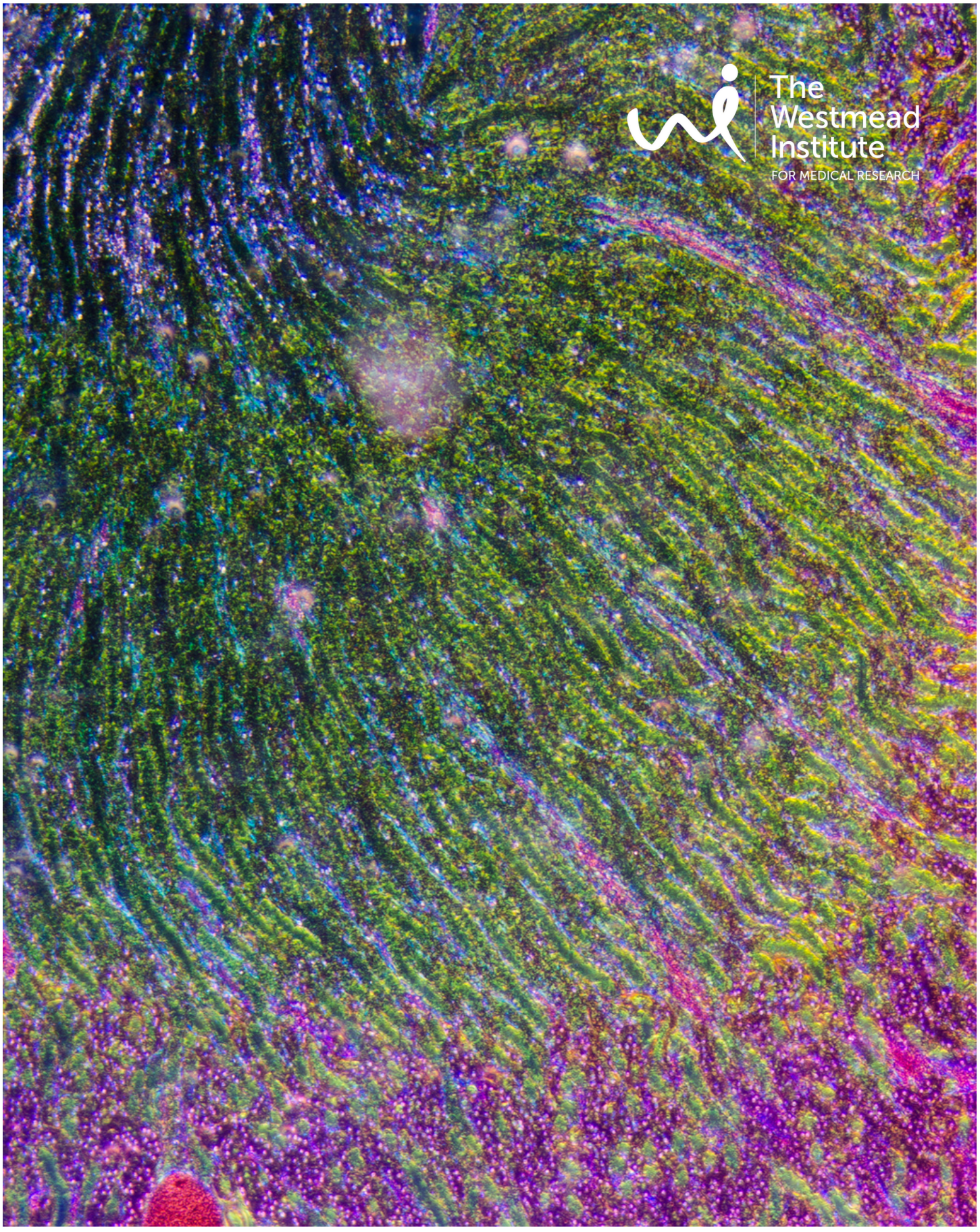


ISSUE 7 SPRING/SUMMER 2023-24

DISCOVERY

Message from the Foundation

Recently the WIMR Foundation developed a three-year strategy for the Foundation. It was an interesting and fruitful endeavour which has defined a clear direction for the Foundation as we work towards our mission to raise funds to support the medical research conducted at WIMR.

The Foundation aims to familiarise people with WIMR's incredible research. We hope to inspire others to join us by friend-raising and fundraising so that our important work not only continues, but can accelerate, improving patient outcomes in Australia and around the globe.

We enjoy having visitors to WIMR. We are proud to showcase what we do, and our researchers love to share their stories and passions in their chosen fields.

I recently read an article written by award winning journalist Julia Baird for Compass. The article intrigued me with the title, 'Awe Hunters: Finding the extraordinary in the everyday.' Julia described awe hunters as, "...people who travel far and wide to experience awe."

Julia went on to say, "Awe is something not easy to define, but usually involves stopping in your tracks, being amazed by something and, often, feeling small against the full scale of the universe."

Julia says that, "...experiencing awe can make us happier, healthier, kinder and more connected to each other. "

As I read Julia Baird's thoughts on awe, I thought of WIMR.

We are lucky to experience awe here by witnessing the possibilities uncovered by our researchers on a daily basis. Mini brains in dishes shining a light on Alzheimer's disease; beating heart stem cells to reinvigorate damaged heart muscle; and phage therapies solving antibiotic resistance all have the potential to save lives. The impact these and many other discoveries will have on humanity is unknown, limitless, and truly awe inspiring.

We are grateful to our own awe hunters who enable our researchers with their generous support and vision, so that we can continue to improve treatments, and prevent and cure some of the most serious health issues of our time.

I invite you to visit WIMR in search of awe soon!

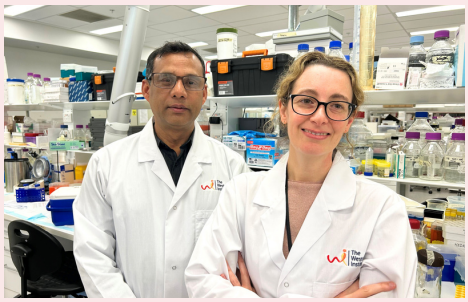
Nicola Tuck
Head of WIMR Foundation

Cover Image
Microscopic section of kidney tissue.

WIMR in the news

New clues in the hunt for a cure for multiple sclerosis

For the first time, a study of more than 22,000 people with multiple sclerosis has discovered a genetic variant associated with faster disease progression, which can rob patients of their mobility and independence over time. The work published in Nature, was the result of a large international collaboration of more than 70 institutions from around the world, collectively known as the International Multiple Sclerosis Genetics Consortium. The WIMR MS research team, led by Dr Grant Parnell and Professor Graeme Stewart AM, is proud to have made a significant contribution to this project.



Dr Sohel Julovi and Professor Natasha Rogers.

World-first study sheds light on interaction between chronic kidney disease and osteoarthritis

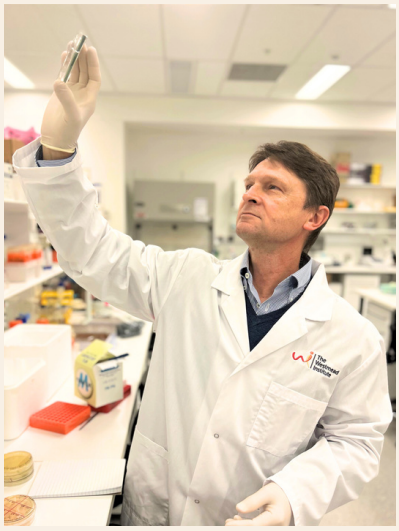
A world-first study led by WIMR researchers has successfully developed a preclinical model that provides groundbreaking insights into the complex, two-way interactions between chronic kidney disease and osteoarthritis. The findings pave the way for the development of transformative new treatment strategies.

Researcher awards

$3.5 million awarded to increase manufacture of phages at Westmead

WIMR welcomes the announcement that the NSW Government has committed $3.5 million over two years to urgently address the global manufacturing bottleneck in delivering phage therapy.

This funding will increase access to life-saving therapy for patients who have hard-to-treat bacterial infections, including antimicrobial resistance, sepsis and prosthetic infections. Phage Australia, led by WIMR and involving teams across the Westmead Health Precinct and around Australia, is the world's first fully integrated and nationally networked phage therapeutics service, which is now being replicated globally. This service is leading the world's first national open label clinical trial for administering and monitoring phage therapy. This clinical trial protocol is now considered a global benchmark.



Professor Jon Iredell in the lab.

WIMR's transplantation team.

WIMR transplantation team winners at national awards

The team from WIMR's Centre for Transplant and Renal Research (CTRR) were big winners at the annual scientific meeting of the Transplantation Society of Australia and New Zealand.

Congratulations to Professor Natasha Rogers, Dr Ahmed Hameed, Atharva Kale, Harry Robertson, and Hannah Wang. Professor Philip O'Connell, WIMR's Executive Director and Director of the Centre for Transplant and Renal Research said, "This level of recognition for CTRR reflects WIMR's standing as pioneers in this area, and the dedicated and talented group we have."

Stopping kidney disease in its tracks

The human body is a miracle: Our noses can recognise a trillion different scents. Neurons send information to our brains at more than 240 kilometres per hour. Our hearts pump around 7,570 litres of blood per day, and our two kidneys filter around 2,000 litres of fluid every day. Yet, we are barely aware of all this activity within us, until something goes wrong.

A nephrologist at Westmead Hospital, WIMR's Professor Natasha Rogers treats people with kidney disease every day, and this inspires her efforts as Deputy Director of WIMR's Centre for Transplant and Renal Research, and leading WIMR's Kidney Injury Research Group.

As Professor Rogers explains, when something goes wrong with your kidneys, the results can be life-threatening.

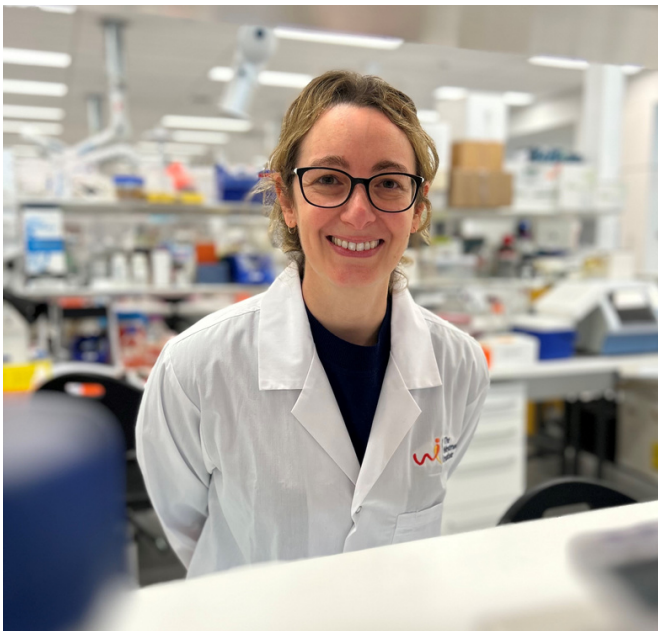
"Our kidneys are amazing organs. They work hard to clean our blood and create urine. Without our kidneys, we would struggle to eliminate waste and toxins, and we know this has a devastating impact on our health."

Sadly, kidney disease is prevalent in Australia, impacting around 2 million people each year.

Acute kidney disease is when the kidneys recover their normal function within three months. Chronic kidney disease (the most common form of kidney disease in Australia) is when there is loss of healthy kidney function for more than three months.

Professor Rogers says, "Even one episode of acute kidney disease has implications, increasing your risk of going on to develop chronic kidney disease.

"Then if you get chronic kidney disease, it has implications for every other organ in your body. Even though you might think they're unrelated, chronic kidney disease can impact your heart, blood vessels, how your blood clots, your bone strength, and how your brain functions.



Professor Natasha Rogers in the lab.

"The other thing about kidney disease is it's not selective. It's not necessarily a disease of age or gender or class. It can impact anyone at any stage.

"Our research focuses on understanding the role of certain genes and the implications they might have on determining someone's risk of developing kidney disease; how they might respond to treatment; and influencing a personalised treatment that could reduce their risk of developing end-stage kidney disease that might require dialysis, a transplant, or both."

One particular project being carried out by Professor Rogers and her team investigates the role of a particular protein called thrombospondin-1 (TSP1), and the signaling pathway between it and a receptor called CD47.

Cells receive signals that they decipher and then use to inform how they respond to changes in their surroundings. Cells can also send out messages to other cells. These are called signaling pathways.

CD47 is a kind of protein that is found on the surface of all cells in the body. Essentially, CD47 tells circulating immune cells whether or not to destroy whatever cell it is attached to. In this way, the CD47 protein protects the cells that should be protected, and helps dispose of cells that are aged or diseased.

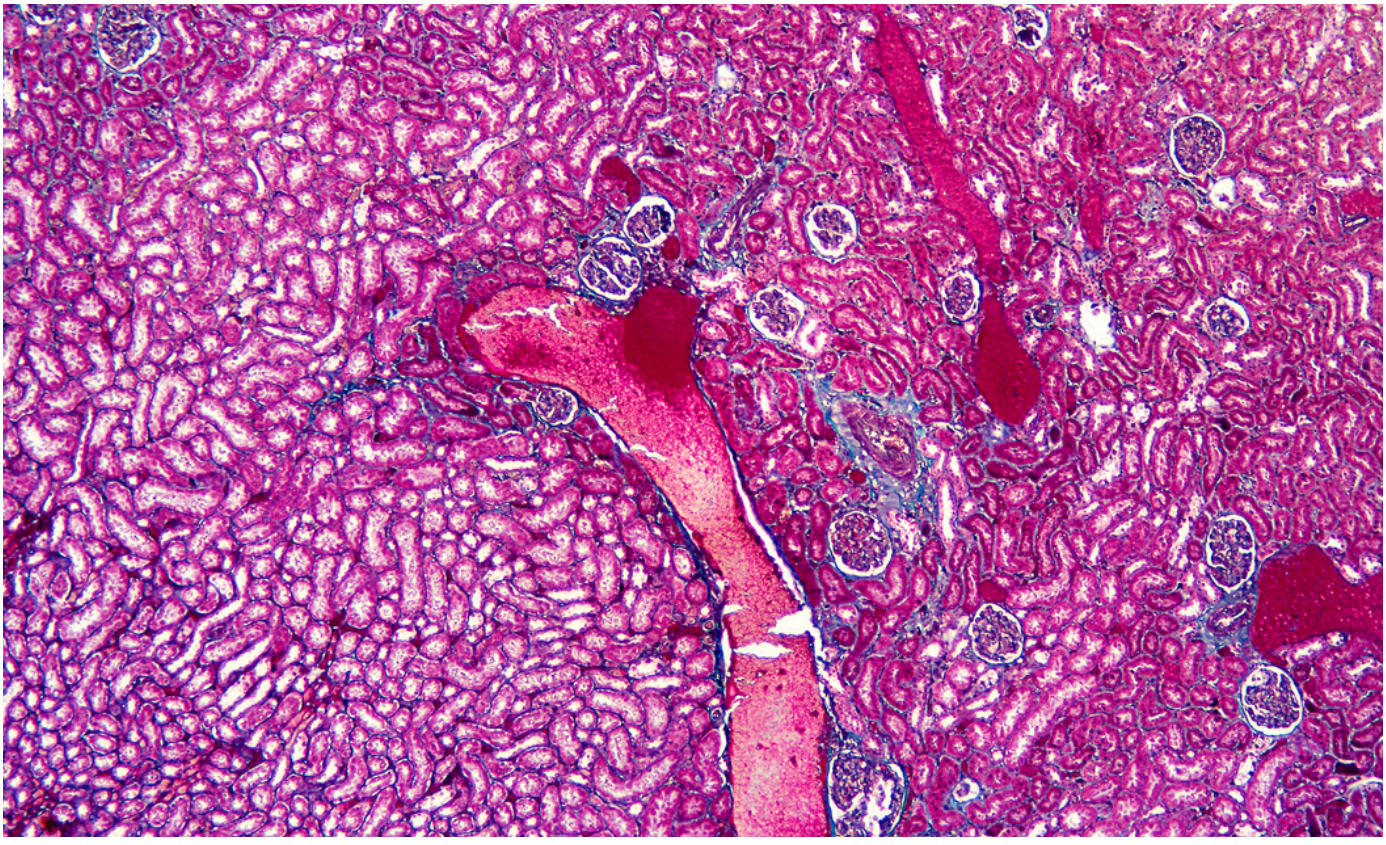
Professor Rogers says, "So far, we know that this signaling pathway has implications in acute kidney disease, as well as its progression to chronic kidney disease, and now we are starting to really understand the broader ramifications it has in terms of cardiovascular health and disease, bone health and disease, and its impact on diabetes.

"If we can better understand this signaling pathway, we think it could be used as a therapeutic target – in other words, we might be able to find a drug or treatment that impacts the pathway and stops the progression of kidney disease."

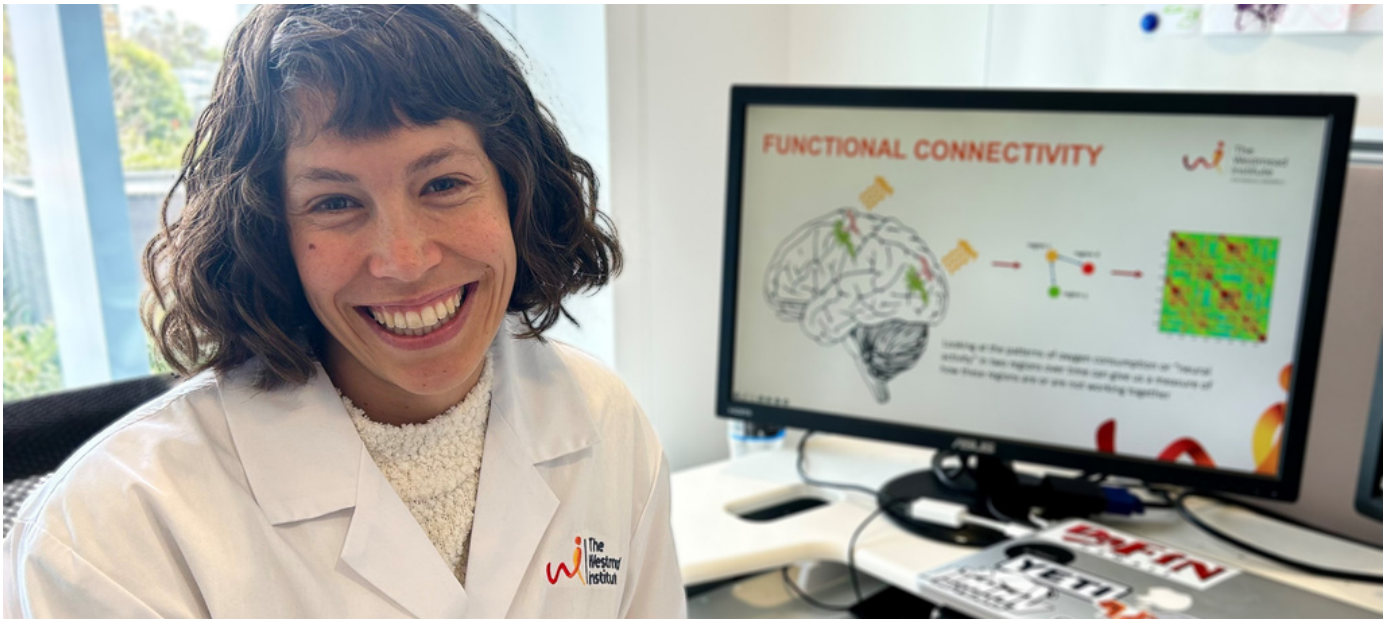
While it is possible to either target the protein (TSP1) or the receptor (CD47), Professor Rogers and her team believe that targeting CD47 offers the most promise.

"In fact, an antibody has already been developed against CD47 that has been used for other applications and is approved for use in the United States for blood cancers, but we think it has a wider clinical application.

"We are excited by the possibility that we can look at potentially using that drug for other diseases, including kidney disease."



Human kidney cortex section showing Bowman capsules, glomerulus, collecting tubules and renal corpuscles. Optical microscope, magnification X40.



Mapping the human brain

A life-long fascination with the most complex organ in the human body, the brain, led Dr Isabella Breukelaar to WIMR's Brain Dynamics Centre, and a research project that could change the future of psychiatry. "I've always been interested in the brain and how it works," said Dr Breukelaar.

"As an undergraduate, I was focused on biology, physiology and the cellular processes of the brain. Then when I was completing my Honours degree, I explored that further and realised the only way to really understand what happens in the live human brain is through brain imaging. I really fell in love with everything to do with brain imaging, like the computational work that is involved. It got me heavily involved in data science and coding. These were things I'd never been exposed to before, and I just loved it."

Dr Breukelaar's current research project looks at the long-term changes to brain connectivity that occur as a result of childhood trauma, and how these impact the risk and severity of mental illness in adulthood.

"Traumatic experiences in childhood are thought to initiate a complex physiological stress response involving many systems in the body, including the brain. These changes to the brain can have lifelong consequences. These include substantially increasing the risk of developing a psychiatric disorder, experiencing a more severe psychiatric disorder and being less responsive to treatment.

> **To some degree, these changes can be measured using brain imaging. We are using functional MRI-based techniques to understand how connections in the brain have been altered. Once we can see these changes, we hope that more personalised treatment options can be identified, based on the individual's brain alterations and not just their diagnosis and symptoms.**

"It's not easy and it's definitely a long road ahead, but we are very hopeful."

Dr Breukelaar has worked with the Brain Dynamics Centre team at WIMR since 2015. "I did my PhD at WIMR and I really loved working with the team. I'm now three years into my postdoctoral degree, having taken breaks to start my family."

Dr Breukelaar's family includes her husband, two-year old child and another baby on the way.

"Away from the lab, I am an avid soccer player and love doing outdoor activities like snorkeling and camping with my family and friends."

Congratulations to WIMR's inaugural Precision Medicine Research Fellow

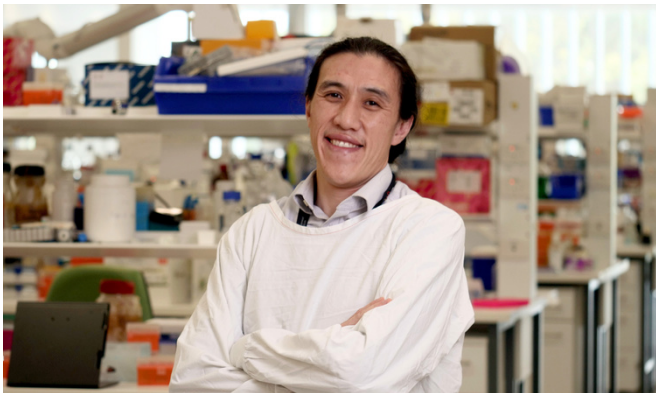
WIMR is committed to attracting and retaining the best and brightest researchers; the most brilliant thought leaders who challenge the status quo and make an impact.

Particularly important is ensuring that the rising stars in the next generation of research leaders are provided the support and certainty they need to establish their research programs and lay the groundwork to attract independent government grants.

Paul and Valeria Ainsworth are committed long-term supporters of WIMR and, wanting to back WIMR's ambition to become a global leader in Precision Medicine by 2030, they pledged $1 million to establish The Paul and Valeria Ainsworth Precision Medicine Research Fellowship.

This important new fellowship provides three years of financial support to outstanding early- or mid-career researchers who are striving to develop innovations to advance the delivery of Precision Medicine with the express goal of improving health outcomes.

After a very competitive selection process, which saw applications received from high calibre candidates across Australia and from overseas, in July 2023 WIMR was delighted to announce that the inaugural Paul and Valeria Ainsworth Fellow is Associate Professor Thomas Tu.



Associate Professor Thomas Tu.

At WIMR's Storr Liver Centre, Associate Professor Tu is working towards an understanding of how the Hepatitis B virus establishes a chronic infection, and also how the virus causes liver cancer. The fellowship allows Associate Professor Tu to identify new biological markers to predict patients' risk of liver cancer due to Hepatitis B and the best treatment approaches for each individual patient. This work has the potential to result in new therapies for chronic Hepatitis B, which is currently incurable.

"I am so very appreciative of the Ainsworths' generosity. This fellowship will enable me to do important, impactful work on liver cancer and persistence of the virus in the liver. These underpin the major issues that impact patients: the fear of cancer and the incurability of the infection. My research is focused on creating solutions to these problems to alleviate the huge impacts of Hepatitis B on the affected community."

Paul and Valeria Ainsworth said, "We give to medical research because scientific achievements can transform the lives of people around the world.

"The reward of seeing what can be achieved is hugely exciting and it is deeply satisfying to know that you have contributed to improving health outcomes for people who might otherwise have had no hope.

"We are deeply proud to be able to play a part in helping WIMR to advance the development of life-saving Precision Medicine treatments. We congratulate Thomas Tu for his selection as the Ainsworth Fellow."

Valeria and Paul Ainsworth.

Olive "Terry" Lewis.

Terry's gift of hope to breast cancer patients

Olive "Terry" Lewis was a remarkable person. Open-minded, worldly and "modern", she cared deeply about the well-being of the community. Having lost a close friend to breast cancer, Terry realised that research was the key to unlocking medical breakthroughs. After careful consideration and her own research, she chose WIMR for a gift in her Will because she knew the money she bequested would be used appropriately.

Executor of the Will and close friend Toni Holt says, "Terry knew that progress and hope lie in research. She wanted to support those dedicated individuals who work tirelessly in the laboratories, pushing the boundaries of knowledge and seeking new treatments. That's why she specifically chose to support breast cancer research at WIMR."

Terry's gift supports WIMR's breast cancer research team's senior researcher, Barbara Guild. Barbara plays a pivotal role in driving lab activities, assisting and mentoring students, and ensuring the smooth operation of the team's critical projects. Currently, the team is focused on developing new prognostic tools to help individualise treatment plans for breast cancer patients. Terry's bequest helps provide the resources for this critical work, giving hope to those navigating their journey with breast cancer.

Terry's legacy serves as an inspiration to us all – a reminder that our actions can create a ripple effect of change. Terry imagined a better life for those diagnosed with breast cancer and through her generosity, this will be a real outcome for future generations.

Discovery Partners Meet the Researcher seminar

Our Discovery Partners and friends recently met to hear from two of our leading researchers. Dr Caitlin Finney's research studies the role that a person's genetic errors (mutations) play in causing dementia so that we better understand how to treat it.

Professor Scott Byrne shared his insights into the role sunshine has in activating our immune systems to fight cancer. Honorary Solicitor Karina Penfold rounded up the afternoon with her update about the "Whys and Wherefores of Wills" followed by afternoon tea.

Guests at Discovery Partners Meet the Researcher Seminar.

Leaving a gift in your Will is a wonderful way to honour your loved ones and to leave an outstanding legacy that will impact millions of people around the world.

If you would like more information about leaving a gift to medical research at WIMR in your Will, please contact Hilary May Black at WIMR on 02 8627 3027 or email hilary.mayblack@wimr.org.au

Forging new connections in the USA

WIMR is excited to be one of the first medical research institutes to become a member of the Australian Universities and Schools USA Foundation.

The AUSUSA Foundation connects generous philanthropists and charitable organisations in the USA with the most prestigious educational, and now medical research, institutions in Australia.

It offers a simple and straightforward way for American-based individuals, organisations and foundations to make a powerful impact by contributing directly to medical research breakthroughs being achieved in the heart of Western Sydney. The advantage is that The AUSUSA Foundation has tax-exempt 501 (c)(3) status and any donation made to WIMR via them will be fully tax deductible within the USA.

The initiative will create a new opportunity for our researchers and their networks in the USA. It's about investing in a vision, believing in its potential, and backing the most brilliant and talented people to pursue its delivery.

AUSUSA
AUSTRALIAN UNIVERSITIES & SCHOOLS USA FOUNDATION

Australian researchers are world renowned for their innovation and hard work fired by a spirit of optimism, courage and determination. This is a terrific opportunity for USA supporters to get behind research pioneers at WIMR, including:

- ex-pat Australians who have established successful business careers in the USA;
- USA-based WIMR and Western Sydney alumni who want to give back;
- foundations wanting to accelerate ground-breaking research of global significance to advance progress towards cures for specific diseases;
- philanthropic families and individuals eager to be a part of pioneering innovations Down Under.

We look forward to forging new ties supported by those visionaries who can imagine the impact our world-leading research will have around the globe.

For more information contact
Jayne Wasmuth,
WIMR Foundation Philanthropy Manager
jayne.wasmuth@wimr.org.au
Or visit: aususafoundation.org/wimr

WIMR, at the heart of the Westmead Health Precinct.


Empire State Building, New York City, New York.

WIMR out and about

Dr Grant Parnell at Galston500 event.

Galston500

A huge thank you to Allie Thackray and the terrific Hornsby Model Engineers Co-Op Ltd club who raised $14,000 this year at the annual Galston500. Held at the picturesque Galston Valley railway, 5 inch scale model locomotive teams came from all over NSW to take part.

Funds raised go towards MS research at WIMR. Dr Grant Parnell, who leads the immunogenetics research group at WIMR, which has a strong focus on the genetics of MS, got to ride and tag the 500th lap with his young son.

Allie told us she is already planning for next year – we certainly appreciate her dedication and enthusiasm.

ACMA Karaoke Night

WIMR is very grateful for the support of The Australian Chinese Medical Association Charitable Trust which held a karaoke night. The songsters raised $25,000 and they and their appreciative audience had a lot of fun along the way.

Committee members for ACMA and ACMA Charitable Trust, with WIMR representatives Jayne Wasmuth and Simon Hall (back row, centre).

ACJC committee members present a cheque to WIMR's Jayne Wasmuth and Dr Maggie Wang.

ACJC September Race Day

The Australian Chinese Jockey Club launched the spring racing season in style with a gala Race Day at Randwick where $23,000 was raised for Scientific Platforms at WIMR, headed by Dr Maggie Wang. We are grateful for the ongoing support of this generous group.

GIANT Steps for Research

A big thank you to our community partner GWS GIANTS, and everyone who participated and donated to the inaugural Giant Steps for Research campaign in June.

With a focus on health and wellbeing, it was a great success raising more than $110,000 to support the work being undertaken here at WIMR.


(Left to Right) Professor Philip O'Connell, Stephen Coniglio, Dr Huyen Phan, Brent Daniels, Associate Professor Mayuresh Korgaonkar, Callan Ward, and Dr Caitlin Finney.

Visitors at the WIMR booth.
(Photograph supplied by and used with permission from City of Parramatta by Maja Baska Photography)

Powerhouse Museum – Sydney Science Festival

The Powerhouse Museum hosted Family Science Day at PHIVE, Parramatta as part of its annual Sydney Science Festival. WIMR's interactive stall proved to be a major attraction with long queues of eager families keen to find out more.

In conjunction with the Powerhouse Museum, WIMR also presented a series of enlightening seminar talks that were open to the public. Three distinguished researchers shared their expertise: Dr Isabella Breukelaar shed light on mental health, Associate Professor Kenneth Micklethwaite delved into the realm of cell therapy for human diseases, and Dr Caitlin Finney explored the intricacies of Alzheimer's.

Meet the Foundation

Have you met the WIMR Foundation team?

This group of passionate professionals works closely with our valued donors and the community to support WIMR's researchers as they strive to improve treatments, preventions and cures for some of the most serious health issues affecting Australians and people around the world.

(L-R) Front Row: Jayne Wasmuth, Philanthropy Manager; Nicola Tuck, Head of Foundation; Hilary May Black, Gifts in Wills Manager; and Diane Humphries; Partnerships and Community Manager. Back Row: Samantha Proia; Foundation Coordinator.

If you would like to know more about supporting WIMR's work, please contact the WIMR Foundation by phoning 02 8627 3000 or email development@wimr.org.au
We look forward to hearing from you.

Outstanding research requires exceptional people

You don't have to be a medical researcher to make a difference.

Support WIMR today to help improve treatments, prevent, and cure some of the most serious health issues affecting Australians and people around the world.

Visit our website to donate now.
Simply hover your phone over the QR code or visit **wimr.org.au**

My contact details:

Title: _____

Name: _____

Address: _____

_____

_____

Email Address: _____

Phone: _____

I would like to receive information and occasional updates from WIMR.

- ☐ Yes, via email please
- ☐ Yes, via mail please
- ☐ No thank you. Please do not send me any regular correspondence.

I would like to donate the following amount to help fund vital breakthroughs at WIMR:

☐ $25 ☐ $50 ☐ $100 ☐ $250 ☐ $500

Another amount: $ _____

☐ I would like to make this a regular, monthly donation.

Donations of $2 or more are tax deductible.

Payment Information:

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☐ Visa ☐ Mastercard ☐ Amex ☐ Diners

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BSB: 032-278
Account: 76 76 16

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PO Box 412
Westmead NSW 2145
Australia

Ph: 02 8627 3000
Website: wimr.org.au
ABN 90 141 847 634

To find out how your support can make a difference, contact the WIMR Foundation team at development@wimr.org.au or phone 02 8627 3000.

A gift in your Will, "in memoriam", and in celebration of special events are wonderful ways to support our life-changing research here at WIMR.

Contact our Gifts in Wills Manager on (02) 8627 3027
Email: hilary.mayblack@wimr.org.au