Annual Report
2022

Contents

Wicking Dementia Research and Education Centre – Our Mission

The Wicking Dementia Centre is leading the way in dementia research and education. Our mission is to transform the understanding of dementia worldwide and we seek to improve the lives of people living with dementia and their caregivers.

The Wicking Dementia Research and Education Centre aims to:

- better understand the diseases affecting the brain that cause progressive decline in functioning, affecting memory, problem-solving skills, function and social behaviour;

- develop evidence-based models of care provision for people with dementia and their caregivers;

- develop innovative approaches to reducing risk of dementia;

- provide educational programs to build knowledge and understanding of dementia within the community.

Dementia is a neurological condition that affects tens of millions of people across the globe, posing significant challenges to people living with the condition, their families, communities, and the health care sector. The Wicking Dementia Centre is a collaborative environment of researchers and global specialists who work together to advance progress across the cause, prevention, and care of dementia.

In 2022, there are up to 487,500 Australians living with dementia. Without a medical breakthrough, the number of people with dementia is expected to increase to almost 1.1 million by 2058.

Source: Dementia Australia (2018) Dementia Prevalence Data 2018-2058, commissioned research undertaken by NATSEM, University of Canberra.

Message from the Director

It is my great pleasure to present the 2022 Annual Report of the Wicking Dementia Research and Education Centre.

Education and research are at the core of the Wicking Dementia Centre. We are very proud to be able to continue offering our free courses on dementia through the Massive Open Online Courses (MOOCs), and that we can also offer both undergraduate and postgraduate formal courses in dementia. We have been aiming to offer an educational solution to people seeking to build their knowledge and skills in dementia. I am sure that those who undertake the MOOCs through to the degree offerings are agents of change when it comes to impacting the quality of dementia care through to enabling our communities to be more inclusive of people with dementia. The Wicking Dementia Centre is partnering and hopefully supporting those who are seeking to transform dementia understanding and care.

In 2022, we were very pleased to be selected by the Commonwealth Department of Health and Aged Care to deliver a new short course program on aged care, through the Equip Aged Care Learning Packages which is available to all for free. This new initiative provides both entry-level and refresher content on a range of topics that are important to aged care more broadly, including content on dementia. We would be very grateful if you would share this short course opportunity so that we may be able to reach as many people as we can.

2022 was also a very successful year for research. New large-scale funding was secured for areas such as stem cell research for childhood dementia and motor neuron disease through to new approaches to detecting dementia. Our flagship public health project based in Tasmania, the Island Study Linking Ageing and Neurodegenerative Disease (ISLAND) is also generating outcomes that are important for reducing risk of dementia at the population level. Likewise, the ISLAND Cognition Clinic is collaborating extensively with General Practitioners across the state to provide a nationally leading service to obtain a timely diagnosis of dementia. The Clinic is also the focus of a range of studies involving local researchers as well as national collaborations.

All these endeavours would not be possible without a range of partners that provide services and funding to support these projects. I would like to note the very valuable support from local organisations such as the Tasmanian Masonic Medical Research Foundation and St.LukesHealth for their support of the development and running of the ISLAND Project. Philanthropy is also becoming increasingly important to the Centre, and our deep thanks to all who made a financial gift, and also to Rowena Howard and family for aiding our philanthropic campaign through 2022.

Members of the Centre were deeply saddened with the passing of our colleague, Dr Maree Farrow in September 2022. Maree was a highly valued member of our community, and had contributed substantially to both teaching and research in the Centre. Maree was a key driver of the development of the Preventing Dementia MOOC in 2016 and was engaged in a number of research projects, particularly related to prevention and public health approaches to dementia. The legacy of her work will continue, but she will be very much missed by all of us.

Finally, 2022 marks 15 years of the Wicking Dementia Centre. We are grateful for the support of the University of Tasmania and the J.O. & J.R. Wicking Trust, managed by Equity Trustees, over this time. The support from the Wicking Trust has been critical, as this has seeded a number of projects and enabled their dissemination to the community. The MOOCs, in particular, have been an example of such support, which has enabled us to offer these courses for free.

I hope that you enjoy reading the report and please do get in touch if there are any areas that you may want to discuss with us.

Distinguished Professor James Vickers
Director
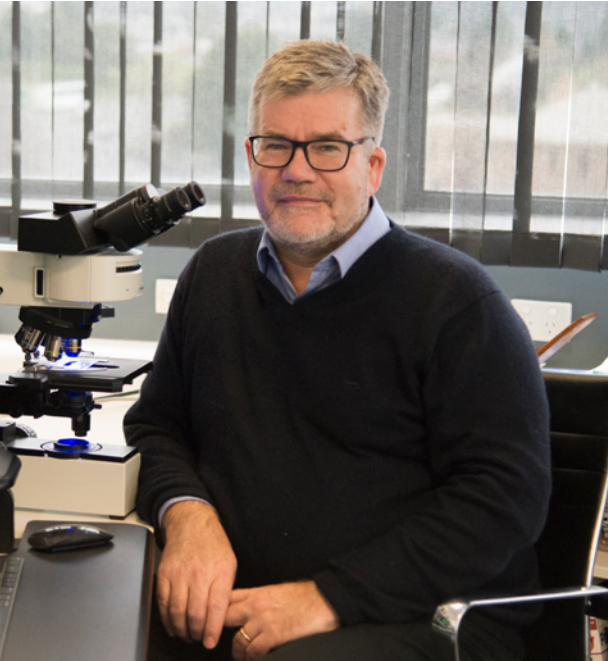
Achievements in 2022

Our Grant Funding	
Total current project funding	**$11,419,984**
Total new or announced funding in 2022	**$1,218,064**

Undergraduate study	Graduates to date	Graduated in 2022
Bachelor of Dementia Care (M3S)	338	35
Associate Degree in Dementia Care (M2D)	286	19
Diploma of Dementia Care (M1D)	1,486	338
Diploma of Ageing Studies and Services (M1A)	14	12
Undergraduate Certificate in Aged Care Services (50A)	1	0
Undergraduate Certificate in Dementia Care (50F)	74	74
Total number of graduates	**2,199**	**478**

Postgraduate study	Graduates to date	Graduated in 2022
Master of Dementia (M7X)	17	14
Graduate Diploma of Dementia (M6X)	5	3
Graduate Certificate in Dementia (M5X)	36	16
Total number of graduates	**58**	**33**

Dementia MOOCs	Enrolments to end 2022	Total enrolled in 2022	Australian enrolments in 2022	International enrolments in 2022	Completion Rates in 2022 %
Understanding Dementia	357,163	36,176	20,302	15,874	35%
Preventing Dementia	215,497	28,053	15,712	12,341	33%
Understanding Traumatic Brain Injury	44,473	24,399	14,360	10,039	40%
Total enrolments	**617,133**	**88,628**	**50,374**	**38,254**	

We have received enrolments from 162* countries to date including 142 UN member states.

*Countries as included on the MOOCs enrolment form as listed in the ISO 3166 Standard of 249 countries, territories, or areas of geographical interest.

Our Education

The Wicking Dementia Research and Education Centre is a global leader in dementia research and the largest provider of dementia education, offering world-class online learning that is based on the latest evidence. The Wicking Dementia Centre's mission is to transform the understanding of dementia worldwide and to build a workforce to lead positive change in ageing and dementia care.

Dementia is a condition that affects hundreds of thousands of people across the globe – one that poses significant challenges to their quality of life as well as that of their families and communities.

The goal of the Wicking Dementia Centre is to provide education about this condition for caregivers, families, and health professionals to help improve the quality of care and safety for people living with dementia, and to help people reduce their risk of developing dementia.

Massive Open Online Courses (MOOCs)

Improving dementia literacy, through maximising the reach of our Understanding Dementia, Preventing Dementia and Traumatic Brain Injury MOOCs and evaluating the impacts of these three programs continues to be an important focus for the Centre.

The free MOOCs continue to attract participants, the completion rates remain the same, with an average of 36% of all enrolled participants completing their MOOC.

- **Understanding Dementia (UD) MOOC** examines the diseases that cause dementia, how the disease impacts the person with dementia, and the treatments and care practices that enhance quality of life along the disease trajectory, for people with dementia, their families, and caregivers.

- **Preventing Dementia (PD) MOOC** looks at what you can do to minimise your risk, the impacts of dementia, including loss of physical and cognitive capacity, and the impacts that are felt community wide.

- **Understanding Traumatic Brain Injury (TBI) MOOC** aims to raise awareness and build knowledge of TBI to reduce risk and improve management and rehabilitation outcomes for people who have experienced a TBI. The course looks at the causes and consequences of TBI across the spectrum from mild concussion through to severe injuries, as well as at how and when injuries may occur across the lifespan.

Equip Aged Care Learning Packages – new free aged care learning modules

In 2022 the Wicking Dementia Centre expanded its free online offerings by launching the Equip Aged Care Learning Packages. The program comprises of 14 short modules spanning a broad range of topics relevant to anyone working in aged care.

The course modules were developed by the Wicking Dementia Research and Education Centre with funding from the Australian Government Department of Health and Aged Care. The Wicking Dementia Centre has collaborated with stakeholders and experts from across Australia to deliver this new program.

The 14 Equip Aged Care Learning Packages

1. The Australian Aged Care System
2. Exploring the role of Nurses, Personal Care Workers and Allied Health Professionals in Aged Care
3. The Aged Care Quality Standards
4. Supporting People Living with Dementia
5. Palliative and End-of-Life Care
6. Person-centred Care (including awareness of diversity)
7. Aboriginal and Torres Strait Islander Cultural Awareness
8. Trauma Informed Care
9. Promoting Mental Health and Awareness
10. Cross Cultural Awareness
11. Oral Health Promotion
12. Prevention of Falls
13. Wound Management and Pressure Injury Prevention
14. Hearing Health

The Equip Aged Care Learning introductory packages offers new starters in the aged care workforce, and those seeking employment in the sector, the opportunity to gain essential knowledge to assist them to launch into their career in aged care and enhance their employment prospects. It is anticipated that these packages will also be of benefit for volunteers, informal carers, and anyone with an interest in the care of the elderly.

The Equip Aged Care Learning refresher packages are a useful resource for aged care workers to keep abreast of current trends in aged care and to maintain their continuing professional development.

University award courses

The Wicking Dementia Centre is a global leader in dementia education. Our mission is to transform the understanding of dementia worldwide. We offer online university award courses, based on the latest research, that are suitable for everyone at any stage of their career.

Diploma of Dementia Care

This Diploma of Dementia Care is suited to caregivers, aged care, community and health sector workers' and anyone with an interest in learning more about dementia. We are pleased to continue to provide this diploma HECS free, ensuring this important education is widely accessible to all. Students learn from experts, lecturers and clinicians from a range of disciplines who are active in dementia research, and learning is supported with the use of real-life case study examples. This course provides graduates with the knowledge to make a difference in the health and community sector in a range of roles which are critical in delivering enhanced capacity to a sector facing enormous challenges.

Bachelor of Dementia Care

The Bachelor of Dementia Care is Australia's only undergraduate degree in dementia care. The Wicking Dementia Centre continues to offer a degree specifically focused on dementia which allows students to develop specialist knowledge to enable the delivery of best practice in dementia care.

With the rise in prevalence in dementia and the need to provide quality care in the community, health care centres and hospitals, and in residential care, it is becoming essential that health care workers in aged care develop specialised knowledge in this field so to make a difference to the lives of people living with dementia.

Diploma of Ageing Studies and Services

The Diploma of Ageing Studies and Services is the only undergraduate diploma in Australia that addresses the need for holistic knowledge of the ageing process. This includes knowledge on the social and biological aspects of ageing; chronicity and multimorbidity; age-related discrimination and prejudice; public health understandings; and administrative processes related to policy and aged care. This diploma will equip graduates with the knowledge to assist older adults and their families in navigating the complexity of the aged care system.

Master of Dementia

Our Master of Dementia course provides a global perspective on the impact of dementia on individuals and societies. It is aimed at graduates and professionals currently working within, or building their expertise in, a field related to dementia. The courses offer a comprehensive understanding of dementia from the perspectives of individuals, families, communities, health care systems and governments, and cover the neurobiology of dementia, including pathology, biomarkers, and therapeutics.

In 2022, there are an estimated 28,800 people with younger onset dementia, expected to rise to 29,350 people by 2028 and 41,250 people by 2058. This can include people in their 30s, 40s and 50s.

Source: Dementia Australia (2018) Dementia Prevalence Data 2018-2058, commissioned research undertaken by NATSEM, University of Canberra.

Our Research and Grants

The Wicking Dementia Centre continues its global reach with collaborations focusing on the three major research themes of dementia – cause, prevention and care. We are at the forefront of translational research of relevance to people living with dementia, their caregivers, and health professionals. Below is a selection of current research projects, to read more about our research see: **utas.edu.au/wicking/research**

Biomarkers of brain health: monitoring the brain by looking in the blood

The brain is an amazing organ and there is growing evidence that it is quite resilient to change. This is good news as it means that we can keep functioning even when there are some adverse brain changes. However, it means that by the time changes are noticed clinically, quite substantial changes have already occurred that we may not be able to repair.

This is particularly evident in dementia where we now know that the changes in the brain that cause dementia can start occurring up to 20 years before the onset of clinical symptoms. To treat or prevent these changes we need to monitor the brain as we get older. One of the great difficulties in monitoring the brain is that it is inaccessible; we can't easily look inside the skull or take a biopsy of brain tissue. So, to monitor brain changes we need to look for biomarkers; surrogate markers of brain changes.

We can currently examine biomarkers of changes in the brain by performing brain imaging or by looking at proteins in the cerebrospinal fluid (CSF), the fluid which surrounds the nervous tissue in the brain. A challenge with both techniques is that they are invasive and expensive.

Another fluid that is much easier to measure is the blood. Blood is separated from the brain by the blood-brain barrier, however recently it was discovered that brain proteins are washed into the blood and can be detected at low levels. We now need to understand how these brain proteins change in the blood as we get older, how they change in the pre-clinical stages of dementia and how they relate to actual changes in the brain.

The Wicking Dementia Centre was the first in Australia to establish a sensitive machine, known as the SIMOA, to analyse brain biomarkers in the blood. Our team is working to analyse brain proteins in blood donated by 1,900 participants in the ISLAND Project, which includes healthy volunteers in the prevention program as well as people who come to the memory clinic with concerns around their cognition.

We are analysing the normal levels of these proteins as we get older, how they relate to cognitive and motor function, how they relate to dementia risk factors and how they change with a diagnosis of dementia. We are also using model systems to determine how the blood biomarkers relate to actual pathological changes in the brain.

Objectives

We aim to develop blood tests to monitor brain health and help predict those for whom early intervention may prevent or delay the onset of dementia.

Research Team

Professor Anna King; Distinguished Professor James Vickers; Dr Jessica Collins; Dr Eddy Roccati; Mr Aidan Bindoff; Mr Graeme McCormack; Mr Anisuzzaman Chowdhury; Ms Laura De Paoli.

In 2022 it is estimated that there are 12,200 people in Tasmania living with dementia.

Dementia Australia (2018) Dementia Prevalence Data 2018–2058, commissioned research undertaken by NATSEM, University of Canberra.

Traumatic Brain Injury (TBI) Raising Awareness

It is estimated that there are 200,000 incidences of traumatic brain injury (TBI) each year in Australia with up to 20,000 people hospitalised. Sustaining a TBI can be a life-changing event, leading to physical, cognitive, sensory, communication and social impacts and increasing the risk of developing dementia. Research from across the globe suggests that nonexpert healthcare professionals and the general public hold inaccurate or inadequate knowledge about TBI. This lack of understanding can result in isolation of individuals who have sustained a TBI. The goal of this project is to address this lack of understanding and increase knowledge and awareness of TBI in the community.

The first step in this process is to understand what people do know about TBI in Australia and what their understanding of the long-lasting effects of a TBI are. To accomplish this aim, we have developed online surveys to ensure that we have an understanding of knowledge in different groups from diverse backgrounds and geographical locations. The second step of the project is to capture the lived experience of individuals who have sustained a TBI or their carer. This will enable us to develop inclusive and flexible educational programs that incorporate the lived experience of people living with TBI and their families and addresses diverse community needs through integration of innovative educational techniques such as narrative and documentary video and storytelling in Aboriginal art.

One example of the educational tools we are developing to directly address the lack of knowledge is the Understanding Traumatic Brain Injury Massive Open Online Course (TBI MOOC). The TBI MOOC is a free, publicly available course that offers university-quality education and provides a comprehensive overview of TBI and its effects. Overall, the TBI MOOC is designed to be accessible to a wide range of learners, with no prior knowledge of TBI required. The TBI MOOC covers a wide range of topics, including the causes and mechanisms of TBI, the symptoms and long-term effects of TBI, and the various medical and rehabilitation treatments available. One of the key strengths of the TBI MOOC is its use of multimedia resources.

The course features a range of videos, animations, and interactive simulations that help to bring the content to life and make it easier to understand. We will use our gained understanding of people's knowledge about TBI to refine the content of this MOOC so that it addresses the identified needs. We also want to incorporate more about the experience of people who have had a TBI and to ensure that their voices are heard through the MOOC offering.

Finally, we need to understand whether the MOOC is improving our understanding of TBI and how this affects the attitudes and beliefs about TBI in the community. This will be performed by evaluating participants engagement with the MOOC as well as assessing their knowledge through surveys.

Overall, this project aims to improve the lives of people who have sustained a TBI as well as their family members through increased community awareness and understanding of the long-lasting effects of TBI. It may also improve management and rehabilitation outcomes for people who have experienced a TBI. So far, the three iterations of the Understanding TBI MOOC have attracted over 30,000 enrollments from 142 countries, with over 55% of enrollees completing the course. The Understanding TBI MOOC was ranked the best online course in 2022 by Class Central and is currently ranked number 4 overall for disease and disorders courses.

Objectives

Traumatic brain injury is often described as a silent epidemic, with approximately 69 million cases occurring worldwide each year. The objective of the Understanding TBI MOOC is to raise awareness and build knowledge to reduce risk, as well as improve management and rehabilitation outcomes for people who have experienced a traumatic brain injury.

Research Team

Dr Jenna Ziebell, Dr Christine Padgett, Dr Peta Cook, Dr Fiona Proudfoot, Hannah Fair, Yasmine Doust, Dr Anna Leonard, Dr Stuart McDonald, Dr Rowena Mobbs, Dr Joanna Sun, Dr Claire Eccleston, Dr Kathleen Doherty, Dr Nicole Bye, Dr Tanya Schramm, Associate Professor Lyn Goldberg, Professor Anna King, Distinguished Professor Melinda Fitzgerald and Distinguished Professor James Vickers in partnership with Brain Injury Association of Tasmania, Connectivity TBI and Brain Injury Australia.
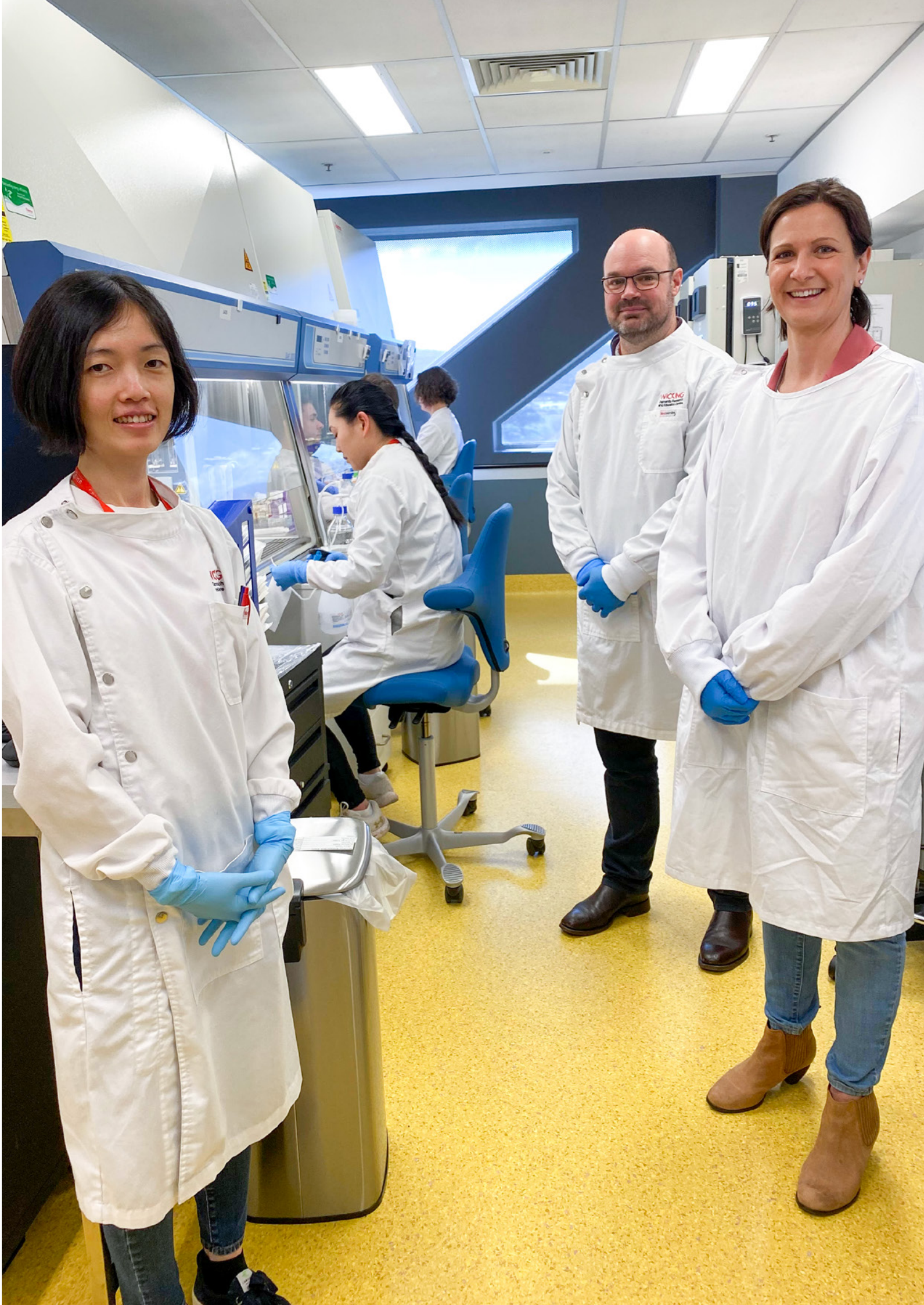
Investigating the value of "pataka"

There is a recognised "pre-clinical" phase in the development of dementia where there are no symptoms (see Figure below). This pre-clinical phase provides a marvellous opportunity for researchers to identify biomarkers that can predict dementia and allow us to intervene early to prevent or slow the progression of the condition.

Valuable blood-based biomarkers have been developed but these tests are invasive, expensive, and difficult to access for people who live away from major medical centres. At the Wicking Dementia Centre, our attention is focusing on non-invasive, inexpensive, and potentially online tests and intervention programs involving movement. We know that gait, the way we walk, changes in the pre-clinical phase and these gait changes predict decline in cognitive function. Associate Professor Jane Alty, a neurologist, has an NHMRC Ideas Grant to extend this research and investigate the association of finger movements and cognition through her expertise in developing digital biomarkers of pre-Alzheimer's disease from motor tests. Associate Professor Lyn Goldberg, a speech pathologist, is now contributing her expertise in speech pathology and has introduced speech movements, the "pataka" test, to complement the gait and finger movement analyses.

There is a rich history behind the "pataka" test. It has been used for many years to differentially diagnose motor speech disorders, especially those experienced by people following a stroke or with progressive neuromuscular conditions such as Parkinson's disease. These motor speech disorders are of two types:

(i) **dysarthria** – where the muscles needed for speech production, including breathing, are weak and uncoordinated, and

(ii) **apraxia** – where muscles work well but there is difficulty at high levels in the brain that affects a person's ability to plan and sequence speech movements.

The test is deceptively simple. People are asked to repeat the sounds "pa" (lip movement) "ta" (tongue tip movement) and "ka" (back of tongue and palatal movement) individually as fast as they can for a period of time or until they run out of breath. Then, people are asked to put the sounds together, "pataka", and repeat the sequence as fast as they can. Given the increasing evidence on the link between gait and finger movement and cognitive function, we think there may also be an association between speech movements and cognitive function. This is an unexplored area – and important in contributing to understanding changes in motor function in the pre-clinical phase of Alzheimer's disease. We are grateful to the Royal Hobart Hospital Research Fund for their support of this interdisciplinary work between the Wicking Dementia Centre and University of Tasmania Information and Communication Technology, (ICT), bringing together colleagues across disciplines , and a cadre of talented PhD students.

Objectives

To determine the association of rapid speech movements with cognitive function in people with and without cognitive difficulties; and develop easily accessible intervention programs for people with pre-clinical Alzheimer's disease and dementia to improve function, delay the progression of the condition and optimise quality of life.

Research Team

Wicking Dementia Centre, University of Tasmania ICT and Royal Hobart Hospital.

10 – 20 YEAR PRECLINICAL PHASE OF ALZHEIMER'S DISEASE

Educating the masses to address a global public health priority

Can you list 12 health and lifestyle factors that can alter dementia risk? If your answers is "no", you aren't alone. Recent investigations have found that around 40% of dementia cases across the world could be prevented if everyone improved 12 modifiable health and lifestyle factors, however public knowledge of these risk factors is limited both here in Australia, and across the world.

To increase peoples' knowledge of dementia risk factors and give them the opportunity to make changes that reduce their dementia risk, a team from the Wicking Dementia Centre has developed a globally available free online course that provides information about dementia risk factors and dementia prevention strategies called the Preventing Dementia MOOC (Massive Open Online Course). After running this course for five years, we analysed the data provided by course participants to work out who the course was reaching and whether these people were benefitting from the course.

Over 100,000 people participated in the Preventing Dementia MOOC between July 2016 and May 2020. We analysed the data provided by 55,739 people who gave permission for their data to be used in research. These participants came from 167 different countries, spread across all habitable continents of the world. Participants reported enjoying the MOOC, and they reported that the MOOC improved their understanding of dementia risk reduction. Crucially, the majority of participants reported changing their behaviour and lifestyle because of the MOOC. Participants most frequently reporting changing their diet, increasing their level of physical activity, or increasing their level of cognitive activity.

Objectives

To understand the types of people who take part in the Preventing Dementia Massive Open Online Course, the outcomes they report from their learning, and the impact of that learning on their health and lifestyles.

Research Team

Hannah Fair, Dr Maree Farrow, Dr Shannon Klekociuk, Distinguished Professor James Vickers

Selection of 2022 Publications

Title: Interpersonal communication may improve equity in dementia risk education.
Authors: Fair H, Klekociuk S, Eccleston C, Doherty K, Farrow M.
Publisher: *Journal of Australia Health Promotion*

Title: Community expectations of a village for people living with dementia.
Authors: Tierney L, Doherty K, Breen J, Courtney-Pratt H
Publisher: *Health and Social Care*

Title: Exploring perceptions of eating with dementia: Findings from a massive open online course.
Authors: Goodwin I, Lea E, Bindoff A, Doherty K
Publisher: *Science Direct*

Title: Island Study Linking Aging and Neurodegenerative Disease (ISLAND) Targeting Dementia Risk Reduction: Protocol for a Prospective Web-Based Cohort Study.
Authors: Bartlett L, Doherty K, Farrow M, Kim S, Hill E, King A, Alty J, Eccleston C, Kitsos A, Bindoff A, Vickers J.
Publisher: *Advancing Digital Health & Open Science JMIR Publications*

Title: Educating the masses to address a global public health priority: The Preventing Dementia Massive Open Online Course (MOOC).
Authors: Farrow M, Fair H, Klekociuk S, Vickers J
Publisher: *PLOS ONE Journal*

Title: Sex-specific protective effects of cognitive reserve on age-related cognitive decline: A 5-Year prospective cohort study.
Authors: Alty J, Bindoff A, Stuart K, Hill E, Collins J, King A, Summers M, Vickers J
Publisher: *Neurology*

Title: Truth, hope and the disclosure of a dementia diagnosis: a scoping review of the ethical considerations from the perspective of the person, carer and clinician.
Authors: Merl H, Doherty K, Alty J, Salmon K
Publisher: *Dementia*

Title: Temporal changes in the microglial proteome of male and female mice after a diffuse brain injury using label-free quantitative proteomics.
**Authors:** Doust Y, Bindoff A, Holloway O, Wilson R, King A, Ziebell J
Publisher: *Glia*

Title: The TAS Test project: a prospective longitudinal validation of new online motor-cognitive tests to detect preclinical Alzheimer s disease and estimate 5-year risks of cognitive decline and dementia.
Authors: Alty J, Bai Q, Li R, Lawler K, St George R, Hill E, Bindoff A, Garg S, Wang X, Huang G, Zhang K, Rudd KD, Bartlett L, Goldberg L, Collins J, Hinder M, Naismith S, Hogg D, King A, Vickers J
Publisher: *BMC Neurology*
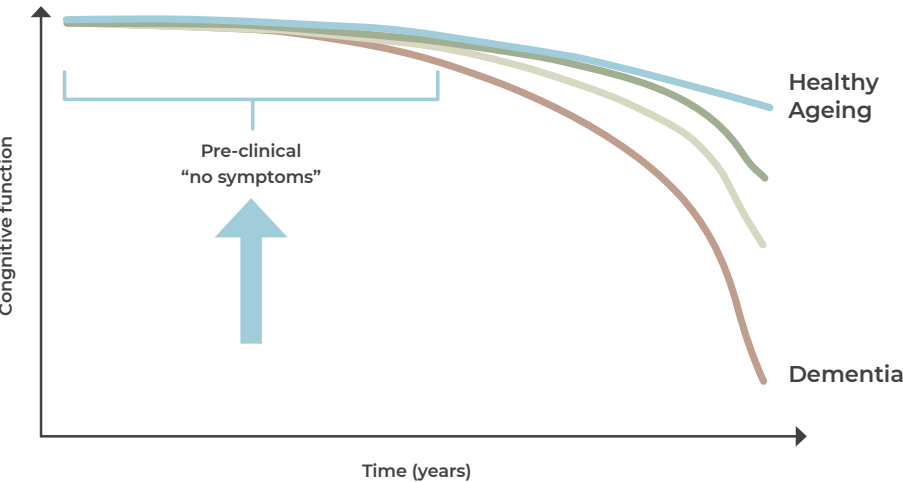
The ISLAND Project

Community Engagement and Core Research

The Island Study Linking Ageing and Neurodegenerative Disease (ISLAND) continues as a major strategic project for the Wicking Dementia Centre. ISLAND is a 10-year prospective cohort study investigating the long-term effects of reducing modifiable dementia risk behaviours on brain health across the Tasmanian population.

The 8,500 participants who have signed up to be involved in research report their modifiable dementia risk profile (DRP) at baseline and then each year thereafter in the annual ISLAND surveys. They receive a personal report of risk level (low, medium, high) across nine health-related behavioural and lifestyle domains, and data are aggregated for analysis.

The three core components of the ISLAND Project research are the annual surveys, annual cognitive tests and biennial blood biomarker sample collections. We have had a very high level of engagement with both cognitive tests and blood biomarkers.

Most of our survey respondents completed the gold standard Cambridge Neuropsychological Test Automated Battery (CANTAB) assessments in 2021, these tests are a highly sensitive, precise and objective measure of cognitive function, correlated to neural networks. Approximately half of this sample have provided a blood sample for analysis and both objective markers will be repeated in 2023.

We can already demonstrate how dementia risk behaviours have improved for ISLAND participants since 2019. The strongest change was increased cognitive activity, with 21.1% of the total ISLAND sample moving from being at high risk at baseline to low risk in October 2021. There was improvement across all domains in the DRP except for body mass index (BMI).

Encouragingly, the proportion of ISLAND participants who changed their health and lifestyle behaviours from high-risk status was significant through the improved management of cholesterol (5.3%), diabetes (5.9%), alcohol consumption (2.9%) and adherence to a Mediterranean style diet (3.1%). Involvement in ISLAND also improved knowledge about modifiable dementia risks by an average 8.4% across the sample, and this change in knowledge accounts for 16% of the improvements observed in dementia risk behaviours.

DEMENTIA RISK BEHAVIOURS FOR ISLAND PARTICIPANTS SINCE 2019
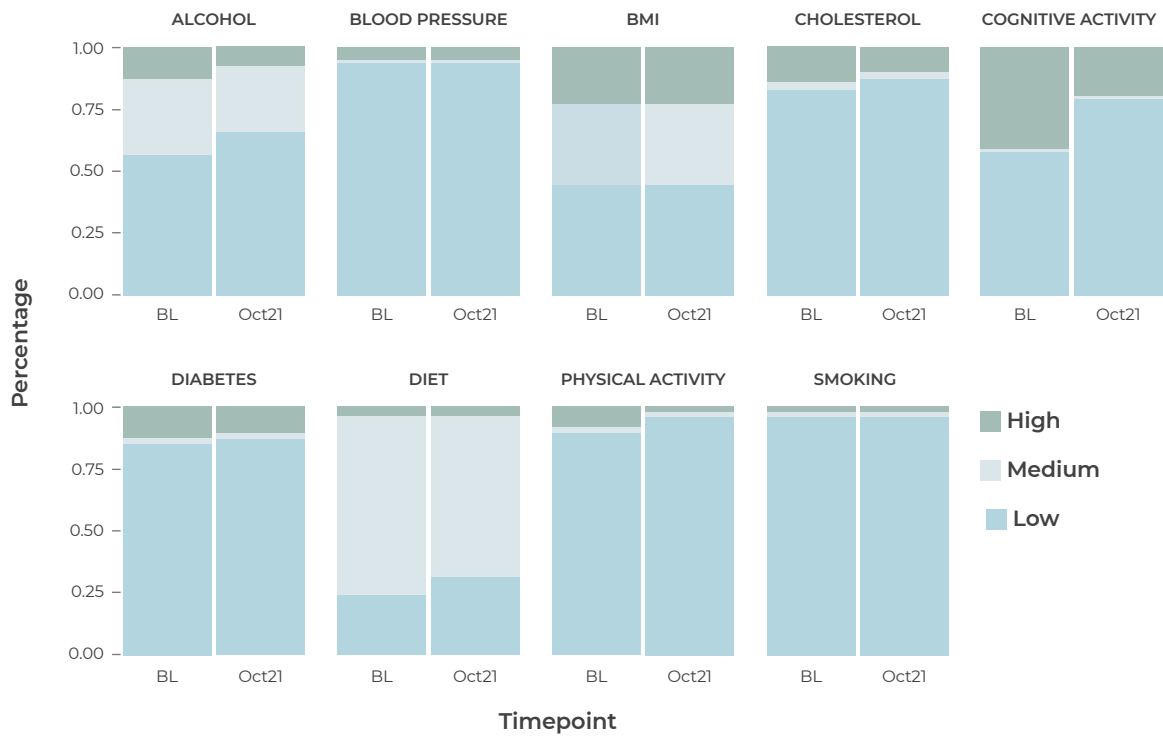
Shown here are baseline (BL) and follow up (October 2021) proportions of ISLAND participants' adherence to modifiable dementia risk behaviours. We can see over time that participants are, in general, moving towards lower risk categories, particularly in the domains of alcohol, cognitive activity and diet.

In addition to our research, ISLAND also engages with nearly **14,000 people across Tasmania** who have signed up to receive information about dementia prevention and brain health. Through this member database and relationships with a wide range of community organisations, the ISLAND Project team is actively cultivating awareness of the potential for minimising dementia risk across Tasmania. **To date we have:**

Circulated over **50 newsletters** focussed on modifiable risk to Tasmanians who have signed up.

Held three dementia prevention and wellbeing **expos** with over 300 attendees.

Collected around **1,900 blood biomarker** samples to help profile how blood markers influence risk of dementia.

Attended over **60 face-to-face** information sessions across Tasmanian communities.

Offered **four online cognitive tests** on working memory, learning and executive function, reaction times and attention and movement pattern.

Offered a range of **risk reduction webinars** covering the importance of sleep, updates on ISLAND findings, diet and stress and resilience.

ISLAND Clinic

ISLAND also offers the Tasmanian community a one-of-a-kind diagnostic service for people with memory concerns. The ISLAND Clinic – Tasmanian dementia and cognition assessment clinic – has now assessed and diagnosed more than 200 patients. The clinic sees Tasmanian residents with at least 3 months of cognitive symptoms referred by their General Practitioner and who do not yet have a diagnosis of dementia. As well as providing an important diagnostic resource for Tasmanians across the State, participants are also invited to become involved in research including gait assessment, blood biomarkers, cognitive testing and also to contribute to the Australian Dementia Network (ADNeT) data registry.

Referring General Practitioners and clients receive a comprehensive discharge report with clinic findings, possible diagnosis, and recommendations for future care and some patients are referred to other specialists for ongoing care when required. We have partnerships with I-MED Radiology and Dementia Australia to help us deliver this service and are considering the introduction of clinical trials into our clinic model during 2023. Access to the latest clinical trials for dementia will be an important opportunity for Tasmanians. Perhaps most importantly, we receive excellent feedback from our patients and their support persons.

Patient Quotes

"That was an amazing thing last Wednesday and I feel so relieved and am very happy to participate in any of your research"

"I think that it was an excellent experience and although I didn't like to be there, I was very glad that it happened. I am very glad that I saw the leaflet in my GP's office"

"We both thought it was very well managed, each group that I saw explained things and didn't just assume and were very patient and friendly"

"We really liked all the people we saw on the day"

In addition to the primary objectives of ISLAND, we have a range of complementary studies that are also offered to our research cohort.

ISLAND Campus

The Campus study continues as a research sub-project of ISLAND. It aims to measure the effects of university education in mid to late life on changes in dementia risk behaviour and cognitive performance. Over 600 ISLAND participants have taken up this opportunity and have enrolled in a University of Tasmania diploma or bachelor degree. Participants will be followed for five years, undertaking regular online assessments to measure change. Currently, we are in year three of this research activity.

Participant Quotes

"Research is so important, just knowing what we can do – each one of us needs to be responsible for our own health" (Anne)

"We Tasmanians should be supporting research on minimising dementia. It's a very good to be aware of the risks and causes. A way of giving back" (Paul)

"I had an 'a-ha' moment when I saw the comparison of my two sets of survey results – it showed me that there was something I could change for the better" (Hayley)

ISLAND Sleep Study

The ISLAND Sleep Study is an online questionnaire-based research study, looking into sleep and associated factors in older Tasmanians. Through this study, we hope to: -

- identify people who may have a specific sleep disorder called REM sleep behaviour disorder which has been associated with the development of dementia,

- investigate sleep quality and what contributes to poor sleep in the community.

ISLAND Resilience

The ISLAND Resilience initiative aims to understand how stressful life experiences influence dementia risk, and to identify factors which contribute to greater levels of stress resilience among older people. Over 1,300 ISLAND participants have engaged with this new sub-study which involves survey data collection and analysis of stress-related parameters in biospecimens (blood, hair and saliva samples). Initial findings were recently presented at the Australian Disaster Resilience Conference and ongoing data collection, analysis and reporting will continue in 2023 and beyond.
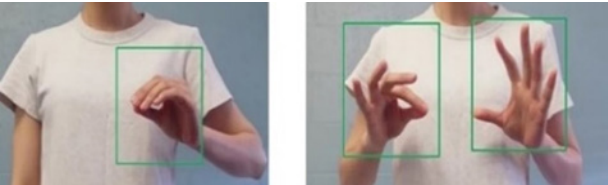
TAS Test Project

We were delighted to be awarded a 5-year NHMRC grant to develop TAS Test – an online method that analyses hand movements to predict risk of preclinical Alzheimer's disease. Just over 3,800 ISLAND participants have completed TAS Test in the last two years. There is potential for this screening method to be scalable globally, potentially transforming dementia prevention and management. This approach – using hand movements to detect Alzheimer's disease – is a world first research study, led here at the Wicking Dementia Research and Education Centre.

TAS Test was also awarded the 2021 3-year Major Project grant from the Royal Hobart Hospital Research Foundation which allowed us to incorporate the previously mentioned speech component, develop a mobile phone app, and to assess hospital patients with cognitive symptoms. Through TAS Test, we are developing national and international collaborations and our results have been presented at two international conferences.

ISLAND Partners

- St.LukesHealth
- J.O. & J.R. Wicking Trust (Equity Trustees)
- Tasmanian Masonic Medical Research Foundation
- Terry and Maureen Hopkins Foundation
- The Australian Government Department of Health and Aged Care

Our People

The Wicking Dementia Centre has continued to grow throughout 2022 with 83 staff and 36 PhD students working across many projects. The Executive oversees the strategic and operational direction of the Centre.

Distinguished Professor James Vickers

Director

James Vickers is the founding Director of the Wicking Dementia Centre. He has research interests including neurodegenerative disease (particularly Alzheimer's disease), traumatic brain injury and brain plasticity, and currently leads the ISLAND Project that seeks to reduce risk of dementia in the Tasmanian population.

Professor Anna King

Associate Director (Research)

Anna King is currently an NHMRC Boosting Dementia Research Leadership Fellow (2018 – 2022) and convenes the Wicking Dementia Centre's Neuroscience Research group. Anna also plays a key role in the Wicking Dementia Centre's educational offerings including the Bachelor of Dementia Care, and the Understanding Dementia MOOC.

Dr Kathleen Doherty

Senior Lecturer, Research Lead (MOOCs), Course Coordinator -Master of Dementia

Kathleen Doherty convenes the Wicking Dementia Centre's Translational Research group which focuses on education, care and community engagement. She is responsible for delivering the program of research which centres on our massive open online courses and growing knowledge, changing attitudes and behaviours through education and building dementia literacy. She contributes to the education program through the Master of Dementia

Caroline Gray

Business Manager

Caroline Gray oversees the business operations of the Centre, across operational and strategic functions. She leads major projects and day to day operations around budgeting, resource management, workforce planning, governance, and strategy.

Associate Professor Alison Canty

Associate Director (Learning and Teaching)

Alison Canty was centrally involved in leading the development and rapid growth of the Dementia Care Degree Program and has held an education governance role within the Centre for several years. Alison's research focuses on mechanisms of neuroplasticity, degeneration, and trauma – all of which are central to understanding the pathology of dementia.

Wicking Dementia Research and Education Centre – staff and students 2022

Staff

Dr Melissa Abela, Lecturer

Associate Professor Jane Alty (Neurology)

Dr Rachel Atkinson, Research Fellow

Lily Bartkevicius, Student & Learning Skills Advisor

Dr Larissa Bartlett, Research Fellow – ISLAND

Dr Azam Bazooband, Academic Coordinator – Skills Development Program

Sally Beadell, Student Advisor

Monique Belfer, Participation Engagement Officer – Online Education

Dr James Bender, Technical Officer

Dr Bill Bennett, Senior Technical Officer

Aidan Bindoff, Senior Research Fellow – Data Analyst

James Brady, Lecturer

Ellie Bucher, Lecturer

Associate Professor Alison Canty, Associate Director (Learning and Teaching)

Lara Carbone, Media Resources Officer Skills Development Program

Louise Carnell, Marketing and Events Officer

Dr Suanne Chear, Research Assistant

Dr Jessica Collins, Research Fellow

Dr Peta Cook, Senior Lecturer

Associate Professor Tony Cook

Dr Kathleen Doherty, Senior Lecturer, Research Lead (MO)Cs). Course Coordinator – Master of Dementia.

Helen Douglas, Project Manager – ISLAND

Dr Samuel Dwyer, Research Assistant

Josh Eastgate, Senior Technical Developer

Karin Easton, Team Leader-MSP (College Services)

Dr Claire Eccleston, Senior Lecturer

Dr Kate-Ellen Elliott, Senior Lecturer

Dr Maree Farrow, Senior Lecturer

Oliver Freeman, Senior Technical Developer

Dr David Gell, Research Fellow

Timothy Gibbons, Social Media Coordinator

Caroline Gray, Business Manager

Associate Professor Lyn Goldberg

Dr M. Shoiab Hamrah, Research Fellow

Claire Harrington, Engagement Coordinator

Dr Sharyn Hunter, Lecturer

Dr Sunny Jang, Lecturer

James Jestrimski, Award Course Administration Officer

Dr Adam Kane, Project Officer – ISLAND Project

Kim Kennedy, Clinic Administrator

Professor Anna King, Associate Director (Research)

Dr Matthew Kirkcaldie, Senior Lecturer

Alex Kitsos, Data Analyst

Dr Maneesh Kuruvilla, Lecturer

Dr Kate Lawler, Lecturer

Dr Emma Lea, Senior Lecturer

Karina Lei, Senior Technical Developer

Dr Jacqueline Leung, Lecturer in Dementia

Dr Pauline Marsh, Senior Lecturer

Graeme McCormack, Senior Technical Officer

Dr Scott McDonald, Research Fellow – Neuropsychology

Helga Merl, Lecturer

Victoria Nash, Project Manager – Online Education

Dr Hoang Nguyen, Lecturer

Chris Parker, Manager Digital Futures

Sladana Pavkovic, Lecturer

Dr Sharn Perry, Lecturer

Dr Andrew Phipps, Research Fellow

Samantha Poulson, Media Resources Officer

Dr Fiona Proudfoot, Research Assistant

Susan Quarmby, Project Lead, Short Courses

Sanket Raut, Lecturer

Dr Eddy Roccati, Research Fellow – Tasmanian Healthy Brain Project

Anthony Ray, Senior Administration Officer, Education Programs

Catherine Robertson, Executive Assistant

Dr Alice Rota-Bartelink, Lecturer

Eddie Safarik, Media Resources Officer

Dr Katharine Salmon, Coordinator, Dementia and Cognition Clinic

Tim Saunder, Data Analyst

Alex Sella, Research Assistant

Ian Smith, Senior Technical Developer

Dr Duncan Sinclair, Senior Lecturer

Dr Rebecca St George, Research Fellow

Dr Megan Stronach, Lecturer

Dr Kimberley Stuart, Research Fellow

Dr Joanna Sun, Relationship Manager

Dr Jana Talbot, Research Assistant

Dr Laura Tierney, Research Fellow

Distinguished Professor James Vickers, Director

Tanya Wadwell, Student Support Team Leader

Dr Adele Woodhouse, Senior Lecturer

Jenny Shu, Educational Technologist

Dr Jenna Ziebell, Senior Lecturer

Students

Aidan Bindoff, PhD Candidate

Guan Huang, PhD Candidate

Aidan O'Mara, PhD Candidate

James Brady, PhD Candidate

Ensieh Izadi, PhD Candidate

Gongbu Pan, PhD Candidate

Samantha Bramich, PhD Candidate

Fariha Kabir, PhD Candidate

Sladana Pavkovic, PhD Candidate

Ellie Bucher, PhD Candidate

Yashoda (Yashi) Koirala, PhD Candidate

Thalia Perez-Suarez, PhD Candidate

Sueanne Chear, PhD Candidate

Ross Langley, PhD Candidate

Kaylee Rudd, PhD Candidate

Jan-Leng Cheng, PhD Candidate

Kerri Magnussen, PhD Candidate

Tara Sinclair, PhD Candidate

Adelene Chiam, PhD Candidate

Radhika Mani, PhD Candidate

David Stellon, PhD Candidate

Anisuzzaman (Novel) Chowdhury, PhD Candidate

Ignacio Martinez Escobedo, PhD Candidate

Sharon Stoddart, PhD Candidate

Nina Daniels, PhD Candidate

Lyzette Matthews, PhD Candidate

Bao Ngoc Tran, PhD Candidate

Laura De Paoli, PhD Candidate

John McManus, PhD Candidate

Xinyi Wang, PhD Candidate

Yasmine Doust, PhD Candidate

Helga Merl, PhD Candidate

Marlee Wells, PhD Candidate

Hannah Fair, PhD Candidate

Nkoli Mmako, PhD Candidate

Getachew Yitbarek, PhD Candidate

Sigourney Costa, Rhonda Ewart Honours Scholarship in Dementia Care

Zane Farnum, Wicking Centre Neuroscience Honours Scholarship in Dementia Research

In The Spotlight: Wicking Centre Staff

Pauline Marsh
Senior Lecturer

Pauline Marsh is an interdisciplinary health geographer, who explores innovative, community and nature-based solutions to improve wellbeing and quality of life. Pauline joined the Wicking Dementia Centre in August 2022. Her research explores how being in nature improves a person's quality of life, and she is particularly interested in the therapeutic benefits of nature connection for people with cognitive, emotional and physical health challenges.

Much of Pauline's work explores the creation and support of health-enabling environments for individuals and communities. This research concerns the intersections between age, dementia, mental ill health, disability, death and grief with the outdoor environment around us. Pauline's research expertise is in qualitative, creative and participatory methods, and has used story-gathering and filmmaking alongside more traditional modes of data collection. Her study sites have included community gardens, areas of ecological restoration, conservation areas and other outdoor green spaces.

One of Pauline's greatest achievements is the co-founding of DIGnity Supported Community Gardening, a not-for-profit organisation offering a unique model of therapeutic horticulture in community gardens in Southern Tasmania. She is the lead investigator on the Nature Connection Storytelling Project (part of the 7-year National Environmental Science Program), and co-lead of the University of Tasmania interdisciplinary Healthy Landscapes Research Group.

Currently Pauline is exploring the possibilities of establishing a nature-based living lab in Tasmania. Her vision is to help people continue to engage with nature while living with dementia. She hopes to partner with nature-connecting community organisation to establish various outdoor research sites across Tasmania. The project will enable people living with dementia, their care-partners, and others, to enjoy the experience of nature connection and its benefits, while together we explore the barriers, facilitators, and impacts.

Dr Eddy Roccati
Research Fellow

Dr Eddy Roccati is a Research Fellow with an interest in the epidemiology of Alzheimer's disease and other forms of dementia, in particular the early detection of biomarkers and the preventive potential of modifiable lifestyle risk factors. His research extends across several cohort studies, including the Tasmanian Healthy Brain Project (THBP) and ISLAND Project.

Eddy's research revolves around using technology, open data and modifiable risk factors to reduce risk of Alzheimer's disease and other forms of dementia. In 2022, he led a group of researchers to win first prize in the Alzheimer's Disease Data Initiative (ADDI) Neurotoolkit (NTK) Data Hackathon. The competition provided teams with an extensive dataset of biological, demographic and cognitive data and asked entrants to showcase innovative use of ADDI's new platform, the AD Workbench and the NTK App, developed by Roche. Teams were given two challenges: an Amyloid, Tau and Neurodegeneration (ATN) framework challenge and an additional Diagnostics and Classifications challenge. Team Wicking, made up of Eddy Roccati, Aidan Bindoff, Joshua Eastgate and Jay Borchard, utilised the platform to investigate how modifiable risk factors were associated with biological markers of Alzheimer's disease. They won first prize in the Patient Value and Clinical Impact category!

In 2023, Eddy plans to progress several ongoing projects into early detection and risk reduction. Recently he, and a team of Wicking Centre researchers, published the first systematic review into the prevalence of dementia risk factors among migrants, refugees and asylum seekers in Australia. This review paper found that, compared with Australian-born participants, migrant populations had a higher prevalence of depression, social isolation, physical inactivity and diabetes. Although there was large heterogeneity between studies, these risk factors could be ideal targets for intervention in the future. Eddy is currently working towards publishing biomarker results from THBP and ISLAND blood collections in 2021 and 2022. He is also collaborating with researchers at Wicking Centre, ADDI and Roche on a publication extending from the work completed as part of the NTK Hackathon.

Dr Kathleen Doherty
Senior Lecturer

Dr Kathleen Doherty is deeply interested in building awareness of dementia through education with a view to improving the lives of people living with dementia and those who provide formal or informal care, and equipping people to make lifestyle changes to reduce their dementia risk.

Kathleen believes that effective education has the potential to not only build knowledge, but to change attitudes and beliefs, motivate behaviour and improve the outcomes for everyone. This relates to the concept of dementia literacy which is central to one of the key translational research themes at the Wicking Dementia Centre. Dementia literacy is the ability to access, appraise and apply information about dementia and to inform decision making, whether it is about aspects of care or pathways to prevention. Kathleen's work on the Understanding Dementia MOOC has shown that engaging with the MOOC not only improves knowledge but reduces stress and enables a change in attitude toward care.

Kathleen wants to help the community understand more about dementia and with her colleagues has built a suite of tools to evaluate what people know about dementia. Her recent focus has been to complement the Dementia Knowledge Assessment Scale (DKAS) with the Knowledge of Dementia Risk Reduction (KoDeRR) survey, which assesses understanding of multiple domains of dementia risk knowledge including the capacity to discriminate misconceptions about dementia risk from evidence-based risk factors. Approximately 20% of the population still believes there is little you can do to reduce dementia risk and many misconceptions persist.

Currently Kathleen is exploring the effect of engaging with the Preventing Dementia MOOC on knowledge of dementia and behaviour change. Engaging with the Preventing Dementia MOOC improves knowledge of dementia risk factors and particularly improves the capacity to appraise information – one of the key hallmarks of dementia literacy. Personalisation of the risk reduction message is an important step in engaging in the behaviour change aspect and Kathleen is exploring this using the Dementia Risk Profile.

There are 12 recommendations for reducing risk for cognitive decline released by the World Health Organisation:

1. Be physically active
2. Stop smoking
3. Eat a balanced diet, like the Mediterranean diet
4. Drink alcohol in moderation
5. Cognitive training
6. Be socially active
7. Look after your weight
8. Manage any hypertension
9. Manage any diabetes
10. Manage any cholesterol
11. Manage depression
12. Look after your hearing

In The Spotlight: Students

Samantha Bramich

PhD Project: REM Sleep Behaviour Disorder: Prevalence, Cognitive-Motor Characteristics, and Olfactory Function

Samantha commenced her doctoral research with the Wicking Dementia Centre in 2021 studying the prevalence and profiles of isolated REM sleep behaviour disorder (iRBD). She completed her undergraduate studies at the University of Tasmania before taking on a role as a sleep scientist at the Launceston General Hospital. This fuelled her interest in the way sleep impacts health and disease, which led her to complete a Master of Science (Sleep Medicine) at the University of Sydney.

iRBD is a sleep disorder in which people 'act out' their dreams. Usually during rapid eye movement (REM) sleep, the body is completely relaxed and cannot move. But in iRBD, changes in the brain cause people to act out what they're dreaming, which often involves violent kicking and punching movements. Research suggests that iRBD is most common in men over 50 years and may increase the risk of developing a neurodegenerative disease, such as Parkinson's disease or dementia, in later life.

However, little is known about what factors are associated with the progression of iRBD to other diseases, or even how many people have the disorder. Samantha's research will investigate the prevalence of iRBD in Tasmania using a combination of self-report questionnaires and home-based sleep studies. She and her research team will also explore the features that are most associated with iRBD, such as smell loss and movement changes, with the aim of identifying specific iRBD profiles that will assist in identifying who is most at-risk of developing dementia or other neurodegenerative diseases.

Samantha's 2022 highlights include being selected as a finalist in the Sleep Health Foundation's Emerging Sleep Hero Award and being invited to present her research to several audiences, including listeners of ABC Radio Hobart and Print Radio Tasmania. With her team, Samantha has published two scientific papers: one discussing diagnostic methods for iRBD, and another aimed at assisting doctors to identify people who may have iRBD in general practice. A particular highlight of Samantha's PhD journey has been engaging with many of the wonderful ISLAND participants through webinars and in-person at the northern ISLAND expo.

Jan-Leng Cheng

PhD Project: Investigating the Role of SARM1 in Axon Degeneration using Human Induced Pluripotent Stem Cells

Jan-Leng Cheng moved to Hobart from Malaysia in 2016 to start her university studies, joining the Wicking Dementia Centre in 2017 as an undergraduate summer student. Through obtaining a Bachelor of Medical Research in 2019 and Bachelor of Medical Research (Honours, First Class) in 2020, she has developed a keen interest in using stem cells as a tool for neuroscience studies. Jan commenced her PhD studies in 2021, where she is using induced pluripotent stem cells to study the biological pathways of neurodegeneration.

Neurodegeneration is a wide-ranging phenomenon that can arise from many root causes here, ranging from physical trauma to genetic predisposition and to toxin exposure. It is a complex process, but it appears that a specialised structure of brain cells (neurons) known as the axon, which are responsible for cell-cell communication, are often the most vulnerable. Research has investigated the molecular pathways of axon degeneration to try and uncover a common denominator as a candidate for therapeutic treatments. Through these studies, researchers have identified the SARM1 protein as a key player in causing some forms axon degeneration and have turned their efforts to investigating whether SARM1 is involved in all forms of neurodegeneration.

Currently, there is evidence to show that blocking SARM1 can protect axons from degeneration in models of traumatic brain injury and chemotherapy-induced peripheral neuropathy. However, it is largely unknown whether SARM1 plays a role in promoting neurodegeneration in common diseases like Alzheimer's disease, Parkinson's disease, and motor neuron disease, or if inhibition of SARM1 can protect axons in these diseases. Jan's PhD research seeks to contribute to the current knowledge surrounding SARM1 and its role in dementia and wider neurodegenerative conditions.

Jan's 2022 highlight includes generating a new human stem cell-based model of SARM1 inhibition using gene editing technology, and she presented this at the Australasian Neuroscience Society 2022 Annual Science Meeting (Melbourne, Dec 5-7th). She is now using this new SARM1 inhibition model to investigate its role in neurodegeneration caused by different insults.

Ignacio Martinez Escobedo

PhD Project: Potentiating the impact of the Preventing Dementia MOOC through innovative educational design

Originally from México, Ignacio joined the Wicking Dementia Centre in 2021 after moving from Texas to Tasmania in 2020 with his partner. In Texas, Ignacio worked as an instructional designer at higher education institutions. Instructional designers work with educators to develop and enhance online courses and create engaging learning content. At the start of the COVID-19 pandemic, Ignacio helped his university adapt quickly to an online learning environment by training 150 teaching faculty on the best practices for creating and delivering online learning courses. In doing this, he was the first instructional designer in the state of Texas to adapt a traditionally face-to-face workshop to an online setting.

The impact of the Wicking Dementia Centre's MOOCs was known to Ignacio, even back in Texas. Once he was living in Tasmania an opportunity arose to develop a PhD research project that drew upon his experience in course design and development to help improve dementia prevention education. Supervised by Claire Eccleston and Kathleen Doherty, Ignacio started his PhD in June 2021.

In his project, the team saw a significant opportunity to engage with Preventing Dementia MOOC participants who speak English as an additional language to create tailored visual content, infographics, that deliver complex health information in appealing, engaging, and accessible ways. To date, Ignacio and his team have undertaken focus groups with a cross sectional group of participants who speak multiple different languages to co-create infographics which deliver key prevention messages. This codesign process has offered valuable insights into participants' perceptions and assumptions regarding dementia risk factors.

The knowledge gained from this project may help make informed decisions about the best way to effectively deliver complex health education to groups of people who might be unable to access and use information in its current format. Infographics have the potential to be used by course participants to share important health information with non-participants and therefore extend the reach of the Preventing Dementia MOOC.

Nina Daniels

PhD Project: Understanding Neuronal Changes in Ageing and Disease.

Nina joined the Wicking Dementia Centre in 2018 during her undergraduate degree, and this sparked her interest in neuroscience, particularly an interest in researching dementia. Nina continued her studies at the Wicking Centre, completing her Honours degree and is currently in the third year of her PhD.

Research into the pathology occurring in different types of dementia has highlighted several proteins that undergo changes during disease. One such protein is called tau, and we understand that in diseases such as Alzheimer's disease and Frontotemporal Dementia, there are alterations to this protein, leading to accumulations which may disrupt normal cellular processes. However, the exact effects and role of tau in these diseases is not yet completely understood. Currently we do not have an effective treatment for either of these diseases, and without understanding the pathological changes and mechanisms behind them, we cannot effectively develop one.

During Nina's PhD, she aims to determine whether tau has any direct effects on the neurons in these diseases, compared to the normal ageing brain. In addition to this, a large portion of Nina's PhD project encompasses the idea of using a particular gene as a therapeutic target to treat the pathology caused by the changes of tau, and whether there would be any off-target effects on other components of the neurons or neural pathways, as a result of this.

One of the main highlights of Nina's PhD has been working with multiple high schools to create workshops, give talks and lab tours, and increase students' understanding of dementia, as well as highlight some research and studies that are currently taking place at the Wicking Dementia Centre. As dementia is so prevalent around the world today, Nina believes it is of high importance that we spread awareness to as many individuals as possible and finds it incredibly rewarding to be able to share the knowledge that she has gained so far whilst studying at the Wicking Dementia Centre.

Vale: Dr Maree Farrow

Dr Maree Farrow, Senior Academic Lead, Preventing Dementia Massive Open Online Course (MOOC)

In September 2022, the staff at Wicking Dementia Centre came together to celebrate the life of Dr Maree Farrow who was an integral staff member of the Centre, and a great friend and colleague to many.

The Wicking Dementia Centre staff were joined by Maree's family, and we gathered to share memories and celebrate her life and the impact that she had here at the Centre, and on dementia research more broadly.

During Maree's career her contributions were substantial across teaching and research, as well as with engagement out to the communities that we connect with. Only a few days prior to her passing, Maree was assisting with a grant application that would bring her work on the Preventing Dementia MOOC and the Dementia Risk Profile tool to a wider Australian audience. Maree had such rare expertise on the public health aspect of dementia. She will be missed by all who knew and worked with her at the Wicking Dementia Centre.

A gift to the Wicking Dementia Research and Education Centre can take many forms and no matter the size of the gift it has a real impact. It can be the difference in a student's life, assist in a breakthrough research discovery that will change people's lives, or help create positive outcomes for our community.

Visit **utas.edu.au/wicking/about/donate** to find out more.