people,” Paola said.

“Too do something to give back to the community makes me really excited. I work really hard to maintain a high standard with my work and share and explain the art history and knowledge that I already have.”

Paola credits the Moondani Balluk staff for making her feel safer about doing her PhD. She recognises the opportunity she has been given as the first recipient of the Lisa Bellear Indigenous Research Scholarship and wants nothing more than to make Lisa proud.
MAKING EVERY DROP COUNT: MEET THE GRADUATE RESEARCHERS

A new approach to recycling waste water promises big energy savings and a win for the environment.

The research team at Victoria University’s Institute for Sustainability and Innovation has been working on technology, known as membrane distillation, which can be used to recover water and resources from industrial waste. Its selling point is it uses hardly any electricity and saves huge amounts of water. Tests are underway on its efficacy in the mining, manufacturing and food industries.

The essence of the technology is that it works by blocking salty waste water from passing through a thin plastic membrane. As it is water repellent and contains very small pores in the order of a tenth of a micrometre, clean water vapour passes through the membrane and is collected as desalinated liquid water on the other side.

The Institute for Sustainability and Innovation within the College of Engineering and Science host a talented team of graduate research students who are supporting the project.

IKECHUKWU ANTHONY IKE
The fate of a civilisation is very much connected to its water-energy nexus. Water is life. And so is energy.

From a bachelor and masters degree in petroleum engineering — focused on efficient energy production and processing — to a doctoral degree in chemical engineering centred on innovative water treatment, Ikechukwu is optimistic his vision of making a holistic contribution to society is firmly on course.

ANBHARASI VANANGAMUDI
Anbharasi Vanangamudi is a recipient of the prestigious Victoria India Doctoral Scholarship (VIDS). She is pursuing her PhD degree in membrane technology at the Institute for Sustainability and Innovation.

With a bachelor degree in biotechnology, master degree in biochemical engineering and five years of work experience in membrane modifications for water treatment, Anbharasi has combined knowledge on bio and chemical-based research related to membrane technology. This drove her to conduct research and explore in the same area that gives food for her thoughts.

DIGBY WREDE
Global warming is a problem that will continue to grow unless the planet significantly reduces its need for energy. Enhancement of water treatment methods in terms of reduced energy use and enhanced nutrient removal is vital for wastewater services to approach and achieve carbon neutrality.

From a bachelor and honours degree in biological science to currently undertaking a doctoral degree in environmental engineering centred on wastewater treatment, Digby is confident his work will help inform design criteria for low-energy algal treatment of wastewater in the future.
Since arriving at Victoria University from Beijing in 2010 to embark on her PhD, Dr Catherine Xiaocui Lou has enjoyed success both as a research student and now as respected academic and PhD supervisor in the College of Business.

During her PhD, Catherine was awarded the Postgraduate International Student of the Year by Victoria State in 2013 and the Victoria University Outstanding Student Alumni Award in 2015.

As well as conducting globally significant research into supply chain management and corporate governance using mathematical modelling, Dr Lou has published a number of journal articles and conference articles and engaged joint research in her areas of expertise: supply chain optimisation, risk management, logistics system design, operations management, green tourism, and optimisation modelling.

Upon completion of her PhD in 2015, Catherine joined Victoria University as a Lecturer in supply chain and logistics, and as a Research Associate at the Victoria Institute of Strategic Economic Studies.

In her additional role as Project Manager at the Victoria Business Confucius Institute (VBCI), Dr Lou initiated and led the Australian Youth Entrepreneurship and Innovation Program to China in 2016.

“The research culture at the Centre for Strategic Economic Studies and support from across the University certainly helped my success along the way,” Dr Lou said.

Dr Lou also enjoys her role supervising graduate researchers. “Research students are passionate and creative thinkers. I’m pleased to support students in developing their independent research skills and achieving innovative results.”
Victoria University researchers work with academic institutions, government, industry and business – locally and globally. Our institutes and centres provide unique opportunities for cross-disciplinary research and knowledge exchange.

INSTITUTES

- Institute of Sport, Exercise and Active Living (ISEAL)
  ISEAL’s research is led by a team of internationally-recognised professors and more than 200 other researchers, supported by the most comprehensive range of sport and exercise science facilities in the southern hemisphere. Its research spans human development to high performance sport.

- Institute for Sustainability and Innovation (ISI)
  ISI provides innovative and sustainable technologies for industry and the community in areas including water treatment, resource management, alternative energy, packaging and the environment.

- The Victoria Institute for Education, Diversity and Lifelong Learning
  The Institute works with teachers, communities and policy makers to improve educational experiences, particularly for students from diverse and disadvantaged backgrounds.

- Mitchell Institute for Health and Education Policy
  The Mitchell Institute is an independent think-tank that aims to make a positive contribution to the quality of health and education policy and ultimately, the social and economic prosperity of Australia.

- Victoria Institute for Strategic Economic Studies
  The Institute undertakes research using sophisticated economic modelling to analyse key policy decisions of private and public sector clients.

RESEARCH CENTRES

- Centre for Applied Informatics
- Centre for Chronic Disease Prevention and Management
- Centre for Cultural Diversity and Wellbeing
- Centre for Environmental Safety and Risk Engineering
- Centre for International Research on Education Systems
- Centre of Policy Studies

CENTRE OF POLICY STUDIES (CoPS)

Researchers at CoPS have a 40-year record of success in the development, application and distribution of large-scale economic models. These models and software are used globally to analyse a range of economic issues. CoPS’ clients include: private firms and universities in many parts of the world; government agencies such as finance and trade ministries in a number of countries, including Australia, the US and China; and international development organisations.

Project for the REDD Implementation Centre, Ministry of Forests, Government of Nepal

This project modelled ongoing deforestation in Nepal, with forests being converted into farmland, and asked whether a REDD (reducing emissions from deforestation and forest degradation) payment from abroad would compensate Nepal for a reduction in such conversion.

The report concluded that if payments to Nepal were based solely on emissions reduction, a high CO2 price would be needed to recompense.
Our specialised research facilities contain modern equipment and technology to support your study. We are one of just seven Australian universities to receive a top five-star rating from the Council of Australian Postgraduate Associations for our research facilities and infrastructure.

Altitude hotel
Simulated high-altitude living environment designed for research focused on the impacts of reduced oxygen on a range of physiological indicators.

Biomechanics labs
Equipped to perform technique analysis and research into mechanical factors affecting human movement in sport including gait analysis and biomechanics teaching.

Water research laboratory
Offers a fully equipped fluid mechanics and hydraulics laboratory incorporating pluviometers, flowmeters and water quality monitoring equipment. Researchers also have access to a range of hydrological and water resources computer software packages, including GIS and REALM.

Sleep laboratory
A two-bedroom laboratory equipped with three systems for sleep recordings and software for staging and scoring sleep studies. Researchers have access to sophisticated devices to measure sleep and performance, including Respironics Actiware watches and software and SleepImage cardiopulmonary coupling devices for assessing sleep stability.

Health research and education facilities
The five-storey Western Centre for Health Research and Education, built at Sunshine Hospital in partnership with Western Health and the University of Melbourne, provides current and future healthcare professionals with cutting-edge education, research and training.

Fire testing facilities
Includes fire-test furnaces, a four-storey building scale model, cone calorimeter and 3MW calorimeter, and an ISO room for applications in fire safety engineering.

INSTITUTE OF SPORT, EXERCISE AND ACTIVE LIVING (ISEAL)

Our $68 million Sport and Learning Precinct houses the most comprehensive range of sport and exercise science facilities in the southern hemisphere. The precinct meets international standards for best practice and is designed with multiple, integrated space to facilitate interdisciplinary research and learning.
A GRADUATE RESEARCH DEGREE
FOR NOW AND INTO THE FUTURE

There are a number of pathways to obtain a research degree. At Victoria University our suite of research degrees have been developed to recognise diversity in educational backgrounds, research skills, professional experience and career aspirations.

<table>
<thead>
<tr>
<th>Entry requirements</th>
<th>DOCTOR OF PHILOSOPHY (PHD)</th>
<th>DOCTOR OF PHILOSOPHY (INTEGRATED)</th>
<th>PROFESSIONAL DOCTORATES</th>
<th>MASTERS BY RESEARCH</th>
</tr>
</thead>
<tbody>
<tr>
<td>One of the following:</td>
<td>masters by coursework degree, with minor thesis, with average grades of at least H2A/Distinction (above 70% VU standard) OR</td>
<td>Masters by coursework degree in the relevant discipline, with average grades of at least H2A/Distinction (above 70% VU standard), plus related professional experience to the sector/industry. Some research experience may be required depending on the field of study</td>
<td>A bachelor degree with average grades in the final year of at least H2A/Distinction (above 70% VU standard) and/or approved professional experience</td>
<td></td>
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<tr>
<td>Research experience required</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Professional experience required</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Duration</td>
<td>Four years full time or eight years part time</td>
<td>Four years full time or eight years part time</td>
<td>Three years full time or six years part time</td>
<td>Two years full time or four years part time</td>
</tr>
<tr>
<td>Course structure</td>
<td>Two coursework units in Semester One and concurrent independent doctoral research</td>
<td>Five coursework units within Year One and a Year One Thesis (12,000 words). After successful completion of Year One, students continue to undertake their independent doctoral research which incorporates their Year One research</td>
<td>After successful completion of related coursework, students continue in the degree by undertaking their independent professional doctorate research</td>
<td>Students undertake independent research at the masters Level</td>
</tr>
<tr>
<td>Thesis component</td>
<td>60,000 to 100,000 words</td>
<td>60,000 to 100,000 words</td>
<td>45,000 to 60,000 words</td>
<td>30,000 to 60,000 words</td>
</tr>
<tr>
<td>Fields</td>
<td>• arts and education  • business  • engineering and science  • health and biomedicine  • law and justice  • sports and exercise science</td>
<td>• arts and education  • business  • engineering and science  • health and biomedicine  • law and justice  • sports and exercise science</td>
<td>• business.</td>
<td>• arts and education  • business  • engineering and science  • health and biomedicine  • law and justice  • sports and exercise science</td>
</tr>
<tr>
<td>Graduate outcomes</td>
<td>Independent, competent and highly sought-after researchers, equipped to pursue a career in academic, industry, community or government relevant to field of study where advanced intellectual and applied knowledge and skills are required</td>
<td>Senior business executive/specialists, or academic/research positions requiring advanced business and research skills</td>
<td>Management positions in industry or government and researcher positions with universities conducting research</td>
<td></td>
</tr>
</tbody>
</table>
The completion rate for VU research degrees is among the highest in Australia due to our quality research supervision and the comprehensive research training we provide.

We offer a range of research degrees suitable for those who have completed an honours or masters program or equivalent, to those with little to no prior research experience. Once you’ve decided on the right research degree for you, go to vu.edu.au/apply-research to complete your application.

**HOW TO APPLY – DOMESTIC STUDENTS**

1. Select a degree
2. Meet minimum academic entry requirements
3. Identify a supervisor (and align your research interests with VU’s research focus areas)
4. Prepare your research proposal
5. Submit your application, including two written references
6. Enrolment and commencement

To study at VU as an international student, you can apply directly to the university (either online or in person) or through an education agent. To find an agent in your country visit eaams.vu.eu.au/BrowseAgents.aspx

**SCHOLARSHIPS**

We have a generous scholarship scheme open to both domestic and international students wishing to undertake a higher degree by research. Our scholarship offerings are designed to meet the needs of our research by higher degree candidates and can cover the costs of tuition fees, health cover (for international candidates) and a stipend for living expenses.

While our scholarship scheme is competitive and attracts some of the brightest candidates from within Australia and overseas, it also supports recipients from diverse backgrounds to undertake high quality/high impact research in our flagship areas.

Scholarship applicants are also considered for Victoria University’s peak scholarship: the Vice-Chancellor’s Postgraduate Research Scholarship. In 2016, we introduced the Lisa Bellear Indigenous Research Scholarship to support an Indigenous candidate to undertake a higher degree by research. In addition, we have a range of scholarships that are partnered with industry collaborators.

Victoria University has long-standing arrangements with many international sponsorship programs in which we collaborate in knowledge-sharing and capacity-building. Many countries including China, Colombia, Malaysia, Indonesia, Vietnam and Saudi Arabia offer scholarships, while the Australian Government provides Australia Award scholarships to students from developing countries. Our Colleges, Research Centres and Institutes also offer scholarships that are linked to their research programs.

To find out more about the scholarships available and eligibility requirements, please visit our website.

International students: vu.edu.au/international-scholarships
Domestic students: vu.edu.au/scholarships
GRADUATE RESEARCH CENTRE

Victoria University’s Graduate Research Centre is a one-stop shop for comprehensive support through all stages of your graduate research candidature – from choosing your supervisor to scholarships to planning your career.

Australian applicants:
+61 3 9919 4522
or gradresearch@vu.edu.au

International applicants:
+61 3 9919 1164
or international@vu.edu.au

vu.edu.au/research

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CRICOS Provider No. 02495D (Sydney)
RTO Code: 3113