

RPH RESEARCH FOUNDATION NEWSLETTER

# Advancing Health



*Image: Dr Collin Chin and the RPH Haematology team viewing a specimen using a multi-head microscope.*



# CEO UPDATE

As we welcome Spring, I am delighted to share some exciting updates and achievements with you, our dedicated donors, who make our progress possible. Your unwavering support continues to drive our mission, enabling groundbreaking research and transformative healthcare solutions for the people of Western Australia.

I am proud to share that we have received a generous \$1.5 million in funding thanks to a new scheme announced by the Cook Government to enhance our research facilities.

Built in 1993, our facility comprises a blend of wet and dry laboratories (including PC2 laboratories), office space, and clinical trial facilities. To continue providing world-class research capabilities, our PC2 laboratories require significant capital investment to refurbish the existing infrastructure, ensuring they remain compliant with current standards and encompass best-practice design.

Thanks to matched funding from the inaugural Future Health Research and Innovation (FHRI) Fund Enabling Scheme, we are embarking on a \$3 million project to construct new OGTR-Certified PC2 Laboratories. This significant investment will bolster our collaborative efforts with researchers from across Western Australia. As the primary laboratory space for East Metropolitan Health Service (EMHS) researchers, this refurbishment is crucial for supporting bench-to-bedside research and ultimately delivering the best outcomes for WA patients.

Continuing to strengthen the WA research space is essential for advancing medical knowledge and improving patient care. In this newsletter you will hear about some of the innovative work currently taking place in the newly opened Centre for Advanced Therapies, based in our research facility. This newsletter also includes our 2024 Nursing and Allied Health Grant

recipients. This year's grants encompass a diverse range of projects aimed at tackling critical healthcare challenges.

None of this would be possible without the support of donors like you. Your contributions enable us to pursue ambitious projects and drive meaningful change in healthcare. On behalf of the RPH Research Foundation team, I extend my deepest gratitude for your generosity and commitment. Together, we are making a profound difference in the lives of countless individuals.



*Cate*  
**CATE CASSARCHIS**  
CHIEF EXECUTIVE OFFICER



## AN APPLE A DAY KEEPS THE DOCTOR AWAY

Research has shown that apples can reduce your risk of cancer, diabetes and heart disease. Apples can enhance your gut health, help your heart and improve brain function due to better blood flow.

RPH Research Foundation Fellow Dr Catherine Bondonno, together with her team at the University of Western Australia (UWA) and Edith Cowan University (ECU), conducted research that demonstrated eating apples with the skin left on can improve cardiovascular health.

Apples are packed full of fibre, vitamins and flavonoids (commonly referred to as antioxidants). Flavonoids are mainly found in the skin of the apple.

“Dr Bondonno’s research has shown that improvements in blood vessel function are seen when apples are eaten with the skin, compared to when they are peeled,”

“Consuming as little as two to three apples each week is associated with a lower risk of heart disease,” she said.

Dr Bondonno was involved in a study following 1400 Perth women for 15 years and found eating an apple a day resulted in a 35% reduced risk of dying.

Dr Bondonno and her team screened over 100 apple variations to determine which apples had the highest concentration of the important flavonoid compound.

“Flavonoids work by increasing a molecule that is produced in blood vessels and play a critical role in cardiovascular health by regulating blood pressure and flow,” Dr Bondonno said.

Dr Bondonno's top three WA apples for both health benefits and taste are the new BRAVO apple, which is bred specifically for its high flavonoid content, Pink Lady and Golden Delicious.

To learn more visit [www.rphrf.org.au/apples](http://www.rphrf.org.au/apples) to listen to Dr Catherine Bondonno's podcast with Dr Michael Mosely.

## DON'T FALL FOR IT: HEALTHY AGEING AND FALLS PREVENTION

Falls are now recognised as a rising global problem and a serious threat to older adults, causing health problems and loss of independence. Did you know that every 17 minutes in WA, someone is hospitalised due to a fall? Surprisingly, inexpensive, and easily completed activities can greatly reduce falls and boost your confidence. It's never too late to take action and reduce your risk.

Join us to hear from Professor Anne-Marie Hill at our free Community Health Talks at the City of Perth Library to learn more about her important research into falls prevention and healthy ageing.

Professor Anne-Marie Hill (UWA) is a Senior Principal Research Fellow supported by the RPH Research Foundation who has over 30 years of clinical experience working with older people to improve their health and well-being. Attend this interesting community health talk to learn some practical strategies for fall prevention and hear about the research taking place here in Perth.



**Date:** Tuesday 17 September 2024  
**Time:** 1PM – 2PM  
**Venue:** City of Perth Library, 573 Hay Street

Seats are limited. Scan the QR Code to RSVP.



### Are you at risk of dementia, heart disease or falls?

*Join Dr Catherine Bondonno's new Wise and Well study*

Volunteers are invited to participate in the Wise & Well Study which seeks to assess the health impacts of a diet and lifestyle behaviour change program. The team are seeking woman aged between 60 and 80 years to participate in a 12 month study.

To learn more about the trial contact [wiseandwell@ecu.edu.au](mailto:wiseandwell@ecu.edu.au).



# Nursing and Allied Health Grants 2024 Recipients Announced

The RPH Research Foundation has announced the recipients of the Nursing and Allied Health Grants 2024, with recipients working on novel research projects aimed at enhancing patient care within the East Metropolitan Health Service. The RPH Research Foundation has awarded a total of \$72,861 across five research projects.

Congratulations to the Nursing and Allied Health Grants 2024 recipients.



**Exploring the patient's experience when allocated to an isolation room to manage multi-resistant organisms**

**Funding Amount: \$15,000**  
**Coordinating Principal Investigator: Ms Gabrielle Calleja**

This research project investigates how to improve the patient experience and reduce the mental health impact on patients colonised with Multi-resistant organisms (MROs). MROs, commonly referred to as "superbugs," are bacteria that cannot be killed using common antibiotics and pose significant challenges in healthcare settings. Isolation is a key part of infection control measures in hospitals. However, these measures can have a negative impact on the mental health of patients, especially for patients from diverse backgrounds.

The study aims to understand patients' concerns and emotional experiences related to MRO colonisation and isolation, gathering insights to improve patient-centred care. By exploring these aspects, the project seeks to enhance support for individuals affected by MRO colonisation and potentially influence future treatment approaches.



**Improved Lung Function Testing for Transgender People**

**Funding Amount: \$15,000**  
**Coordinating Principal Investigator: Mr Finn Chilcott**

In Australia, there has been a rise in transgender individuals seeking gender-affirming healthcare and requiring healthcare services, including at Royal Perth Hospital. Transgender people face numerous barriers in accessing healthcare. Additionally, transgender, intersex and/or gender diverse (TIGD) people have higher rates of anxiety, depression and are at increased risk of respiratory conditions like Chronic Obstructive Pulmonary Disease (COPD) and asthma.

However, assessing respiratory health in transgender populations is challenging due to a lack of tailored reference values. This research project aims to collect lung function data from transgender, intersex, and gender-diverse individuals to address this gap. By understanding how gender-affirming therapies affect lung function through improved reference values, the project seeks to provide evidence-based guidance for healthcare professionals, leading to more accurate diagnosis and treatment. Ultimately, this research aims to enhance healthcare for transgender and gender diverse individuals, contributing to a more inclusive and equitable healthcare system.



**How well do children and adolescents who sprain their ankle or knee recover from their injury?**

**Funding Amount: \$13,891**  
**Coordinating Principal Investigator: Dr Karen Richards**

Many children and adolescents attend the Emergency Department (ED) with a sprain of their ankle or knee. These types of injuries can lead to pain, difficulties moving around, worry and inability to take part in school, hobbies or sports. Most of what we know about healing times and the recovery from ankle or knee sprains comes from adult studies. Many adults with sprains have ongoing problems with their ankle or knee or re-injure it soon after returning to their usual activities. However, little is known about recovery times and injury recurrence in children.

This study aims to assess the recovery and potential re-injury rates in children and adolescents treated for ankle or knee sprains at the Midland ED over six months. With this research, clinicians can address gaps in care and enhance the well-being of young patients in Midland and beyond.



**Blending digital and clinician support to help people with chronic pain and mental health concerns**

**Funding Amount: \$15,000**  
**Coordinating Principal Investigator: Dr Robert Schutze**

This project aims to reduce barriers to healthcare for people struggling with chronic pain and mental health concerns. One in five Australians live with persistent daily pain. People with chronic pain are more likely to also have mental health conditions than people who do not live with chronic pain. Yet access to whole-person health care that addresses both pain management and mental health needs is limited.

To tackle this problem, researchers and healthcare professionals are developing a new approach called "Blended Pain Care." Researchers and health professionals are working with people who live with chronic pain to find new ways of delivering mental health care and pain management support.

The project also aims to address the barriers that prevent many individuals from accessing mental health support for their chronic pain. By leveraging digital technologies, the project seeks to increase access to evidence-based care for pain-related mental health concerns.



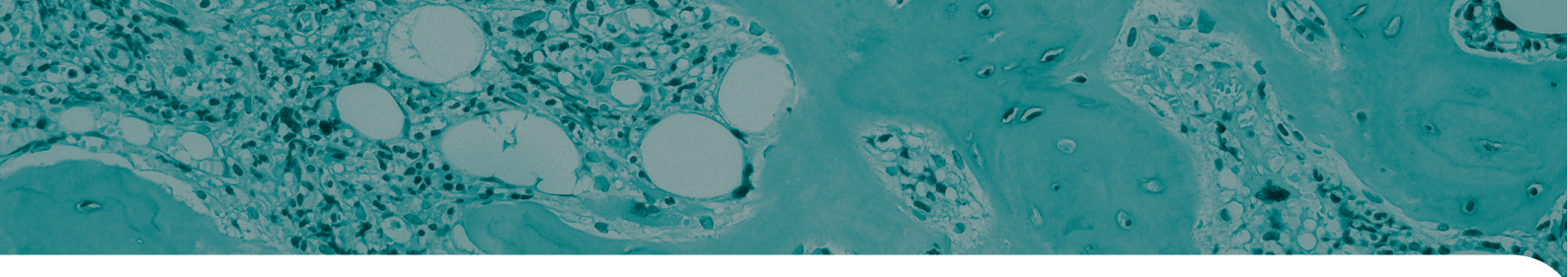
**Developing a way to measure if people are engaged in their rehabilitation in the Intensive Care Unit (ICU)**

**Funding Amount: \$13,970**  
**Coordinating Principal Investigator: Ms Sheldon Walker**

This research project focuses on finding methods to personalise rehabilitation strategies for patients who have prolonged stays in intensive care units (ICUs). ICUs are specialised units that provide life-saving care to critically ill or injured patients. Improved survival rates coupled with an ageing population have resulted in unprecedented demand for, and longer admissions in, the ICU. Long ICU stays have long-term consequences for patients, with survivors often grappling with PTSD, depression, cognitive dysfunction, and physical decline. Given these burdens, understanding how to improve patients physical function on hospital discharge is crucial.

This research project aims to explore individual preferences for rehabilitation strategies in ICU patients and develop a measure of cognitive engagement based on physiological indicators. This will help clinicians personalise rehabilitation approaches, thereby improving outcomes and quality of survivorship.





# TREATING INCURABLE CANCERS – IMMUNE EFFECTOR CELL THERAPIES

**Coordinating Principal Investigator: Dr Collin Chin**  
**Donated in Memory of Margaret Alison Melvin: \$20,000**  
**Royal Perth Hospital**

Immune effector cell (IEC) therapies harness the power of the immune system to combat cancer cells and represent a new era in the battle against cancer. One type of IEC therapy is chimeric antigen receptor (CAR) T cell therapy, where clinicians take immune cells from the patient's blood, genetically modify them in the laboratory to recognise cancer cells and then reinfuse them into the patient's bloodstream to kill cancers. IEC therapies such as CAR T-cell therapy have the potential to cure patients with otherwise fatal cancers.

While these new treatments show immense promise, they are very expensive, and more than half of patients relapse or do not respond to the treatment. This project aims to predict which patients will benefit most from IEC therapies. This will help improve patient outcomes, reduce healthcare costs and help researchers develop strategies to overcome resistance to IEC.

To achieve this the project will utilise spectral flow cytometry, a technology that analyses single blood cells using

lasers, to characterise the T immune cells of blood cancer patients treated with IEC therapy. Using this technology, researchers will characterise the patterns of T cell exhaustion in these patients to identify patients who will benefit most from the therapy.

The team will also identify patients who have poor clinical outcomes and develop methods to overcome treatment resistance based on the data they collect. For example, if specific inhibitory receptors are overexpressed, future treatments might use checkpoint inhibitors to boost the effectiveness of the therapy. By improving patient selection, this study aims to reduce healthcare costs by prioritising resources and treatment for patients who will benefit most from them. Patients resistant to IEC therapy can be guided to other treatment options such as clinical trials. This potentially represents a multi-million-dollar benefit for WA Health as CAR T-cell therapy becomes the standard of care for a select population of

patients with blood cancers.

By examining blood samples from patients before and after treatment, the team aims to understand how these therapies affect T-cells and improve the effectiveness of cancer treatments, ultimately leading to better outcomes for patients with blood cancers like B-cell non-Hodgkin lymphoma.





# Be the spark...

**Brighten tomorrow through a gift in your Will**



## INCLUDE A CHARITY

A gift in your Will can help create a better world, because any gift left in your Will makes a difference and will leave a lasting impact on the lives of others, long into the future.

A gift to the RPh Research Foundation can help fund research like Dr Chin's to find new treatments and improve patient outcomes for generations to come.

*Include a Charity* takes place from September 2nd to 8th and helps encourage people to think about the

difference they can make by leaving a gift in their Will to charity. The theme for this year, "Be the Spark", is based on the continuing impact your Gift in Will can have to ensure your legacy lives on and positively impacts people for generations to come.

Thanks to our partner Safewill, we are offering **free Wills to all our supporters from the 2nd to the 30th of September 2024**. This is to make it easier for all Australians to access easy and affordable Wills.

To write a Will for free this September visit <https://safewill.com/rphresearch> or scan the QR code below.

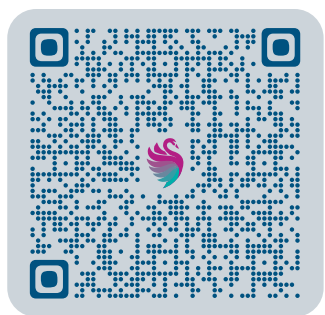


Image Above (Left to Right): Mr John Palermo, Dr Lesley Bennett, Dr Zlatibor Veličković, Ms Cate Cassarchis, Hon. Stephen Dawson MLC, Mr Ben Noteboom

## CENTRE FOR ADVANCED THERAPIES UNVEILED BY MINISTER OF MEDICAL RESEARCH

A new Royal Perth Hospital Centre for Advanced Therapies has opened in the RPH Research Foundation's research facility to bring individualised patient treatment options to Western Australian patients.

In November 2023, the Honourable Stephen Dawson MLC Minister for Emergency Services; Innovation and the Digital Economy; Science; Medical Research; Minister Assisting the Minister for State and Industry Development, Jobs and Trade visited RPH Research Foundation for the official opening of the new Royal Perth Hospital Centre for Advanced Therapies (RPH CAT).

This cutting-edge facility is dedicated to the development of advanced therapy medicinal products (ATMPs), providing a beacon of hope for patients with limited treatment options. ATMPs are biological medicines for human use that are based on genes, cells or tissues.

The RPH CAT, supported by a generous grant from the Royal Perth Hospital Research Foundation (RPHRF), is a significant step forward in addressing the current lack of space for the development of ATMPs for clinical use. This facility will lead the way in developing and manufacturing groundbreaking therapies, such as bacteriophage therapy for antibiotic-resistant infections, tumour-infiltrating lymphocytes for melanoma

treatment, and corneal endothelial cells for the treatment of corneal oedema and visual impairment.

The CAT is established under the Bill and Ray Dobney Cell and Tissue Therapies WA (CTTWA). Thanks also to a Gift in Will in memory of Felix Viktor and Verena Vonesch, the RPH Research Foundation has granted funds to A/Prof Zlatibor Veličković, CTTWA's Director, to create a new space for the development of ATMPs. The grant covers laboratory space and the purchase of specialised equipment for automated cell processing.



RPH CAT will enhance Western Australia's manufacturing capability for early-phase trials of locally and internationally developed ATMPs. The Centre, now located within RPH

Research Foundation's research facility, will also serve as the hub for health research and innovation for ATMP in WA and nationally.

The Foundation takes pride in hosting the Centre within our research facility and having A/Professor Zlatibor Veličković and his team in our building.

The inauguration of the RPH CAT highlights Western Australia's commitment to reducing the burden of disease in communities and fostering economic growth through advanced therapeutic research. It

also underscores the collaborative spirit of the research community, exemplified by the partnerships between CTTWA, Telethon Kids Institute, Harry Perkins Research Institute, and Lions Eye Institute, among others.

This momentous occasion marks a pivotal step forward in the journey towards enhanced healthcare solutions and paves the way for a brighter, healthier future for all.





# Today's research, tomorrow's treatment



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