

2023 Annual Report

Research and Impact





Victoria University acknowledges, recognises and respects the Ancestors, Elders and families of the Bunurong/Boonwurrung, Wadawurrung and Wurundjeri/Woiwurrung of the Kulin who are the traditional owners of University land in Victoria, the Gadigal and Guring-gai of the Eora Nation who are the traditional owners of University land in Sydney, and the Yugara/Yugarapul people and Turrbal people living in Meanjin (Brisbane).



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Executive summary



It is a pleasure to present the Annual Report for VU's Research and Impact portfolio for 2023. This report aims to give a high level snapshot of our research capacity, performance, and impact in 2023 across key metrics. It also serves to provide an overview of 2023 achievements and developments across the Research and Impact portfolio at VU.

The year 2023 marked the first year of implementation of the [VU Research and Impact Plan, 2023-2028](#) which was launched at the end of 2022. The plan aligned with the University's *Strategic Plan 2022-2028: Start well, finish brilliantly*, and reflects our aspirations to create positive global change through research with impact. This continues a long-standing, mission-based commitment to applied and translational research. Underpinning the commitment to take our impact further than ever before is the VU Real-World Researcher with attributes vital to the research with impact approach.

To support the new strategy and research plan, we completed an organisational restructure of VU Research in early 2023. This was the first structural review since its establishment over 5 years ago. The organisational redesign program delivered new changes to the structure and function of the Research and Impact portfolio.

At the end of 2022 we completed the VU RISE projects which were funded by the Victorian Higher Education State Investment Fund, a two year program which provided \$22 million of funding to VU in 2021 and 2022. Our total research income in 2023 was \$19.7 million which is a strong result. While our competitive grant income declined slightly in 2023, our engagement income remained over \$4 million higher than in 2021.

Through the improvements in our grant preparation processes led by Research Services in 2023 we saw an increase in success with Australian Research Council (ARC) funding schemes, for which we had no grants awarded in 2022 and only one in 2021.

In 2023 our successes included three Discovery Project grants, one DECRA, one Future Fellowship, one Linkage Grant, and an Early-Career Industry Fellowship.

VU improved in the Times Higher Education (THE) World University rankings in 2023, regaining the loss of the previous year. VU was also ranked 101-150 in the THE Young Universities Ranking and 101-200 overall in the THE Impact Rankings. In the Shanghai Subject Rankings, VU was ranked equal 7th in the world for Sport Science.

As we continue implementing the Research and Impact Plan, a focus has been to align our research with the five key thematic areas of Health, Sport, and Wellness; First Nations Knowledge; New Generation Skills and Workforce Impact; Green Research Translation; and New Frontiers in Policy, Advocacy, and Justice. Our redesigned Annual Report will feature outcomes against each of these themes.

We are proud of our achievements in 2023 and look forward to continuing to grow our portfolio's output of impactful research and bringing greater exposure and recognition to our areas of expertise.

Professor Andy Hill
Deputy Vice-Chancellor,
Research and Impact

2023 Research and Impact snapshot



Research capacity

225

researchers

428

Higher Degree
by Research (HDR)
students



Our rankings

- ◆ **#7** for sport science (Shanghai Global Rankings)
- ◆ **Times Higher Education (THE) Impact Rankings**
 - ◆ **19th** for Clean Water and Sanitation (SDG6)
 - ◆ **38th** for Reduced Inequalities (SDG10)
 - ◆ **73rd** for Climate Action (SDG13)
- ◆ **70th** – THE Young University Rankings



Total research income

\$19.7 million



826

research publications



Academic Impact (CNCI)

1.36 (publications cited 36% above the world average)



56%

(462) publications with

international collaborators

across **115** countries



253

policy citations of

VU research across

12

UN Sustainable

Development Goal areas



Research conducted across

all **7** VU campuses

About research at VU

In 2023, VU researchers once again displayed their innovation, collegiality, and resilience, particularly as the broader university experienced financial challenges and some difficult decisions.

The heightened levels of conflict and crisis around the world during the year emphasised the importance of research. From social justice and gender equity to sustainability, sport, education and health, our researchers continue to focus on maximising research with impact to address the challenges of people, place, and planet.

Our Purpose

VU emboldens its people to design their future and has a deep commitment to protecting Country.

Our Vision

To be a global leader in dual-sector learning and research by 2028.

Strategic Drivers

To achieve our vision, VU has identified five strategic drivers.

“VU research is crucial, it is applied, and it has an internationalism and diversity unlike any other university I have ever worked at.”

Professor Adam Shoemaker
Vice-Chancellor, VU



The [VU Strategic Plan 2022 – 2028: ‘Start well, finish brilliantly’](#) sets a strategic driver of ‘Maximising Research with Impact’ in order to achieve the strong vision of ‘becoming a global leader in dual-sector learning and research by 2028’. The [VU Research and Impact Plan 2023 – 2028](#) articulates how we will deliver this.

The University’s Strategic Plan has identified five key thematic areas in which we aim to be world-leading. They give us focus, purpose, and reflect who we are and the impact we want to have on the world.

1. Health, sport and wellness

Interdisciplinary approaches to transform health, sport, social inclusion and community wellbeing, in particular building on core strengths in translational health research by leveraging key assets such as the co-location with the new Footscray Hospital.

2. First Nations knowledge

Connecting the deep knowledge, insights, and perspectives of Aboriginal and Torres Strait Islander Peoples to solve contemporary challenges.

3. New generation skills and workforce impact

Creating solutions for developing the skills of the future to impact advanced manufacturing and service industries.

4. Green research translation

Developing translational sustainable solutions to challenges in the natural environment.

5. New frontiers in policy, advocacy and justice

Improving education, health, law, social inclusion and the economy by developing policy and thought leadership locally, nationally, and internationally.

Our Researchers

Research with impact requires an experienced and dedicated research community. The VU Real-World Researcher is fundamental to creating a research environment that empowers our people. We embrace what makes our researchers unique – the VU Real-World Researcher captures the attributes that are vital to our approach to research with impact, and the way in which we work.

The VU Real-World Researcher is:

- **Authentically connected** – developing meaningful partnerships at the local, national, and international levels.
- **Creative** – bringing bold innovative solutions and embracing multidisciplinary and novel approaches to research.
- **Adaptable** – responds to change, capitalises on opportunities, and uses a proactive approach to identify future issues and address complex problems.
- **Passionate** – connects to societal issues and provides mentorship and leadership to build researcher capability at all levels.
- **Ethical** – operating with integrity and adhering to the highest level of ethical standards.

“As a global solutions hub based in the west of Melbourne, our research addresses some of the most significant problems of our time and aligns with the United Nations Sustainable Development Goals. We leverage and develop existing and new partnerships to deliver on our impact agenda, and continue to deliver value to the communities we serve, and the world.”

Professor Andy Hill
Deputy Vice-Chancellor,
Research and Impact



Health, sport and wellness

During the year there were many examples of research that is transforming health, sport, social inclusion and community wellbeing. Here are some highlights.

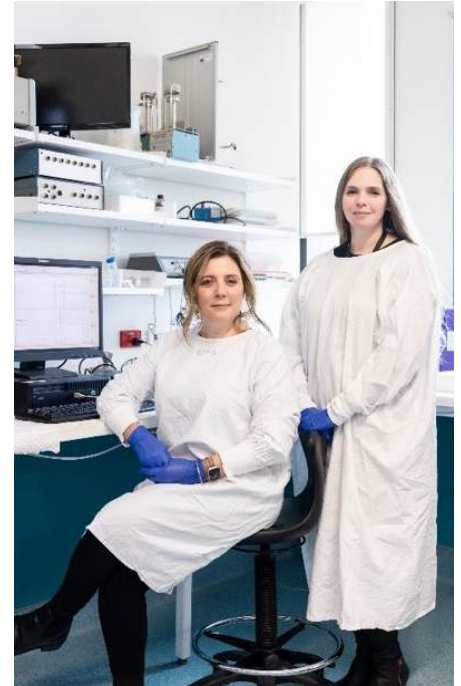
Muscular dystrophy research

Duchenne muscular dystrophy is a rare, inherited neuromuscular disease where boys' muscles degrade to the extent that movement, heart and breathing functions are ultimately lost. Medicines capable of treating aspects of the complex disease biology underlying Duchenne are urgently needed to slow its progression and support the efficacy of emerging gene replacement therapies.

VU's Institute for Health and Sport (IHES) researchers Associate Professor Emma Rybalka, Dr Cara Timpani and PhD student, Stephanie Kourakis, are tackling this problem by repurposing a multiple sclerosis drug to target Duchenne muscles.

The team showed short-term treatment using dimethyl fumarate improved the quality, function and energetics of dystrophic muscles in their recent [JCI Insight](#) paper and that the drug dramatically reduces fibrosis of leg and heart muscle when used in the moderate term.

"We are actively working with our Swiss clinical collaborators and global pharmaceutical giant, Biogen, to ensure this drug reaches patients as quickly as possible should our long-term study show disease modifying benefit as predicted. We are striving for high level impact by creating new and improved treatment options for Duchenne patients", said research group leader Associate Professor Emma Rybalka.



Associate Professor Emma Rybalka and Dr Cara Timpani.

Train Smart Study

Dementia is one of the greatest global challenges for health and social care in the 21st century. Almost half a million Australians are currently living with dementia, and the number is predicted to triple by 2050.

In collaboration with the Florey Institute, Dr James Broatch and team from IHES recently completed data collection for a Medical Research Future Fund (MRFF)



Participants in the Train Smart Study.

clinical trial entitled ‘The Train Smart Study’.

The Train Smart Study aims to discover how different ‘doses’ of aerobic exercise training affects brain blood flow, age-related brain shrinkage and cognitive function, and to translate this new knowledge into more individualised exercise prescriptions to reduce dementia risk.

Some of the most important determinants of dementia risk are related to cardiovascular risk factors, including hypertension, diabetes, obesity, and physical inactivity.

“These factors can compromise the health of tiny blood vessels in the brain, ultimately contributing to an increased risk of cognitive decline. Exercise promotes increased blood flow to the brain, which helps maintain the health of the vessels and can reduce the risk of neurodegeneration”, said lead investigator Dr Broatch.

Dissemination of outcomes will commence in the second half of 2024.



Associate Professor Fiona McLachlan.

Change Makers: Preventing gender-based violence through community football (soccer)

In partnership with Football Victoria and Regional Sport Victoria, IHES researchers Associate Professor Fiona McLachlan, Professor Brent McDonald and Dr Jeffrey Bishara were funded through the Victorian State Government’s *Preventing Violence*

through Sport scheme to design and deliver a primary prevention program to embed gender equity and facilitate cultural change within soccer clubs.

The team’s model takes a unique approach by working directly with club leaders and providing them with tools and hands-on support to critically reflect on their culture and environment before guiding them to design actions for change. In 2023, they facilitated 16 workshops and supported 31 clubs from metropolitan and regional Victoria through the process. Clubs have found the process confronting but valuable.

“Through the delivery of Change Makers, we are learning a lot about the processes of change and resistance in community sport. We have found that the clubs that are more critical tend to have safer and more inclusive cultures. This is a significant finding because gender equity and safety training generally skips this crucial step of critical reflection. We look forward to being able to share these findings at the conclusion of the project.”, said lead researcher, Associate Professor Fiona McLachlan.

FIND OUT MORE

Collaboration celebrations

VU and Western Bulldogs Sons of the West Men’s Health Program: Engaging CALD communities

After a successful pilot study in 2020-22, the VU and Western Bulldogs Community Foundation partnership for *Promoting Health and Active Living: Innovation in Targeting CALD Communities* was awarded a major *Scaling What Works* grant from the Movember Foundation.

The aims for the two-year *Scaling What Works* project are to: Deliver Sons of the West (SOTW) place-based health promotion programs for target CALD communities in Melbourne’s West, that reflect cultural and community values; and Inform CALD Engagement Guidelines for future SOTW programs.

Year one has been successfully completed, with four SOTW programs designed and delivered to 139 men (115 participated



Professor Camilla Brockett and Western Bulldogs Community Foundation staff with Sons of the West program participants.

in the program evaluation). The findings described immediate-term positive outcomes in areas of physical activity, health behaviours, mental wellbeing, confidence and empowerment, and connection to community, and good levels of program acceptability and suitability for participants from CALD backgrounds.

“VU is committed to creating stronger, healthier and more resilient communities”, lead researcher, Professor Camilla Brockett said. “The impact of this research is new, evidence-based knowledge to maximise engagement and benefit in fit-for-purpose community health programs for priority community groups.”

Health, sport and wellness

VU and Western Bulldogs sports science partnership

IHES researchers are also conducting a project in conjunction with the Western Bulldogs AFLW team, investigating the impact menstrual cycles and contraceptive use has on measures of performance in elite athletes. The project is being undertaken by PhD candidate, Hannah Dower, and her supervisory team.

Hannah and the team are hoping to understand the influence of the entire menstrual cycle experience on performance outcomes in AFLW athletes, which will inform the direction of menstrual and contraceptive management in field team-based sports like AFLW.

VU and Cyberdyne Research Partnership in Neurological and Musculoskeletal Rehabilitation

The Gait and Intelligent Technologies research group within IHES has established a strategic research partnership with world-leading Japanese exoskeleton company Cyberdyne and associated biomedical researchers at the University of Tsukuba.

Funded by the Victorian Government's Veski initiative (Study Melbourne Research Partnerships), the partnership's research project used Cyberdyne's Hybrid Assistive Limb (HAL) exoskeleton and Artificial Intelligence to precisely control HAL's ankle joint actuator to elevate the foot and reduce tripping risk. Drawing on the University's expertise in machine learning and real-time motion recording, the broader aim was to assist Cyberdyne in adapting their exoskeletons' joint actuators to patient-specific gait impairments, and in the longer-term introduce exoskeletons into rehabilitation facilities in Victoria and Australia-wide.

"We are very grateful for the research support provided by the Victorian Government's Veski initiative. We look forward to continuing our collaboration with Cyberdyne and local hospitals to improve the quality of life for people with gait impairments due to neurological conditions", said lead researcher, Professor Rezaul Begg.



Hannah Dower with current and former Western Bulldogs and VU PhD students.



Prof Rezaul Begg and Dr Hanatsu Nagano demonstrating Cyberdyne's HAL.

MAKING NEWS

Safeguarding in sport

The Conversation article, "[What the David Beckham documentary tells us – and what it doesn't – about controlling parents in sport](#)", by researchers Dr Mary Woessner, Dr Aurelie Pankowiak and Prof Alex Parker, linked examples of controlling parenting styles highlighted in the documentary with research the team has conducted on experiences of child abuse in Australian community sport.

The piece was read by over 80,000 users and was featured as the most popular Instagram and Facebook posts by The Conversation in its release week. It was also the most read Conversation article by VU authors in 2023. The research peer-reviewed publication referenced within The Conversation piece has generated an impressive 45 citations since its release in late 2022, with an Altmetric score of 195 (top 5% worldwide).

PUMA and VU join forces on gaining global insights on sport uniforms, what girls want.

Led by Professor Clare Hanlon, this research shows despite 95% of active girls being happy to wear whatever uniforms are required to play sport, 43% believed their uniforms make them feel conscious about how they look and 60% indicated that wearing their preferred sports uniform would help them continue playing sport.



Professor Clare Hanlon at PUMA uniform event.

With VU's research increasing the global awareness and action raised on 'why' the need to move from white shorts and/or enable choice, PUMA is one of the organisations now educating their sponsored sports on the need to provide choice. This research continues to attract further [media attention](#).



Professor Vasso Apostolopoulos

Vaccines against methamphetamine (Meth) addiction

Methamphetamine (meth) addiction affects 27 million people worldwide, causing severe withdrawal symptoms and extensive social and health problems (e.g., crime, family disruption, mental health issues). Meth use is increasing globally due to higher production and distribution, making it a significant public health concern.

Existing psychological treatments have high relapse rates, with no effective drugs available to treat Meth addiction.

Professor Vasso Apostolopoulos is leading research that is testing the development of anti-Meth vaccines that use the immune system to block Meth from reaching the brain.

[Media story on the breakthrough.](#)

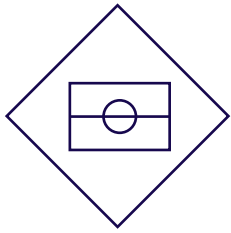
MND and exercise: new hope for MND patients

The ProtEx-MND project commenced in January 2023 (funded by a National Health and Medical Research Council Ideas Grant).

This is the first study to evaluate the effects of 16 weeks of exercise at moderate intensity at multiple levels of the motor system (the brain, the spinal cord and the muscle) in individuals with Motor Neurone Disease (MND). The aim of this project is to understand if exercise, precisely tailored to the characteristics of each individual and designed to account for the physiological basis of the disease, can slow down the degeneration of motor neurons.

The project is led by Dr Alessandra Ferri, with additional IHES researchers Professor David Bishop, Dr Hannah Thomas, and PhD candidate Patricia Bayer, with national and international collaborators.

This is a randomised controlled clinical trial, with participants in the exercise training group engaging in three sessions per week of moderate intensity aerobic (cycling for 20 min), strength (25 min of strength exercises with upper- and lower-body muscle groups), balance exercises (10 min) and five minutes of stretching exercises.



First Nations knowledge

This key thematic area is about 'Connecting the deep knowledge, insights, and perspectives of Aboriginal and Torres Strait Islander Peoples to solve contemporary challenges.' During the year, VU's Moondani Balluk once again demonstrated its expertise in growing, sharing and connecting Aboriginal perspectives and standpoints.



Plants for bush dyeing & participant artefacts.

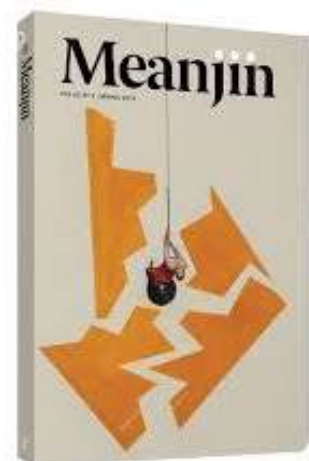
Blak Women's Healing

This project highlighted the importance of Indigenous knowledge and cultural practice in healing from ongoing histories of trauma, dispossession, and displacement, particularly for Aboriginal women in the west of Melbourne under surveillance by Child Protection. Connection with culture, Country, and kinship have been identified as protective factors for Aboriginal social and emotional well-being and as facilitating cultural healing.

Our yarning methodology, led by Rowena Price, collected stories mediated through cultural practice specifically Wayapa, and bush-dyeing workshops facilitated by Dr Paola Balla explored how women resignified experiences and engaged in "healing work." The collaborative analysis of the stories resulted in the identification of three main themes on the need for culturally safe spaces: vulnerability and identity, culture, and Country and place. Through Indigenous cultural practice the women "grew strength in relationship" as they engaged in the psychosocial processes of deconstruction, reclamation, and re-narrating personal and cultural identities.

Special Edition of *Meanjin*

Launched just before the Referendum on a Voice to Parliament, the Spring 2023 edition of the highly regarded Australian literary journal *Meanjin* was – for only the second time in its history - devoted entirely to work by Aboriginal and Torres Strait Islander writers and artists. Guest edited by Bridget



Caldwell-Bright and Eugenia Flynn, it contained articles by two Moondani Balluk academics: a 'State of the Nation' piece by Professor Gary Foley, and a critical culture piece, 'Culture and the Case for Dogs' by Dr Paola Balla. This demonstrates their national significance and regard.

VicHealth & Ancestral Dietary Practices

A VicHealth Research Impact Grant, was secured in 2023 that will support a collaboration between Moondani Balluk, Dr Kris Vingrys from Deakin University, the Iramoo Nursery, and the Koling wada-ngal Aboriginal Corporation aimed at recovering Ancestral knowledge about food practices on Kulin Nations land in order to assist with keeping Aboriginal people and Country healthy today.

Working with Aboriginal people and knowledge holders, the project, which commences in 2024, will strengthen social and emotional wellbeing, inter-cultural understanding, as well as the skills and knowledge to support sustainable, healthy food systems to reduce health inequities.

Culturally anchored research methods, including yarning circles and place-based learning to connect to Country, will be employed with expertise from multiple disciplines (Aboriginal studies, community development, nutrition, dietetics, and public health, psychology, sociology and ecology) and lived experiences, to gather information from Traditional Owners and Aboriginal community.



Karen 'KJ' Jackson, Executive Director Moondani Balluk, is an investigator in the Ancestral Dietary Practices project.

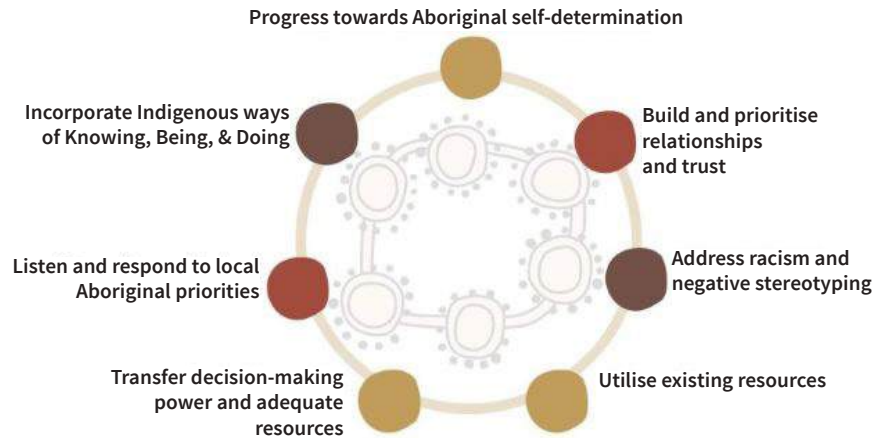
“... I can feel and see a sense of community, of connecting and belonging. I can see Aboriginal people with voice advocating for themselves and others. Each time a specific project based in an Indigenous framework is delivered for Aboriginal community in the west of Melbourne, we are continuing to create relationality and embodied knowledge.”

Karen Jackson
Executive Director, Moondani Balluk

FIND OUT MORE

Collaboration celebrations

Important collaborations and community-based and community-engaged research continued during 2023, underpinning personal, organisational and scholarly impact.



Building First Nations Capability

Thanks to a generous Paul Ramsay Foundation grant, the Aboriginal History Archive (AHA) at VU is providing capability building opportunities for First Nations researchers, HDR students and interns. Internships support both development of the archive and its research projects, as well as development of the intern’s own skills and interests. The AHA is a unique collection of materials on Aboriginal Black Power, Land Rights and Self Determination movements; the Archive is under Aboriginal control and operates on key principles of Aboriginal leadership.

After her 2022 internship, Natasha Ritchie used material in the archive to trace people

who were essential to the establishment and success of the Aboriginal Community Controlled Health movement. She went on to accept a part-time position in 2023 as a records specialist with Berry Street, a position that required a candidate with Social Work and Archival training and experience. Natasha continues to work as a Research Archivist part-time with the AHA.

A collaboration between the Aboriginal History Archive and the Victorian Aboriginal Health Service

A key collaboration between the AHA and the Victorian Aboriginal Health Service (VAHS) continued to grow during 2023.



Aboriginal History Archive Interns (from left): Elijah McDonald, Natasha Ritchie, Coen Brown & Kamiko Martin, with Project Manager Rochelle le Pere (centre).



Moondani Balluk, Aboriginal History Archive and VAHS presenters at the Lowitja Institute 3rd International Indigenous Health & Wellbeing Conference, Cairns Convention Centre, Queensland, June 2023 (from left): Lisa Thorpe, Kathy Travis, Natasha Ritchie, Will Bracks, Alan Brown, Angie Zerella. Photo: Kath B.

Professor Gary Foley, Alan Brown (VAHS Ambassador) and the AHA team are working together to permanently preserve VAHS's large and significant collection of records.

VAHS was established in 1973, making 2023 the 50th anniversary of the establishment of this pioneering organisation. VAHS has amassed an extensive informal archive which includes unique primary materials recording a range of events and activities in the history of VAHS, its home community of Fitzroy in Melbourne, its national network of health activists.

During 2023 AHA worked with VAHS to organise their records and has supported VAHS to gain funding to urgently digitise their unique and fragile audio-visual materials (more than 300 VHS and U-Matic tapes dating from 1982-1992 onwards, shot by Aboriginal health workers & activists).

This collection of material will ultimately enable a light to be shone on hidden local histories and will enable greater understanding of Aboriginal people's aspirations and ways of working.

This project is supported by the Lord Mayor's Charitable Foundation.

Advancing and Supporting Aboriginal Communities in Metropolitan Melbourne

Funded by the Metropolitan Partnerships Development Fund, this research was a collaboration between the Department of Transport and Planning and Moondani Balluk, and included a partnership with the Kolling wada-ngal Aboriginal Corporation, the Nairn Marr Djambana Aboriginal Corporation, and the Wandarra Aboriginal Corporation. The project explored issues

of self-determination for Aboriginal communities within metropolitan Melbourne and arose from the need for consistent metropolitan-wide data and more equal access to services for local Aboriginal people.

This research worked with local Aboriginal communities in Hume, Wyndham, and Frankston to establish a knowledge base of research literature pertaining to services and programs for Aboriginal people, reviewed existing local, state, federal and international policies that relate to Aboriginal people and self-determination, and captured regional data.

MAKING NEWS

Learning from History - the Referendum on a Voice to Parliament

During 2023, historian Professor Gary Foley made a range of contributions to the public discourse on the Referendum on an Aboriginal and Torres Strait Islander Voice to Parliament through speeches, podcasts, interviews and articles including: Invasion Day Rally, 2023; 'The use and abuse of History in the Voice referendum debate' in *Overland* with Dr Padraic Gibson; 'State of the Nation' in *Meanjin*; '[Can the Voice to Parliament deliver radical change?](#)' on The Monthly and The Saturday Paper's *Tam Podcast*; and a speech at Melbourne's Greek Centre for Contemporary Culture in Melbourne - covered in [The Guardian Australia](#).



Dr Paola Balla, pictured in 2021.
Photo: Sam Biddle.

Paola Balla - an Indigenous Scholar You Should Know

Dr Paola Balla continued her prolific creative research and impact in 2023, with consequent recognition and coverage. She featured as one of 6 scholars showcased in the Informit "[Indigenous Scholars You Should Know](#)" Interview series, launched on 27 July 2023 at RMIT. She was selected as one of five Victorian and five NSW artists for the 10-month long Counterflows Art program at Arts House Melbourne and UTP Sydney during 2023; and her work *Murrup (Ghost) Weaving in Rosie Kuka Lar*

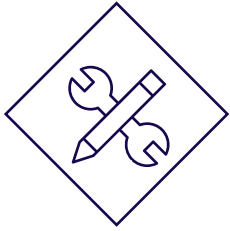
(*Grandmother's Camp*) was commissioned as new work for the major group show 'WILAM BIIK' which toured regional Victoria in 2023, having been first shown at TarraWarra Museum of Art in 2021.

Dr Balla's work *Mok Mok Murrup Yakuwa* (2023) was a commissioned new work for another major national Indigenous group exhibition, 'Shadow Spirit' at Flinders St Station as part of RISING 2023 and was featured in *The Guardian Australia's* coverage of this critically acclaimed show.

Bubup Wilam – a winner in excellence in education

Moondani Balluk is very proud to be home to two PhDs being conducted by Lisa Thorpe and Angela Zerella (pictured earlier) which document and analyse the work of the award-winning Bubup Wilam Aboriginal Child and Family Centre. Bubup Wilam is an early years organisation based in Thomastown, Melbourne, and in 2023 won the Education Award at the 2023 National NAIDOC Week Awards and was awarded the Excellent rating by the Australian Children's Education and Care Quality Authority (ACECQA), the highest rating a service can achieve under the National Quality Framework. These outstanding achievements gained media attention for Bubup Wilam during the year (including ABC, [National Indigenous Times](#); industry publication *The Sector*).

At Bubup Wilam, Lisa Thorpe (CEO) and Angela Zerella (Manager, Early Years Education & Training) and team work closely with families to create a learning environment for Aboriginal and Torres Strait Islander children that is culturally safe, supportive and creates a foundation for lifelong learning, health and wellbeing. Their research projects consider the underlying philosophies of Bubup Wilam and how these philosophies are put into practice organisationally and in wrap-around work with children and families. Lisa's research draws on the AHA's records about community control and pioneering Aboriginal health and childcare organisations.



New generation skills and workforce impact

Another busy year of research to support the skills of the future for advanced manufacturing and our service industries.

Carbon footprint of Artificial Intelligence

The growing adoption of artificial intelligence (AI) has raised concerns about its increasing carbon footprint and environmental impact. The funded Australian Research Council (ARC) Linkage project, “Distributed Evolutionary Computation for Green AI,” aims to address these concerns by developing a computation framework to optimise AI’s carbon footprint while maintaining or improving its performance. The team of Professor Hua Wang, Dr Yongfeng Ge and Dr Jiao Yin are collaborating with industry partner Nexus Online to achieve this goal in the next three years.

Expected outcomes include precise measurement of AI-linked carbon emissions and the development of new algorithms and strategies for mitigating these emissions. By addressing the carbon footprint of AI, this project will have significant advantages in tackling climate change, conserving energy resources, protecting the environment, and advancing Australia’s goal of achieving net-zero emissions by 2050.

Improving teenager wellbeing

For the past two years a team led by Professor Bruce Rasmussen, has been undertaking a major program for the World Health Organisation (WHO), on the evaluation of large-scale investments to improve adolescent wellbeing around the world. It is funded by WHO at almost \$1 million.



VU researchers (left to right Dr Yongfeng Ge, Professor Hua Wang, and Dr Jiao Yin).

The report focuses on the importance of investing holistically in adolescents and their wellbeing. It shows that such investments can reduce inequalities, protect the human rights of adolescents and generate strong economic and social returns from a wide range of investments. It is to be used as an advocacy document by the WHO, Partnership for Maternal, Newborn and Child Health (PMNCH) and others for investing in adolescents.

While entirely written within VU, the report was reviewed by some 30 leading academics and policy officials from around the world.



Prof. Bruce Rasmussen.

Quality Tourism Business Program

VU's City Tower hosted the 10 week Victorian Tourism Industry Council (VTIC) Quality Tourism Business Program, designed to elevate tourism businesses and professionals through a calendar of training modules covering everything from the fundamentals of tourism, best practice marketing, and sustainability

Dr Joanne Pyke, Associate Professor and Director, School for the Visitor Economy, shared findings at the Program launch from her influential research on, "Disaster resilience in tourism and findings revealing how quality tourism accredited operators bounce back stronger in times of crisis".



Keynote speaker Dr Joanne Pyke, Associate Professor and Director, School for the Visitor Economy.

FIND OUT MORE

Collaboration celebrations

Digital transformation initiative

Our IT team, in collaboration with the Victorian Chambers of Commerce & Industries (VCCI) and the Department of Jobs, Skills, Industry and Regions (DJSIR), has been spearheading a significant digital transformation initiative. This project has connected with over 100 small and medium-sized enterprises (SMEs), positively impacting more than 300 stakeholders within these organisations. The initiative fosters robust industry partnerships, creating a bridge between academia and the business world. These partnerships facilitate the exchange of knowledge and expertise, driving innovation and growth within the SME sector.



VU's IT team are working towards leveraging their combined expertise and resources to drive digital transformation across various industries

Supporting warehousing skills of the future

Workforce demand, paired with the changes in warehousing processes towards automation and digitalisation, creates a requirement for upskilling existing workers and training new employees. A team from VU Business School (VUBS) led by Associate Professor Catherine Lou, in collaboration with the Shop, Distributive and Allied Employees' Association (SDA) and funded by the Victorian Skills Authority

(VSA), investigated the likelihood, extent and possible timing of automation and digitalisation of warehousing jobs. The research utilised a mixed methods approach to identify current worker skills and future worker needs and skill gaps. Major warehouses in Melbourne's west, and nationally, were involved in the study. The research identified that while some organisations were well-placed to support the delivery of training and other services to help meet the skills needs, there was a

need for partnerships between industry and the education sector to fulfil short-term skill aspirations and needs along with support for long-term industry related upskilling.

MAKING NEWS



Amanda and Ravidner in the Pre/Transition class, teaching young Numbulwar students' numeracy through play

Cultural exchange building First Nations understanding

The Story Writing in Remote Locations (SWiRL) program has been generously funded \$70,000 for the last two years by Anglicare Northern Territory as part of the East Arnhem Communities for Children initiative. SWiRL began in 1996 and was developed by former VU education lecturer Lawry Mahon. The unique initiative provides preservice teachers with a culturally immersive experience in remote and rural First Nations communities in the NT. The SWiRL Program is committed to teaching and learning approaches that support and engage First Nations communities in culturally appropriate ways.

The SWiRL Program is not only innovative, but it also enhances preservice teachers' knowledge of First Nations standpoints and First Nations cultural traditions in remote communities. The program seeks to critique, question and interrogate the impact of colonisation on First Nations communities and their land.



Digital finance impact

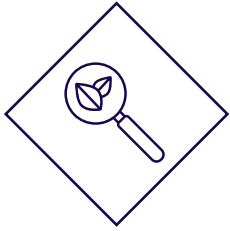
Funded by a Silicon Valley entity based in the United States (US) and working collaboratively with its Asian, Australian and US offices, this important research is addressing the legal gaps related to digital finance.

The research impact is significant, bringing together teams of legal scholars, legal practitioners and technologists from many jurisdictions to identify and harmonise divergent, complex national legal regimes.

This is because digital finance laws are highly fragmented and multilayered and reside across many different and complex laws that make up transnational commercial law.

Virtual reality for construction

Our research to [advance construction industry](#) process, such as using virtual reality tools to do building site inspections received strong media interest during the year, including this story in [Infrastructure Australia](#).



Green research translation

Some 2023 examples of sustainable solutions to challenges in the natural environment.



“Our research on integrating recycled textile and cardboard fibers into concrete is crucial because it not only enhances the structural integrity and durability of concrete but also addresses critical environmental issues by reducing waste and promoting sustainable construction practices.”

Associate Professor, Malindu Sandanayake

Concrete alternatives

With Australians generating massive amounts of paper, cardboard, and textile waste annually, and only a small fraction being recycled, Associate Professor Malindu Sandanayake and his team undertook a project investigating the use of cardboard and textile fibers as reinforcement and cement replacement in concrete. The study, funded by Sustainability Victoria, tested concrete mixes fortified with recycled fibers from cardboard and Hi-Vis vests, which are usually discarded due to strict resale regulations.

The results showed concrete mixed with these fibers enhanced strength and improved resistance to environmental stressors like fire and chemicals. These

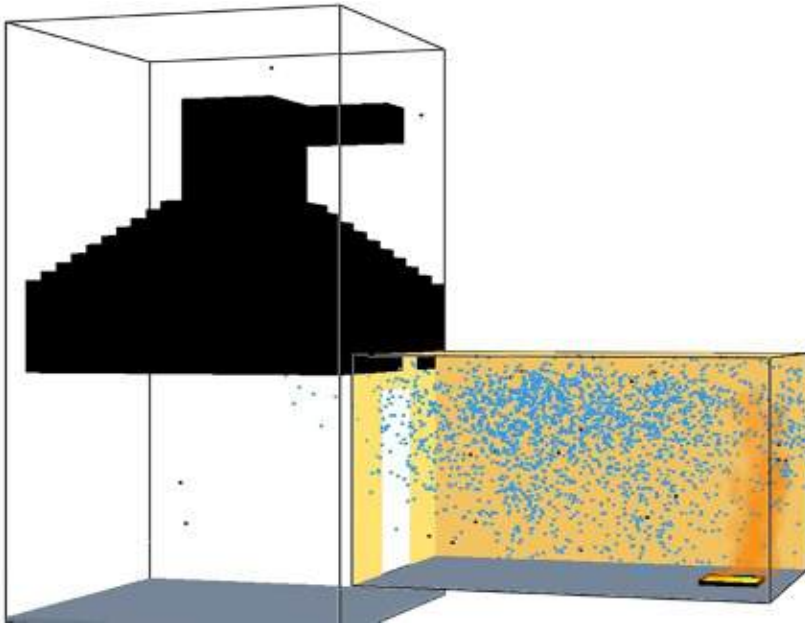
improvements were attributed to the fibers’ ability to fill voids in the concrete, enhancing its overall structure and durability.

Fire research

VU’s Fire Research team, in an activity funded by the Defence industry, is investigating the use of environmentally safe water-mist fire suppression systems to suppress fires on ships. The primary objective is to replace hazardous and unreliable fire suppression systems with cleaner agents.

Fires at sea have the potential to inflict significant harm and require different responses to land fires. Ship environments include hydrocarbon fuels in enclosed

Green research translation



State-of-the-art modelling of fire suppression by water mist

spaces (e.g. engine rooms); limited storage space for fire suppressants, and evacuation of personnel can be very difficult. Fires on both naval and civilian vessels can not only lead to the tragic loss of lives but also to loss of maritime assets.

Fire group researchers are exploring the efficacy of water-mist fire suppression systems through bespoke experimentation in the hope to create a fire suppression system to protect our maritime industries.

Engaging youth to 'Future Proof' communities

The Future Proof (FP) project was funded through the Federal Government, Black Summer Bushfire Grants to conduct a Collective Impact Project with 14 partners and a budget of \$9.93 million. The aim of the project was to provide support to regional communities to engage with young people and provide training and

qualifications opportunities around youth work, mental health first aid, public safety, and place-based emergency services. The project began in 2022 and has been extended through to March 2025.

So far, 163 young people have driven locally-led, place-based programs, 6,549 have engaged in local community projects, and 1,183 young people have been supported to attain locally useful qualifications in youth work, mental health and emergency services. Researchers have visited eight regional areas in Victoria, capturing data and building relationships with partners across the project.



Researchers leading the Future Proof project, left to right: Associate Professor Fiona MacDonald, Brett Woods, and Professor Tim Corney.

FIND OUT MORE



Commercial Plant to Remove PFAS from Leachate

Collaboration celebrations EGL and VU

Making impact with Greater Western Water

For the last 20 years, VU and Greater Western Water (GWW) have developed a strong and far-reaching partnership. In 2023, the partnership was elevated to a multi-year Major Alliance involving 25 people across both organisations.

Eight collaborative projects have been identified within 15 topic areas that aim at achieving circular economy, environmental remediation, and mitigated impacts from climate change, focussing on Melbourne's western urban and rural regions.

Example projects include accessing excess pressure in pipe networks to create energy, using recycled materials for trench backfill, Indigenous water management, stormwater harvesting case studies, community values of water, desalination and pre-treatment of recycled water using polymeric and ceramic membranes, the use of solar energy in water treatment, a computer based screening tool for locating and assessing storm water harvesting sites in urban Melbourne, and low-energy nitrogen recovery from trade waste.

Five sites contaminated by polyfluoroalkyl substances (PFAS) will be rectified in a \$5 million project being led by VU's Dr Jianhua Zhang. To advance this new technology, EGL has invested \$500,000 to assist.

This project will reduce PFAS distribution in the environment and impact to the ecosystem, and will reduce opportunity of PFAS presentation in the drinking water, as has been detected in the Footscray area. This is one of a number of EGL sponsored VU projects.

MAKING NEWS



Dr Douglas Gomes working on the new device that can detect a broken conductor.

Vital bushfire conductor research

Dr Douglas Gomes is developing a device that aims to detect a broken conductor and take the power out of the line before it has time to touch the ground.

The device will trip circuit reclosers on single-wire earth return (SWER) networks to shut down power if it detects a broken powerline.

The technology is still in a testing phase, with ambitions for market-readiness within the next three years. Dr Gomes says the results so far are promising.

“We simulated a real conductor breakage and we could clearly see that our device could detect that conductor breakage in less than a second,” he said.

Dr Gomes and his team hope their device will be able to help power crews locate conductor breakages faster.

The researchers are also planning a further study about whether their device can help mitigate other bushfire hazards, like when vegetation touches a powerline.

Read more about this important work on [the ABC](#).

New road development

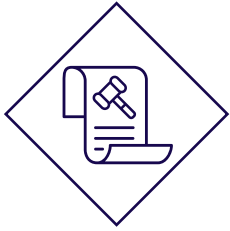
Funded by Victoria State Government, VU researchers conducted research on advancing Sustainability in Transportation Infrastructure through applied, experimental research, featuring a variety of specialised testing on asphalt. The objective was to develop an optimised asphalt mix design using recycled materials. Following the comprehensive testing phase, the developed asphalt mixture was employed to pave a 60-meter section of a road in Melbourne, Australia. This road section has been under monitoring for more than 2.5 years to evaluate its performance over time. This project hopes to demonstrate practical applications of waste or recycled materials to promote sustainable construction practices and materials. Industry partners in this project were Asphalttech, Wyndham City Council, and Boral. You can read more about it in this article in [The Westsider](#).



VU researchers are working on recycled material road onsite.

Other news

[Western suburbs expanding but public transport is not.](#)



New frontiers in policy, advocacy and justice

Some examples from 2023 where our research has improved education, health, law, social inclusion.



Associate Professor Peter Hurley.

Needs-based funding model recommended by the Australian University Accord

In 2023, the Mitchell Institute* produced a paper which found that a needs-based funding model, using the same parameters as the Schooling Resource Standard, would see an overall 11% increase in base funding amounts to universities for government-funded students.

This extra funding would specifically help universities counter disadvantage by meeting extra learning needs and providing extra support to help students finish their courses.

VU advocated this so-called “Gonski” for universities funding model to the Australian Universities Accord consultation process, with the final Accord report including it in its recommendations.

Education policy expert and Mitchell Institute Director, Associate Professor Peter Hurley who led the research said, “extra funding to institutions with higher concentrations of student disadvantage means resources will go where they are needed most.”

“Resources matter. Disadvantage does not stop when students leave high school – a needs-based funding model marks a major shift in how universities are funded,” Associate Professor Hurley said.

**The Mitchell Institute is supported by the Harold Mitchell Foundation*

Anti-racism roadmap for Melbourne’s southeast

A report released in 2023 recommended effective ways for residents in Melbourne’s southeast to speak out against racism and find support services in their local areas.

The study was conducted in partnership with the rapidly growing Cities of Casey and Greater Dandenong – where nearly two-thirds of residents are born overseas and more than 200 languages are spoken.

VU researchers [Associate Professor Mario Peucker](#) and [Professor Tom Clark](#) collaborated with community organisations and residents to develop a local ‘roadmap’ of practical ways that reporting and support services could be tailored to the specific needs of local communities.

Associate Professor Peucker said under-reporting racism was common, and the reasons behind it needed to be addressed systematically, without expecting people who experienced racism to navigate difficult reporting processes.

“If we want more people to speak out against racism, we must ensure those who face racism have clear and effective ways to connect to the support they desire.”



Professor Kitty te Riele, Associate Professor Tim Corcoran, Professor Julie White and Associate Professor Alison Baker at the launch.

Education in youth justice centres

A team of researchers from VU, University of Tasmania and Deakin University identified the challenges of educational provision in youth justice centres in the culmination of three major research projects spanning eight years, *Incarcerated Young People, Education and Social Justice*.

For children and young people who are in prison, whether on remand or sentenced, access to education is crucial. The research has therefore also identified how improvements to access, respect and enablement can be made.

Researchers analysed interviews from key stakeholders in youth justice and education, rare interviews with young people in custody, and extensive documents, providing one of the most comprehensive reviews of education within youth justice in Victoria.

VU's Associate Professor Alison Baker said the right of children to have a say on issues that affect them is a significant part of the Convention on the Rights of the Child.

Professor Julie White said the book demonstrates not only the challenges but also the possibilities for education as a mechanism for social justice for incarcerated young people.

It is hoped that this the book will become a useful resource for the sector to continue to improve the education offering not just in Victorian youth justice centres, but in similar settings around the world.

MAKING NEWS

"There were already two childcare centres on this street. The council tried to block a third one." [Read this article in The Age referencing the 2022 childcare access study.](#)

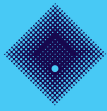
[Read the Conversation piece.](#)

[Read this piece on our work by the Centre of Policy Studies](#)

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and how you can be part of it**



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