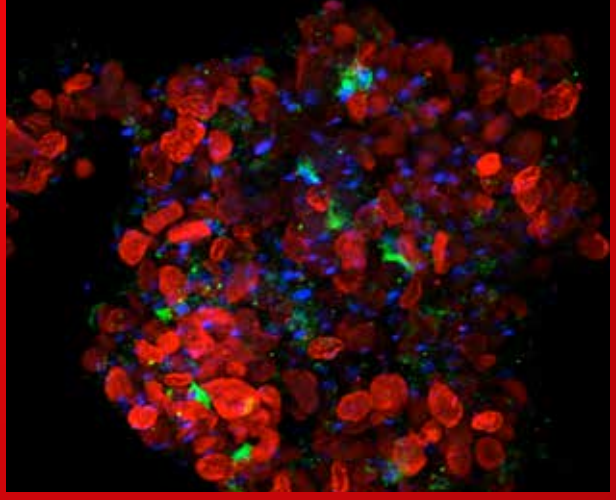
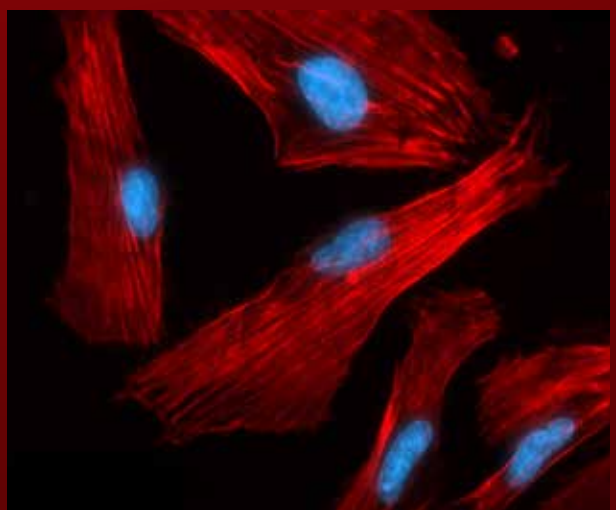
2024 ANNUAL REVIEW





HEART RESEARCH INSTITUTE

CELEBRATING
35 YEARS
OF IMPACT

Contents

Acknowledgement of Country

The Heart Research Institute (HRI) acknowledges the Gadigal people of the Eora nation as the Traditional Owners of the land on which we live, work, play, and learn. We pay our respects to Elders past and present.

Aboriginal and Torres Strait Islander people are knowledge holders with deep cultural and spiritual connections to the land, waters, and sea for which they care for with cultural customs, wisdom, and integrity.

HRI recognises that Aboriginal and Torres Strait Islander sovereignty was never ceded and that the land we are situated on always was, and always will be Aboriginal land.

HRI is committed to creating positive change and working in equal partnership with Aboriginal and Torres Strait Islander people.

Our vision and mission

HRI delivers breakthrough cardiovascular (CVD) research to give people more time with the ones they love.

Our mission is to save and improve the lives of people with cardiovascular disorders through world-class research and innovation. At our cutting-edge Institute, we nurture the next generation of researchers, championing early and mid-career scientists, women in STEMM and Indigenous health.

CARDIOVASCULAR DISEASE IS THE LEADING CAUSE OF DEATH GLOBALLY

WE ARE WORKING TO CHANGE THAT

Our Partnerships

Sydney Local Health District and Sydney Health Partners

Charles Perkins Centre

The University of Sydney

University of Technology Sydney (UTS)

Locations

7 Eliza Street, Newtown, Sydney

Charles Perkins Centre,
The University of Sydney,
Camperdown, Sydney

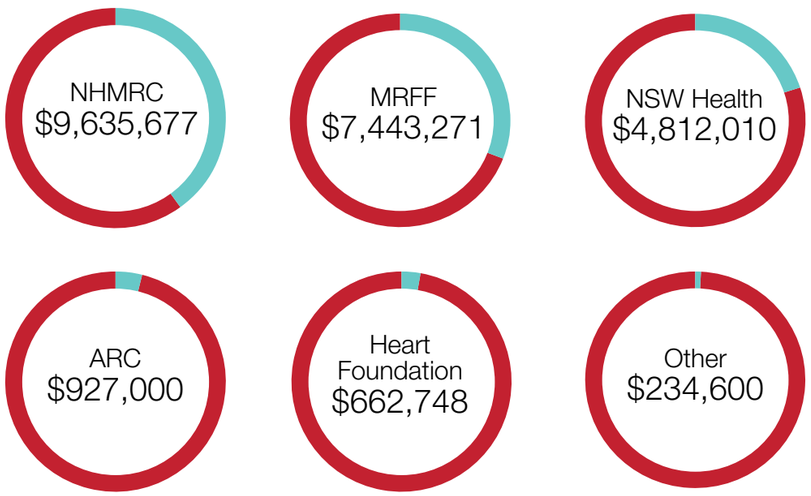
Australian Business Number

41 003 209 952

Category 1 and 2 grants

$23,715,306

2024 grant income by funding body (teal) as portion of total grant income (red)



Notable grants

- NSW Health Cardiovascular Elite Research Leader Grant: Prof Julie McMullen $2,500,000
- MRFF Research Data Infrastructure Grant: Prof David Celermajer AO $2,487,189
- NHMRC Ideas Grant: Assoc Prof Mary Kavurma $1,654,781
- NHMRC Ideas Grant: Dr Chris Stanley $1,490,699
- MRFF Additional funding for existing grant: Prof David Celermajer AO $1,303,220
- NSW Health Cardiovascular Collaborative Grant: Prof Ben Freedman OAM $995,200
- NSW Health Cardiovascular Early to Mid-Career Grant: Dr Ashish Misra $450,000

Philanthropic income

$15,322,304

Philanthropic income includes major gifts, bequests, regular and single giving, strategic partnerships, and trusts and foundations. Thank you to all our supporters for enabling HRI to deliver world-class science. Your donation fuels research that will change cardiovascular health for people globally.

Philanthropic grants highlights

- BHP – Djurali Project $1,250,000
- Ramaciotti Foundations Health Investment Grant – Employing a multi-pronged approach to develop nature-inspired anticoagulants for safer and more effective stroke treatment, Dr Xuyu (Johnny) Liu $100,000
- Perpetual IMPACT Grant – A nature-inspired strategy to target protein disulfide isomerase A6 for safer acute ischemic stroke treatment, Dr Xuyu (Johnny) Liu $91,426

Contact our team to learn how you can make a transformational impact and leave a lasting legacy.

Email support@hri.org.au

Call 1800 651 373

22 students hosted at HRI

59 researchers

13 early-mid career researchers

23 visiting/international scientists

HRI featured in

963

media stories across TV, radio, online, and print

798M

estimated global reach from media stories

1.4M

page views at www.hri.org.au

Chair's report

The Heart Research Institute (HRI) marked 35 years of groundbreaking research and profound impact on the lives of people with cardiovascular disease and their loved ones.

Scientists, staff and the Board are unified in HRI's mission: to deliver pioneering research that ultimately gives people affected by cardiovascular disease more time with the ones they love. I am continually moved by the dedication and untiring commitment of our team. Equally, I am full of gratitude for our loyal donors and supporters who believe in our mission.

In 2024, our scientists continued to expand their cutting-edge research, and we explored new opportunities to support them and magnify the impact. We welcomed Prof Julie McMullen as Deputy Director and Director of Research and leader of the Heart Muscle Group and launched the Centre for Peripheral Artery Disease led by Assoc Prof Mary Kavurma.

> "I am deeply grateful for the generosity of our philanthropic supporters, which has enabled the launch of several new initiatives.

The Glenys Fitzpatrick Scholarship, named in honour of one of our most dedicated supporters, will fund a postdoctoral scientist at HRI. The generosity of Emeritus Prof Geoffrey Kellerman was instrumental in our ability to double the impact of people's donations through a dollar matching strategy.

HRI opened its doors and introduced Heart to Heart seminars to give supporters the opportunity to meet our scientists and learn about the different research groups. We also relaunched the Hearts for Eternity Club which recognises those very special people who have committed to leaving a gift in their Will.

On behalf of the Board, I would like to thank Prof Andrew Coats AO for his leadership and helping shape the future of the Institute. I thank all our dedicated and passionate staff including the Science, Operations, Management, Development and Communications teams.

Finally, I want to thank all our donors. Your importance in improving the lives of people with cardiovascular disease cannot be overstated.

It is a truly exciting phase for HRI, as we build on 35 years of history and look to an exciting future.

CHAIR
The Hon Peter McGauran
LLB, BA

THE HON PETER MCGAURAN

> "It is a truly exciting phase for HRI, as we build on 35 years of history and look to an exciting future.

> Our vision to save and improve the lives of people with cardiovascular disorders is at the heart of everything we do.


PROF ANDREW COATS AO

Scientific Director's report

With 35 years of groundbreaking research, the impact and importance of the world-class science carried out at the Heart Research Institute (HRI) is unequivocal.

The Institute has been instrumental in discoveries ranging from the link between passive smoking and heart disease to safer alternatives to heart transplants and potential new treatment regimes for peripheral artery disease.

We were delighted to welcome Prof Julie McMullen as Deputy Director and Director of Research and leader of the Heart Muscle Group. Not only has this added to the calibre of our research teams, but it has also increased the scope of research being undertaken at HRI and our impact on global health.

> In 2024, our team are as passionate and committed as the early pioneers who set up HRI in 1989.

We also launched the Centre for Peripheral Artery Disease (PAD) led by Assoc Prof Mary Kavurma and held the inaugural PAD Colloquium, bringing together the national PAD community. The Centre – the first of its kind in Australia – aims to improve diagnosis, treatment, and awareness of PAD through innovative research and collaboration across institutions.

In an increasingly competitive funding environment, we secured numerous prestigious grants. These included an MRFF 2024 Research Data Infrastructure Grant Opportunity (almost $2.5M) by the Clinical Research Group led by Prof David Celermajer AO, an NSW Health Elite Research Leader Grant ($2.5M), an NHMRC Investigator Grant L2 (over $2M) by Prof Julie McMullen, an NHMRC Ideas Grant (over $1.6M) by Assoc Prof Mary Kavurma, an NHMRC Ideas Grant (almost $1.5M) by Dr Chris Stanley, an NSW Health MRSP Grant ($851K), an NHMRC IRIISS Infrastructure Grant ($195K), and an NHMRC Equipment Grant ($14K).

The Djurali Centre for Aboriginal and Torres Strait Islander Health Research and Education continues to spearhead our commitment to improving Indigenous health, with successful initiatives such as the production of 4,500 heart health care kits to distribute in rural communities, funded by a significant partnership with BHP.

Our international collaborations supported by HRI NZ and HRI UK grants continue to show great research results as well as the strengthening of ties with renowned institutions such as Cambridge University, Edinburgh University, King's College London and the University of Auckland.

We are proud of our ongoing partnerships with the Charles Perkins Centre (CPC), The University of Sydney, Royal Prince Alfred (RPA) Hospital and the University of Technology Sydney (UTS) along with other leading institutions and bodies, both nationally and globally.

My deepest thanks to our Scientific, Operations, Management, Development and Communications teams. Our extensive achievements throughout 2024 were underpinned by their outstanding efforts.

Most importantly, thank you to our generous and loyal donors and supporters. Your commitment to HRI enables the next generation of scientists to continue conducting pioneering cardiovascular research.

SCIENTIFIC DIRECTOR & CHIEF EXECUTIVE OFFICER
Professor Andrew Coats AO
MA (Oxon), MB B Chir (Cantab), DM (Oxon), DSc (London), FRACP, FRCP, FESC, FACC, FAHA, FHFA, FHFSA, FCSANZ, FSCWD, FAICD, MIoD, MBA (London Business School)

For 35 years, the Heart Research Institute (HRI) has been combating the world's leading cause of death – cardiovascular disease – through pioneering novel research and groundbreaking discoveries.

Powered by philanthropy and the generosity of our supporters, HRI's impact is shaping the future of global heart health – and giving people more time with the ones they love.

1980s to 1990s

1989
17 March 1989. HRI was established to fuel scientific discovery and translational research, as NSW's first medical research institute dedicated to the detection, prevention and treatment of cardiovascular disease.

1995
Proved the link between passive smoking and heart disease, research that became pivotal in the global move to ban smoking in public places.

2000s

2005
Demonstrated that low-birth weight babies have thicker aortic walls, possibly predisposing them to greater risk of cardiovascular disease later in life.

2011
Discovered that maternal cigarette smoking is associated with reduced quantities of good cholesterol in healthy 8-year old children.

2013
Uncovered the link between diabetes and cardiovascular disease, a world-first and a discovery with the potential to save lives.

2017
Discovered a molecule that can predict who is most at risk of developing diabetes, 12 years in advance.

2018
Discovered mechanisms underlying TRAIL and showed it can stimulate the growth of new blood vessels and dramatically improve blood flow to the limbs. Offers hope of a potential new treatment pathway for people with peripheral artery disease (PAD), to help protect them from developing gangrene and amputation.

2019
Co-developed new camera technology to screen the faces of multiple people at a time, for atrial fibrillation (irregular heartbeat).

2020s

2021
Established the first Australian New Zealand Congenital Heart Disease Registry to improve the lives of people living with the condition.

2022
Strong link confirmed between atrial fibrillation and dementia.

2023
Established Australia's first Fluxomics Centre devoted to identifying and exploring the cellular changes that are unique to each individual's cardiovascular disease – with the ultimate goal of personalised methods to prevent, detect, and treat cardiovascular disease. Generously supported by The Ian Potter Foundation.

2024 and into the future

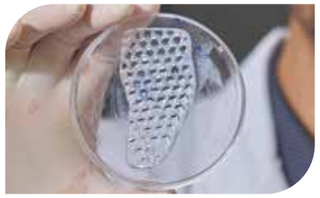
2023
World-first exercise study shows benefits for patients with congenital heart disease.

2024
Launched the Centre for PAD, first of its kind in NSW, paving the way for world-leading research that enhances diagnosis, transforms treatment and patient care, and raises awareness about PAD.

2024
In pre-clinical trials, confirmed a natural chemical found in broccoli can reduce the formation of harmful blood clots that can in some instances lead to stroke, as well as improve the performance of clot-busting drugs afterwards. Awarded funding from The Hillcrest Foundation and the Walter and Eileen Ralston Trust.

2024
Piloting wearable technology for atrial fibrillation detection for Aboriginal people in primary care.

2024
Developing a world-first alternative to heart transplants, using mini-hearts and 3D bioprinting, in pre-clinical work.



2024
Found an existing cancer drug can effectively treat PAD, by effectively growing new blood vessels, by passing the blockage and restoring blood flow in affected parts of the body, in a pre-clinical study.

2025
Exploring the new medical specialty cardio-oncology, with the ultimate goal of helping to deliver cancer treatments safely and without cardiovascular side effects.

Our impact is only possible thanks to supporters

MARK COURE MP VISITS HRI

Support from donors helps train the next generation of scientists. It also bridges the gap between basic science and clinical translation, ensuring our findings move towards real-world impact.
— Dr Ashish Misra, Atherosclerosis and Vascular Remodelling Group Leader

Philanthropy provides essential funding that supports innovative, high-risk, high-reward projects that may not yet be eligible for traditional grants. These allow us to accelerate discoveries.
— Assoc Prof Mary Kavurma, Vascular Complications Group Leader

SUPPORTERS PACKING HEART HEALTH CARE KITS AT HRI

HRI AMBASSADOR ELLE PENDRICK VISITS THE HRI LABS

Philanthropy can make a huge impact by supporting research. Without this, we will not be able to bring new hope to our patients and we cannot improve the lives of millions of cardiovascular disease patients in Australia and globally.
— Dr Carmine Gentile, Cardiovascular Regeneration Group Leader

33,056 supporters

Philanthropy fuels hope — both for researchers, who are empowered to push boundaries, and for patients, who benefit from faster, more effective breakthroughs.
— Dr Sergey Tumanov, Biochemical Analyst, Fluxomics Centre Manager

$15,322,304 in philanthropic donations

Inspiring scientists since 1989...

LEFT TO RIGHT: THE HON PAUL KEATING OPENING HRI, PROF DAVID CELERMAJER AO, PROF BEN FREEDMAN OAM

Thirty-five years ago, on 17 March 1989, the Heart Research Institute (HRI) was officially opened by then Treasurer the Hon Paul Keating. HRI was Australia's first medical research institute dedicated to the detection, prevention and treatment of cardiovascular disease – the leading cause of death in Australia and worldwide.

The visionary idea that inspired the establishment of HRI was to create a medical research institute that would exist within the supportive environments of The Royal Prince Alfred Hospital (RPA) and The University of Sydney (USYD), allowing scientists to be inspired by the challenges encountered at the patient's bedside, while also giving them access to the multidisciplinary capabilities of USYD.

Now 35 years on, this model is more relevant than ever. Integrating medical research with the delivery of health services has become a mantra for how contemporary medical research institutes should organise themselves for translational impact and improved public health outcomes.

The Institute was spearheaded by cardiologists at RPA, led by HRI Founding Fellows Phil Harris, David Richmond and Ross Hohnen.

Originally established with just 37 staff, today, HRI has more than 170 personnel working in 13 scientific groups and centres, supported by a dedicated operations team, with almost 200 collaborations across 48 countries.

HRI is a home for researchers making discoveries that have real-world, lasting impact and that advance our understanding of cardiovascular disease.

Our PhD students develop their skills and learn from their mentors. Our postdoctoral scientists explore to establish their own research identities. Our Group Leaders lead their own scientific themes and inspire the journeys of others within their team. Our alumni continue to have great impact and influence throughout the scientific and medical fields.

Prof Ben Freedman OAM and Prof David Celermajer AO are two of HRI's long-standing researchers, having been with the Institute from the very beginning.

Prof David Celermajer AO established the Clinical Research Group in 1994 and was appointed Clinical Director in 2003.

> **The journey of HRI has been wonderful to see – not only the science breakthroughs but also the extraordinary people who have been leaders and students, who've worked together so well towards a common goal – of improving human health,** *– Prof Celermajer AO*

Prof Ben Freedman OAM leads the Heart Rhythm and Stroke Prevention Group and is also Director of External Affairs. He was one of the original RPA cardiologists with the vision for establishing HRI, and conducted research with the first group of HRI scientists.

"I've had a long career and for me there have been many highlights," Prof Freedman OAM reflects.

"Even more so is the legacy of the people who have trained with me. The people who are early career researchers and then become emerging leaders.

> **They are our future. And they are the future of cardiovascular research and discoveries.** *– Prof Freedman OAM*

As a breeding ground for top scientific talent, HRI is where the rising stars of the next generation of researchers set off on their scientific journeys.

One of these is Dr Clara Liu (pictured on the cover), a research officer with the Heart Muscle Group. Growing up in a developing country, she had little exposure to medical research, but her passion for research truly emerged during her Bachelor of Science studies.

"I enjoy the process of discovery, the challenge of developing new ideas, and the potential impact of my work that could improve patient care," Clara says.

Alex Lin, a PhD student in the Atherosclerosis and Vascular Remodelling Group, is researching the underlying causes of heart attack and stroke.

"My motivation has always been to try and do my small part in helping improve other peoples' lives. I think everyone should have the opportunity to enjoy and live their life to the fullest, and so researching cardiovascular disease helps in that process."

Working alongside Alex and Clara is Georgia Watermeyer, Research Assistant in the Fluxomics Centre. Georgia is originally from Auckland, and joined HRI through the NZ PhD Pathways Program funded by generous supporters.

"I love having the opportunity to learn new things, to get involved and be mentored in different aspects of science. Being able to contribute to research that addresses those imperative questions in cardiovascular disease in order to benefit the community and the people it serves, is extremely meaningful to me," Georgia says.

For many of our researchers, the connection to cardiovascular disease is personal.

Inspired by her father, who is on colchicine after bypass surgery, Honours student Amandeep Mondal in the Atherosclerosis and Vascular Remodelling Group is deeply passionate about research and aims to pursue a PhD at HRI working on colchicine.

"Considering my dad's history, my dream is to make a meaningful contribution to cardiovascular research, and I believe further research will support that," Amandeep says.

With 35 years of accolades behind them, the next generation of HRI scientists continue to deliver breakthrough cardiovascular research to give people more time with the ones they love.

ALEX LIN

GEORGIA WATERMEYER

AMANDEEP MONDAL

...and into the future

Research highlights

Notable grants and awards

Our researchers were successful in securing numerous prestigious grants, including the following.

- The Clinical Research Group was awarded an MRFF 2024 Research Data Infrastructure Grant Opportunity for their project “Creating a national congenital heart disease (CHD) ‘knowledge bank’ ” (almost $2.5M), as well as additional MRFF funding for an existing project ($1.3M).
- Prof Julie McMullen was awarded an NSW Health Elite Research Leader grant for her project “Targeting mechanisms underlying exercise-induced protection to prevent & treat cardio-metabolic disease in males & females” ($2.5M) and an NHMRC Investigator Grant L2 (over $2M).
- Assoc Prof Mary Kavurma was awarded an NHMRC Ideas Grant for her project “On the TRAIL of peripheral artery disease” (over $1.6M).
- Dr Chris Stanley was awarded an NHMRC Ideas Grant for his project “Indoleamine 2,3-dioxgenase-1 (IDO1) is a master regulator of severe endothelial dysfunction in sepsis” (almost $1.5M).
- Dr Ashish Misra was awarded a NSW EMCR grant for his project “Thickening the cap: a novel NOTCH3 mediated RNA therapy for atherosclerosis” ($450K) as well as a Tanoto Foundation Medical Research Fund for his project “Reducing risk of heart attack and stroke in diabetes patients at 26 cents a day: the role of colchicine in preventing atherosclerotic cardiovascular disease in type 2 diabetes”.
- Dr Xuyu (Johnny) Liu was awarded funding from the Hillcrest Foundation and the Walter and Eileen Ralston Trust for his research into developing safer and more effective treatments for stroke derived from nature.
- Dr Carmine Gentile was awarded a 2024 Perpetual IMPACT Grant for his project “Revolutionising cardiac care: Developing personalised 3D bio-printed cardiac patches for heart failure patients”.
- Dr Derek Tran was awarded a Heart Foundation Postdoctoral Fellowship ($151K) for his project “A framework for a multidisciplinary clinic for young people living with congenital heart disease: The EXErCise and Lifestyle (EXCEL) Health Club Program – A hybrid implementation science study”.

Several accolades were also awarded in recognition of the excellence of our researchers.

DR ASHISH MISRA

PROF BEN FREEDMAN OAM

- Prof Ben Freedman OAM was awarded the 2023 Ministerial Award for Cardiovascular Research Excellence.
- Assoc Prof Mary Kavurma and her co-authors were awarded the 2024 Paul Dudley White International Scholar Award for their work “Sex differences in endothelial cell function(s) in diabetes-associated peripheral artery disease”.
- Prof Freedman OAM and Assoc Prof Kavurma were finalists for the 2023 Australian Cardiovascular Alliance (ACvA) Mentor Award.

ASSOC PROF MARY KAVURMA

Launching the **Centre for Peripheral Artery Disease (PAD)**

The first of its kind in Australia, the Centre for PAD will pave the way for world-leading research to enhance diagnosis, transform patient care, and raise awareness about PAD, the debilitating cardiovascular condition that claims five lives every day in Australia.

The Centre brings together medical researchers and clinical experts from HRI and other leading institutes, as well as patients with lived experience.

Centre Lead Assoc Prof Mary Kavurma said the team will work to fill gaps in knowledge about PAD, which will lead to better patient outcomes.

“We’re supercharging research into PAD, because there are things that we still don’t understand, in terms of the biology of the disease, that could crack the code to detect it sooner and manage it better,” Assoc Prof Kavurma said.

Research impact in the media

The critical impact of our cardiovascular research received prominent media coverage both nationally and internationally, including the following.

- The Djurali Centre and their work piloting wearable technology for atrial fibrillation (AF) detection in Aboriginal people as well as advocating to close the gap in Indigenous healthcare, with Aunty Mary Waites sharing how participating in AF screening saved her husband’s life.
- Dr Xuyu (Johnny) Liu and his research into a natural chemical found in broccoli that could potentially be used to treat stroke, with Sarah Miles sharing her difficult recovery after suffering a stroke at just 33 years old.

DR XUYU LIU AND TEAM

- Dr Carmine Gentile and his 3D-bioprinted mini-hearts research providing an alternative to heart transplants, with Scarlett Hack sharing her story of needing a heart transplant at just 13 years old.
- Assoc Prof Mary Kavurma and her peripheral artery disease (PAD) research, as well as the launch of the Centre for PAD, featuring PAD patients and amputees Mark Forrester and Simon Josephson.

Supporter engagement highlights

Welcome to **HRI Ambassador Duncan Armstrong OAM**

We are delighted to welcome former Olympian and sports commentator, Duncan Armstrong OAM, as an HRI Ambassador.

Duncan made history when he won a swimming gold medal at the 1988 Seoul Olympics. But despite maintaining an active lifestyle, Duncan suffered a sudden heart attack at the age of 52, resulting in triple bypass surgery.

DUNCAN ARMSTRONG OAM

"I am thrilled to come on board as an HRI Ambassador and join the fight against cardiovascular disease. I am dedicated to helping HRI with their very important mission to prevent, treat and raise awareness about cardiovascular conditions."

Community education and outreach

With one in six Australians living with cardiovascular disease (CVD), HRI offers a range of free health seminars to community groups, universities, retirement villages and other facilities about cardiovascular conditions, their impact and our research.

"Alongside our cutting-edge research, HRI is committed to spreading awareness about CVD and helping Australians take positive steps to reduce their CVD risk," says Katrina Dowling, HRI's Director of Development, Philanthropy and Communications.

"We have been thrilled with the response and level of engagement so far."

GLENYS FITZPATRICK WITH DR JAIDEEP SINGH

Launching the **Glenys Fitzpatrick Scholarship**

HRI is pleased to launch the Glenys Fitzpatrick Scholarship, named in honour of one of our most dedicated and impactful supporters.

"I have been supporting HRI for over 20 years as a regular monthly supporter and now also through the funding of the Glenys Fitzpatrick Scholarship," Glenys shares. "I am proud to be a supporter and feel like my philanthropic gifts are helping to make a difference.

"I have a background in pharmacology, so I know how important medical research is to better understand and address health issues."

The first recipient of the Scholarship is Dr Jaideep Singh. Supported by the Scholarship, Dr Singh will explore how mitochondrial dysfunction in the endothelium contributes to cardiovascular diseases – paving the way for new cardiovascular treatments.

International Women's Day luncheon

HRI held an intimate luncheon to celebrate the role women play in the fight against cardiovascular disease, both as supporters and researchers.

At the luncheon, some of HRI's most loyal female supporters had the opportunity to meet our leading researchers, including Assoc Prof Mary Kavurma, leader of the Vascular Complications Group and Discovery Lead of the Centre for Peripheral Artery Disease, and Dr Siân Cartland, who will be launching the Cardiovascular Immunotherapy Unit in 2025.

SUPPORTERS MEETING RESEARCHERS AT THE INTERNATIONAL WOMEN'S DAY LUNCHEON

PROF JULIE MCMULLEN SPEAKING AT HEART TO HEART

Introducing **Heart to Heart Seminars**

HRI launched our 'Heart to Heart' seminar series in 2024, in person at our headquarters in Newtown and streamed online. This educational series gives our loyal supporters and stakeholders the opportunity to get to know our research team and what drives them. Inspiring stories are also shared by the people HRI's research directly impacts, like dad and athlete Warren Williams, who suffered a catastrophic cardiac arrest.

Hearts for Eternity

Hearts for Eternity Club

HRI has relaunched the Hearts for Eternity Club to recognise those very special people who have committed to leaving a gift in their Will to support the groundbreaking research of HRI and change the health of future generations.

Members of the Hearts for Eternity Club are invited to a range of events and tours, so that they can see the lasting impact of their generosity and connect to HRI's leading cardiovascular researchers.

> **I was told I wouldn't be able to run again, ride a bike, sing on stage, and possibly not even work again. But the hardest part was seeing my family so worried and unsure of what would happen next.**
> *– Warren Williams, cardiac arrest survivor and HRI supporter*

Strategic priorities

For the greatest impact on cardiovascular disease, HRI focuses its efforts in areas that either are or will become major clinical needs – to lead the future of cardiovascular research strategy, change the direction of global heart health, and develop innovative commercialisation opportunities.

Our commitment to **women in STEMM**

Supporting women in Science, Technology, Engineering, Mathematics, and Medicine (STEMM) is one of our key pillars.

By championing and supporting women, HRI enhances the impact of our organisation and contributes to a broader societal shift towards gender equality. Investing in women's participation and leadership in STEMM enriches our research at HRI and strengthens our commitment to excellence and innovation.

Our commitment to **Indigenous health**

Aboriginal and Torres Strait Islander Australians experience major health inequities, and nowhere is this more apparent than in the cardiovascular sphere.

HRI continues its substantial commitment to improving Indigenous health, with the Djurali Centre for Aboriginal and Torres Strait Islander Health Research and Education at HRI spearheading this important body of work.

> **We want to close the gap when it comes to healthcare, and we can do this by helping Aboriginal people be more actively involved in their own health.**
> *– Assoc Prof Uncle Boe Rambaldini, Djurali Centre for Aboriginal and Torres Strait Islander Health Research and Education*

Our commitment to **the next generation of scientists**

Young, up-and-coming researchers are the future of cardiovascular research.

HRI is committed to inspiring and nurturing the next generation of scientists, building a robust pipeline of talent. We provide an exciting and supportive research environment, fostering excellence and mentorship to help students advance their scientific careers and make on impact on the health of the community.

Cardiovascular disease affects people from all walks of life

When Scarlett was 13, she had two cardiac arrests and went into end stage heart failure. Her only hope? An urgent heart transplant.

Fortunately for Scarlett a new heart was found just in time, however recovery has been challenging for the now 17-year-old.

Scarlett bravely shared her story during HRI's 2024 end of financial year tax appeal, helping to raise critical funds. Scarlett and her parents visited HRI, meeting Dr Carmine Gentile, who leads the Cardiovascular Regeneration Group that is developing a world-first alternative to heart transplants using "mini-hearts" and a bioprinter, and seeing the facilities where our groundbreaking research is conducted.

> I ended up on life support for 16 days. I had a very little chance of survival.
> *– Scarlett Hack, heart disease patient and HRI supporter*

When Melbourne paramedic Kelsey Hibberd was 25, her beloved dad 'Chrisso' had a fatal cardiac event, leaving the close-knit family completely devastated.

"After dad died, I felt a sense of injustice and that my role as a paramedic was arriving at patients when they were already impacted by heart disease. I wanted to have an effect earlier, on the other side, in the prevention and detection of cardiovascular disease."

"And I know that heart research saves lives."

Kelsey shared her story during HRI's 2024 Christmas appeal to raise vital funds for Prof Julie McMullen and the Heart Muscle Group. The Group is working to discover a reliable biomarker for identifying people at risk of heart disease – and to develop new ways to prevent and treat heart attack and heart failure.

Ian and Nancy Wood OAM are proud supporters of HRI's life-saving research, with a legacy that will continue beyond their lifetimes.

With a family history of cardiovascular disease, Ian and Nancy have been donating to HRI for 12 years. Continuing their life-long commitment to serving their community, the Woods also decided to leave a gift to HRI in their Wills and set up a charitable trust fund.

"Our hope is that the continued support for HRI research and education will have far reaching benefits to individuals and for the community as a whole," Ian says.

Elle Pendrick was one of the eight babies who are born with congenital heart disease (CHD) every day in Australia.

When she was just six days old, the now 42-year-old had to be air-lifted to Sydney from rural NSW to have her first major heart surgery. Having endured five open-heart surgeries and living with a condition that has no cure, Elle is a passionate ambassador for HRI.

Elle has also been taking part in HRI's CH-FIT trial – a world-first exercise study showing benefits for patients with CHD.

"The CH-FIT trial has been life-changing for me," she says. "After my first few months of exercise, I was fitter, faster, and felt a deep sense of community."

Emeritus Professor Geoffrey Kellerman AO is 97 years young and has been involved with HRI since its inception 35 years ago.

Not just a passionate researcher and mentor, he has influenced generations of medical students and received an Order of Australia. His generosity is now supporting HRI's students and science, and in recognition of his outstanding commitment, Geoffrey was awarded a Distinguished Fellowship of HRI.

"I am honoured to have such a deep and close connection with HRI and love supporting their incredible work," says Prof Kellerman AO.

> Their impact on the prevention, detection and treatment of cardiovascular disease is vital and far-reaching.
> *– Prof Geoffrey Kellerman AO*

> I want everyone who is currently battling heart disease to know that they're not alone. It's amazing knowing that I work with scientists that are doing all this research – and that it's going to help people like me.
> *– Clarissa Pitsikas, congenital heart disease patient and Head of Donor Services at HRI*

Our Research Groups and Centres are using innovative methods to reduce the impact of cardiovascular disease on people and their loved ones

Atherosclerosis and Vascular Remodelling Group

Atherosclerotic cardiovascular disease (CVD) is the leading global cause of death, characterised by the build-up of plaque in blood vessels, which can lead to heart attacks and strokes. Current treatments are often insufficient, failing to fully reverse the disease. Our research focuses on identifying the underlying factors and signalling mechanisms in cardiovascular disorders. By enhancing treatment options and potentially eradicating atherosclerosis, we aim to increase life spans, reduce premature deaths, and lessen the healthcare burden.

2024 highlights: We discovered that increasing NOTCH3 levels can help strengthen atherosclerotic plaques by increasing protective cells, reducing the risk of plaque rupture that can lead to heart attacks and strokes. This is a major advancement because, while current treatments for coronary heart disease focus on lowering overall inflammation or cholesterol levels, there is no existing medication that directly stabilises plaques. NOTCH3 has the potential to become one of the first molecules to directly strengthen plaques, offering a new and cell-based targeted approach to heart disease treatment.

2025 and beyond: We are excited to advance targeted therapies for atherosclerosis, particularly through NOTCH3-nanoparticle driven plaque stabilisation as a potential first-in-class treatment. Expanding lineage tracing applications coupled with nanoparticles to uncover novel cellular dynamics in atherosclerosis will be a key focus. Ultimately, translating these findings into clinically relevant strategies to prevent heart attacks and strokes remains our primary goal.

Cardiovascular disease causes 1 IN 4 DEATHS in Australia

Cardiovascular Regeneration Group

2025 and beyond: The team will be working with our collaborators to strengthen the research network for the Cardio-Oncology Alliance. We have already brought together a stellar cross-disciplinary network of experts in cardiovascular and cancer bioengineering, pathophysiology and medicine. Working across UTS and HRI, as well as with our new partners, we will develop a new platform that will hopefully help patients by preventing severe complications of cancer therapy, and thus provide better quality of life as well as more time with the people they love.

Our research team aims to investigate the underlying mechanisms of CVD using state-of-the-art bioengineered heart tissues developed in our lab. These "mini-hearts" mimic the behaviour of the human heart, and can be used together with a 3D bioprinter to help repair a failing heart or predict the effects of drugs on the human heart. Our mini-hearts can also be used in vitro to model complex diseases such as a heart attack and heart failure. Our ultimate goal is to translate our findings from the bench to the bedside, thanks to the support of our multidisciplinary team comprising experts in cardiovascular pathophysiology, tissue engineering and medicine.

2024 highlights: We made several key discoveries. We demonstrated that we can create a more elastic and durable cardiac patch by using a sustainable natural source using silk; we can study pregnancy-associated heart disease using our mini-hearts; and algae can protect against a heart attack using our mini-hearts.

Cardiovascular-Protective Signalling and Drug Discovery Unit

Thrombotic complications cause one in four deaths globally, yet novel cardiovascular drug discovery remains low. Existing antithrombotic drugs like aspirin are ineffective, especially in diabetic patients, with only 15 per cent avoiding fatal thrombotic events. This issue is worsening due to rising obesity and diabetes rates. The mission of our team is to repurpose existing drugs and develop natural supplements for safer, next-generation CVD therapy, addressing the stalled drug development due to side effects. Our research focuses on understanding heart-healthy diets and herbs to improve cardiovascular therapeutics.

2024 highlights: Our team discovered natural compounds in broccoli, khella, and licorice that can make thrombolytic therapy for strokes three times more effective without increasing the risk of brain bleeding. These compounds also help protect brain cells from stroke damage, showing benefits similar to an advanced neuroprotective drug currently in phase III clinical trials (Tat-NR2B9C). These discoveries have led to invitations to present our research at prestigious international institutions, helping to drive the bench-to-bedside translation of our research.

2025 and beyond: We are excited to advance our translational efforts in 2025 – we are currently preparing multiple patent applications in collaboration with group leaders from the Faculty of Medicine and Health, and the School of Biomedical Engineering at The University of Sydney. Our next focus is to actively explore commercialisation pathways for our research, with the goal of delivering safer and more effective treatments for thrombotic diseases using naturally occurring compounds.

Centre for **Peripheral Artery Disease**

Peripheral artery disease (PAD) involves the narrowing of blood vessels that impairs blood flow, commonly affecting the legs and feet. It impacts health significantly, leading to increased costs for diagnosis and treatment, with over 230 million people affected globally. PAD predisposes an individual to serious outcomes such as strokes, heart attacks, and limb amputation, with higher prevalence and worse outcomes among First Nations people and women. In Australia, treating PAD costs over $875M annually, a figure expected to rise due to aging and persistent risk factors like smoking and diabetes. The Centre for PAD is the first of its kind in Australia and aims to improve diagnosis, treatment and awareness. This is facilitated through innovative research and collaboration across institutions, addressing both health and financial impacts.

2024 highlights: The inaugural PAD Colloquium, held in August, brought together the national PAD community en masse for the first time. The Colloquium was a milestone event, fostering national collaboration and knowledge-sharing among experts in the field. It laid the foundation for future initiatives, research partnerships, and ultimately, a stronger, more connected PAD research community.

2025 and beyond: We are excited about the continued growth and impact of the Centre as we push forward with cutting-edge research and implement patient-centred initiatives. A key focus will be advancing our clinical study on circulating TRAIL levels as a potential biomarker for PAD, which could enable earlier detection and improved risk stratification for patients. Equally important is deepening our engagement with PAD patients and consumers, whose invaluable input has shaped our research priorities. We have a unique opportunity to transform the PAD research landscape and ultimately improve outcomes for those living with PAD.

“It is fascinating to hear more about the new treatments that are currently being developed. I’m so grateful for the research.
– Joseph Gambino, peripheral artery disease patient and HRI supporter

> I support research because, without it, I might not be here today. I want to make sure the next generation never has to face the sort of challenges I've had all my life.
> *– Natalie Reeves, congenital heart disease patient and HRI supporter*

Clinical Research Group

Our research aims to revolutionise care for patients with congenital heart disease (CHD) and prevent severe complications through early detection and prevention. Our focus is on three serious heart conditions: atherosclerosis, CHD, and pulmonary vascular disease. The team has created a leading CHD Registry in Australia and New Zealand, documenting over 80,000 patients. Our work focuses on preventing advanced heart disease, especially in children and young adults, and addressing early-stage pulmonary hypertension.

2024 highlights: We were successful in our grant application for the Medical Research Future Fund 2024 Research Data Infrastructure Grant Opportunity ($3M over four years). We also received additional funding for an existing MRFF grant ($1.3M). This will facilitate the continued work of the CHD Registry, which is the largest registry of its kind in the world.

2025 and beyond: The Group has many publications in the works, allowing the dissemination of research resulting from years of hard work. We are also set to receive data linkage for the National CHD Registry, enriching the already enormous dataset with information from state and federal health data, allowing us to better understand the true burden of the disease.

Coronary Diseases Group

Our mission is to reduce heart disease-related deaths by targeting atherosclerosis and its consequences through novel therapies, particularly focusing on coronary inflammation. One Australian dies from an acute coronary syndrome every 51 minutes. Failure to specifically target persistent coronary inflammation, which drives high rates of recurrent events, is likely a major factor. We have pioneered vascular inflammation research in Australia, emphasising the anti-inflammatory drug colchicine.

2024 highlights: Prof Sanjay Patel currently co-leads two large-scale MRFF and NHMRC-funded clinical trials of colchicine in heart attack (COLCARDIO) and stroke (CASPER) survivors. The Group established an international network of recruiting sites for the COLCARDIO clinical trial (investigating colchicine as a safe, well established anti-inflammatory drug in heart attack), which should significantly boost patient recruitment as well as foster new international collaborations.

2025 and beyond: We are looking forward to continued collaboration with national and international clinical trials groups.

> My research program would not exist without philanthropic support. As a young independent cardiovascular researcher, my lab was solely dependent on donor funding. As a result, we were able to make important basic science discoveries on the role of inflammation in atherosclerosis, which provided a springboard for grant success and funding of large-scale clinical trials.
> *– Prof Sanjay Patel, Coronary Diseases Group*

Djurali Centre for Aboriginal and Torres Strait Islander Health Research and Education

2025 and beyond: Djurali will continue utilising the BHP grant to make tangible health outcomes with Aboriginal and Torres Strait Islander communities by distributing the heart health care kits. We are looking forward to more community visits to offer health research partnerships to assist in community health priorities. We are also excited to partner with iyarn, which provides our team the platform to monitor Aboriginal and Torres Strait Islander individuals' heart health. The team plans to expand working with other Aboriginal and Torres Strait Islander communities interstate, focusing on health priorities and delivering masterclasses on research skills to build grassroots capacity to become researchers in their own right.

The mission of our centre is to enhance the quality of life for Aboriginal and Torres Strait Islander people by promoting inclusion, equity, and respect. Goals include advancing health education and research through co-design, and implementing a targeted health strategy. The focus is on building beneficial partnerships with Aboriginal Community Controlled Organisations, advising on relevant research and teaching, and promoting the Djurali Centre's values. Our aim is to translate research into sustainable changes in community, healthcare, and public policy to benefit Aboriginal and Torres Strait Islander people.

2024 highlights: A significant grant was secured with BHP, as well as a grant from MRFF for the Pepp Study ($2.7M), and a TTRA grant for the Pride Study ($953K). This funding will provide the team opportunities and resources to collaborate and co-design research with Aboriginal and Torres Strait Islander communities. Co-design engages First Nations people at every stage of research, from initial scoping to delivery. Another highlight for Djurali is the partnership through a memorandum of understanding with the Girudala Community Cooperative Society in health research, which allows for the collaboration to improve health outcomes in the Whitsunday region in North Queensland.

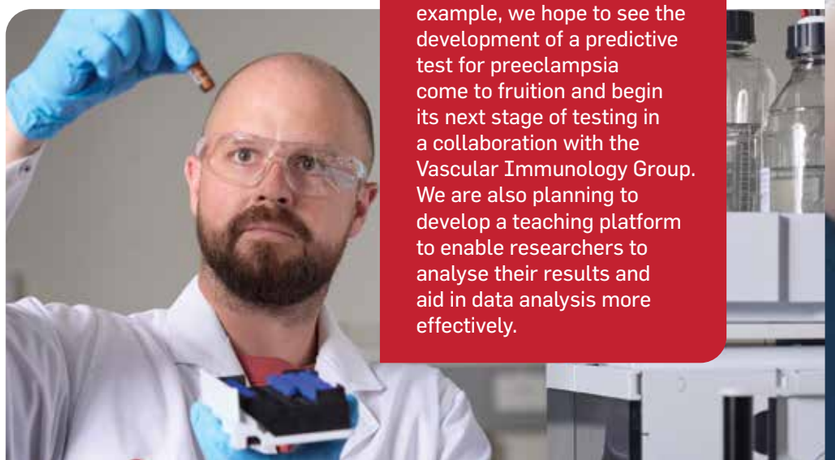
1 in 10
ABORIGINAL AND TORRES STRAIT ISLANDER PEOPLE DIE FROM CARDIOVASCULAR DISEASE

Fluxomics Centre

CVD affects individuals differently, yet current treatments follow a "one size fits all" approach, failing to address each person's unique biological needs. To overcome this, HRI has established Australia's first Fluxomics Centre to study CVD at the cellular level. Unlike traditional omics technologies that offer static snapshots of cellular activity, fluxomics provides dynamic insights, revealing how cells change over time. This approach allows for the creation of personalised "chemical fingerprints" for patients, enabling the prediction of CVD development and the design of tailored treatments. Fluxomics aims to revolutionise CVD treatment by enhancing our understanding of how CVD develops and how treatments work.

2024 highlights: The Centre provided key capabilities to research groups across HRI, helping to advance their research.

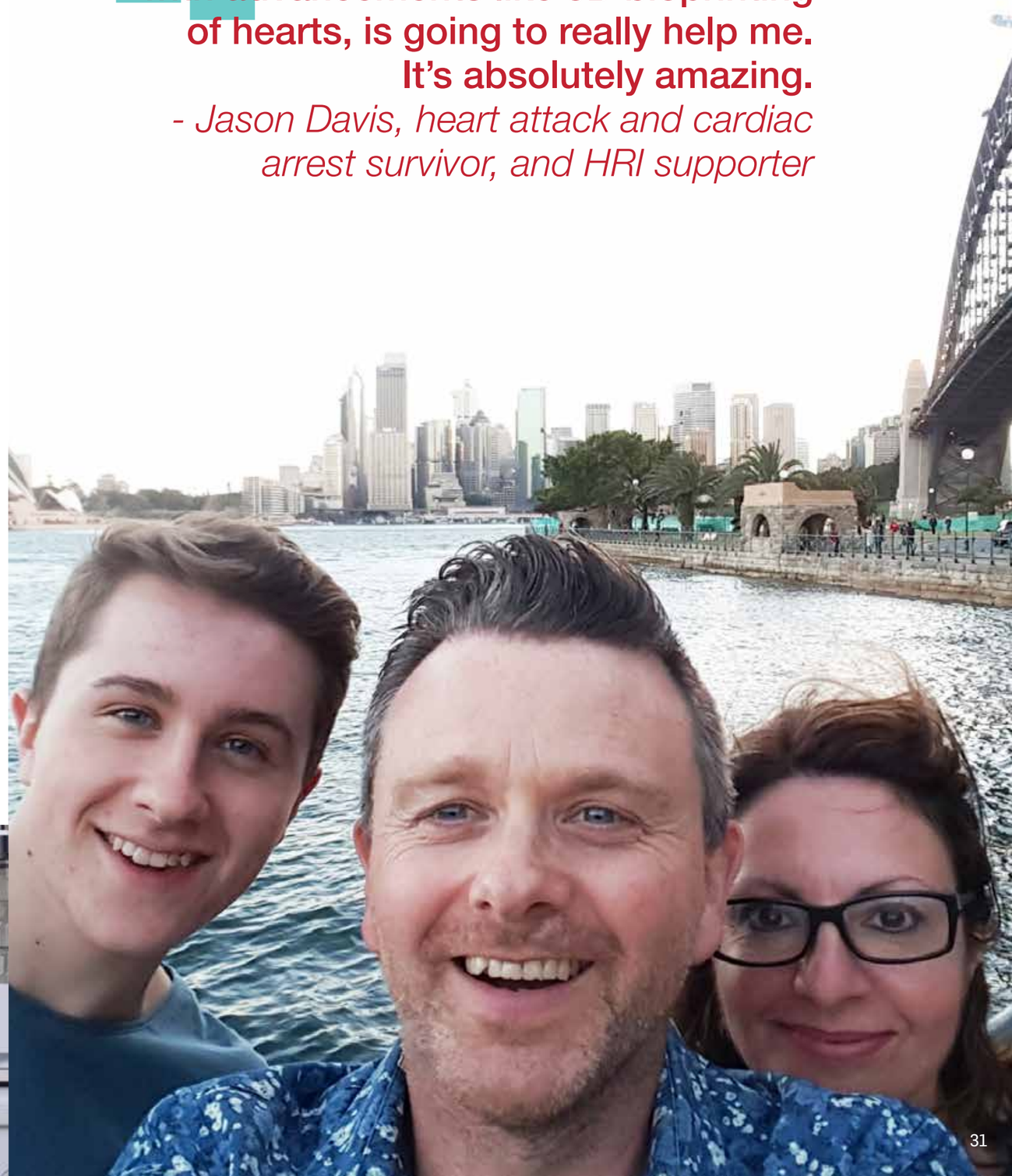
Georgia Watermeyer, Fluxomics Centre Research Assistant, presented her work on the metabolic mechanisms of colchicine at the International Mass Spectrometry Conference. This work has led to further projects to confirm the findings, with the collaboration of other research groups. This conference enabled exposure to the wider applications of mass spectrometry, creating an invaluable international network of mass spectrometry professionals and potential collaborations.



2025 and beyond: We look forward to continuing our collaborative efforts on multiple projects across HRI and seeing our work come to light on a public scale. For example, we hope to see the development of a predictive test for preeclampsia come to fruition and begin its next stage of testing in a collaboration with the Vascular Immunology Group. We are also planning to develop a teaching platform to enable researchers to analyse their results and aid in data analysis more effectively.

"I think what HRI is doing, especially with advancements like 3D bioprinting of hearts, is going to really help me. It's absolutely amazing.

- Jason Davis, heart attack and cardiac arrest survivor, and HRI supporter



> The message I am most passionate about sharing is that if a stroke does happen and you are lucky enough to survive it, your life is not over. I am so grateful for all the research being done to help improve stroke recovery.
> *– Nicole Gallacher, stroke survivor and HRI supporter*

Heart Muscle Group

Our focus is on investigating the differences between healthy heart enlargement, seen in athletes, and disease-induced enlargement, which can lead to heart failure and complications like atrial fibrillation and stroke. Unlike the reversible, beneficial enlargement in athletes, disease-induced enlargement is detrimental and difficult to reverse. Our research aims to identify key genes, proteins, and lipids that protect the athlete's heart and find targets for therapeutic intervention. This includes exploring gene therapy, small molecules, and dietary approaches, as well as examining sex differences and the heart's communication with other organs. Our goal is to improve heart function and prevent complications in heart failure.

2024 highlights: The Group's work has focused on understanding differences between enlargement of the lower muscular chambers of the heart (ventricles) in response to disease (e.g. hypertension) versus exercise. Heart enlargement in response to heart disease will typically progress to heart failure, whereas enlargement in response to exercise is beneficial and does not progress to heart failure. This has resulted in the identification of potential new candidates for drugs and biomarkers for heart failure. In 2024, we extended this work to understand differences between the enlargement of the upper chambers of the heart (atria). This has relevance for understanding why atrial enlargement can lead to atrial fibrillation under heart disease settings, and the identification of new drugs and biomarkers.

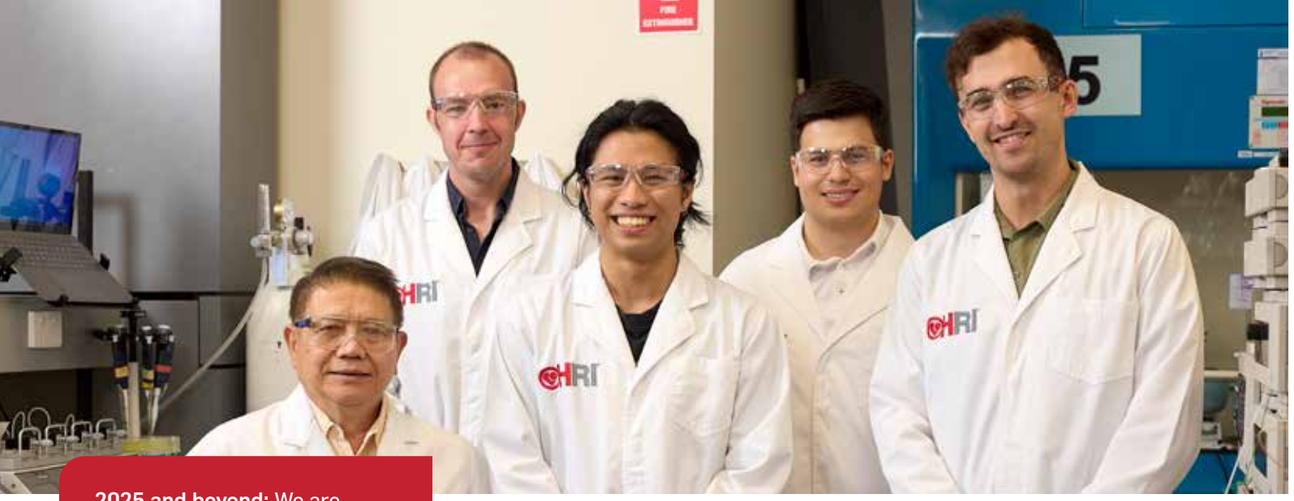
2025 and beyond: We are in the process of establishing a new Cardio-Oncology Alliance with multiple groups at HRI, as well as clinicians and collaborators across NSW. Cardio-oncology has emerged as one of the most challenging areas of medicine. Advances in cancer therapeutics have resulted in a significant number of cardiovascular complications. This includes heart failure, coronary artery disease, arrhythmias, eg, atrial fibrillation, and hypertension. We need a better understanding of why cancer therapies cause cardiac toxicity, who will develop cardiotoxicity, and how to prevent it.

2025 and beyond: In mid-2025, we will complete recruiting for the SAFER-AUS trial, with follow-up commencing for four years from the time the first patients were recruited in 2023. The SAFER trial, with SAFER-AUS its only international arm, will once and for all settle the question of the effectiveness of screening for atrial fibrillation to prevent stroke, because it will be the largest trial on this topic ever completed.

Heart Rhythm and Stroke Prevention Group

Our mission is to detect and treat silent atrial fibrillation (AF) to prevent strokes and cognitive decline. AF, a common heart rhythm disorder, poses a significant stroke risk, especially in older individuals, as it often remains undetected until a severe stroke occurs. We focus on innovative eHealth tools and patient self-screening to identify unknown AF. Our research spans collaborations in Australia and globally, including efforts to screen Indigenous populations. We advocate for widespread AF screening, which could prevent thousands of strokes worldwide.

2024 highlights: Prof Ben Freedman OAM, leader of the Group, was awarded the NSW State Ministerial Award for Cardiovascular Research Excellence, which is given annually to recognise distinguished researchers for their life-long achievement and contribution to breakthroughs in cardiovascular disease. Mark Parsons, a stroke neurologist, won a $3.74M research grant for the AMES study (Atrial Myopathy in Embolic Stroke) to completely change the way in which we search for stroke due to a clot coming from the heart. We formed a Heart-Brain Collaboration to do this clinical trial, which will enrol 700 stroke patients starting in mid-2025.



2025 and beyond: We are anticipating completing our three main research projects (one funded by the Clive and Vera Ramaciotti Foundation) and look forward to further collaborations, both internally at HRI and externally with researchers from other institutes and at Manchester University in the UK. We will also establish patch clamp electrophysiology at HRI to expand the Institute's research capabilities.

Microvascular Research Group

Our research aims to understand the impact of inflammation on microvascular arteries. We focus on blood pressure disorders like hypotension and hypertension, especially in conditions linked to systemic inflammation, such as sepsis and chronic hypertension. Hypertension, a significant CVD risk factor, can damage arteries and elevate the risk of heart attack, stroke, diabetes, and heart failure. Our research aims to develop novel therapeutic strategies to address these critical areas, improving patient outcomes.

2024 highlights: The Group started work on our project to understand how septic shock impacts the cardiovascular system with the aim to develop new treatment options, funded by an NHMRC Ideas Grant (almost $1.5M). We also greatly expanded the research team, including two postdoctoral research fellows.

Vascular Complications Group

Our Group is focused on understanding the development and complications of blood vessel diseases, focusing on peripheral artery disease (PAD). A limb is amputated every two hours in Australia as a result of PAD. By investigating the molecular, biochemical, and cellular mechanisms of atherosclerosis, PAD and related diseases such as diabetes, the aim is to uncover novel strategies and therapeutics to reduce the burden of CVD.

2024 highlights: The Group had a significant publication in Science Advances. This paper explored how the body forms stable new blood vessels in response to ischaemia – a condition where tissues don't receive enough blood due to blocked or narrowed arteries. We discovered that a protein produced by endothelial cells (which line blood vessels), called TRAIL, plays a crucial role in this process. We identified that TRAIL helps build long-lasting, functional microvessels, which could improve blood flow in damaged tissues. This discovery is important because it could lead to new treatments for diseases for PAD, where poor circulation causes pain, wounds, and even limb loss. Our findings suggest that boosting TRAIL activity by repurposing drugs might be a promising strategy to enhance natural blood vessel growth and repair in people with PAD.

2025 and beyond: We are looking forward to advancing research into endothelial dysfunction and mitochondrial health in PAD, with a strong focus on sex-specific differences. A key initiative will be our clinical study investigating circulating TRAIL levels as a potential biomarker for PAD, with the goal of developing new diagnostic tools to identify high-risk patients earlier and improve clinical outcomes. Additionally, we look forward to strengthening national and international collaborations to accelerate progress in PAD research.

Vascular Immunology Group

Our mission is to understand the causes and progression of preeclampsia (hypertension in pregnancy), and its connection to CVD in women. We study placental factors that damage maternal blood vessels and contribute to high cholesterol, increasing heart disease risk. Our aim is to develop new drug treatments for preeclampsia to allow pregnancies to reach full term, reducing premature delivery and long-term heart risks for women.

2024 highlights: In a collaboration with ChiaChi Liu at the Kolling Institute, the Group has identified for the first time abnormalities in the way that the placenta handles adrenalin may be linked to the changes in the mother. We also recently completed the CASPER study in Malawi: Calcium and Aspirin for the prevention of preeclampsia, as part of our work clinically testing prevention strategies and developing new treatments for preeclampsia. This trial is now being analysed for publication.

2025 and beyond: We will continue to study preeclampsia, including examining the way that women use remote blood pressure monitoring to test for emerging high blood pressure, in collaboration with the new Renal and Obstetric Physician at Campbelltown Hospital, Dr Theepika Rajkumar.

2025 and beyond

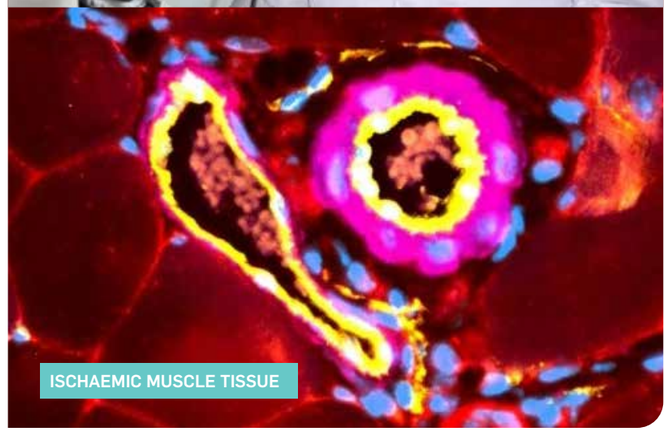
We continue to increase the scope of our research to make the discoveries that will ultimately give people affected by CVD more time with the ones they love.

In 2025, we will launch the Cardiovascular Immunotherapy Unit, led by Dr Siân Cartland. The Unit is dedicated to advancing the understanding and treatment of CVDs through innovative immunotherapeutic strategies.

Their research will investigate the role of immune cells in CVDs such as atherosclerosis, PAD, and heart failure. They will then design and test novel immunotherapies to modulate inflammation, enhance vascular repair, and prevent adverse cardiac events.

We are also establishing a new Cardio-Oncology Alliance to address the emerging and challenging area of cardiovascular complications resulting from cancer therapeutics. We need a better understanding of why cancer therapies cause cardiac toxicity, who will develop cardiotoxicity, and how to prevent it. The program will be a collaboration across multiple groups at HRI, led by Prof Julie McMullen, as well as clinicians and other collaborators throughout NSW.

DR SIÂN CARTLAND



ISCHAEMIC MUSCLE TISSUE

Operations update

2025 and beyond: We recognise that as an Institute, we have the capacity to make a meaningful and lasting contribution to Australia's First Peoples. By partnering with regional and remote Aboriginal communities and with support from philanthropic organisations and donations, we will work tirelessly to close the gap on health outcomes for Aboriginal and Torres Strait Islander people.

We remain committed to investing in the growth and development of our staff, including through a young researcher seminar series commencing in 2025. We will also continue to drive and promote a culture of safety and encouragement inside our HRI community, by developing and implementing new WHS strategies.

Upcoming projects include restoration of the exterior of our Eliza Street building, as well as delivery of a series of cyber security uplift initiatives.

Human resources

As part of our commitment to Diversity, Equity and Inclusion, several initiatives were implemented and promoted across HRI, led by an active Diversity Council.

- Our inaugural Reconciliation Action Plan was launched, representing our dedication to the reconciliation journey, which aims to strengthen relationships between Aboriginal and Torres Strait Islander peoples and non-Indigenous Australians for the benefit of all.
- We introduced cultural and ceremonial leave for staff who observe days of particular cultural significance.
- Our Women in STEMM working group supports female researchers in their career journey, with initiatives including International Women's Day events, the HRI Reward and Recognition Program, launch of Support for Carers and Parental Leave information booklets, manager training, launch of mentoring programs and a gender pay gap analysis.

We are also committed to training and development of our staff, with numerous workshops held in 2024.

HRI VALUES AWARDS WINNERS

Some focuses included cultural awareness, confidence building, ethical bystander, family and domestic violence. Mental Health First Aid training was also conducted.

Financials

Following a couple of years of financial challenges, HRI delivered a surplus in 2024 through strategic growth in our science groups as well as through optimising efficiencies in the research support and professional services teams.

In summary:

- Total income from Category 1 and Category 2 Grants was $23,715,306. Notable increases in science revenue were due to the contributions of, for example, the Heart Muscle Group led by Prof Julie McMullen, and the Djurali Centre for Aboriginal and Torres Strait Islander Health Research and Education.
- The growth in income was accompanied by increased total personnel costs of 13.7 per cent, as we continued to strategically invest in our scientific personnel as well as support domestic and international Higher Degree Research students.
- We continue to reduce reliance on regular giving revenue streams and diversify our funding base by focusing on enhancing relationships with long-term supporters of HRI, among other strategies. We also developed new partnerships, such as with BHP, while increasing fundraising efficiency.
- The group consolidated accounts were also positively impacted in 2024 by an unrealised investment income of $2M.

A copy of HRI's full annual financial report is available at: www.hri.org.au/reports.

Facilities and sustainability

We continued to improve our building and facilities to support the critical research being conducted. The office area in the Eliza Street building was expanded to provide more working space for science teams, with new seating arrangements to assist in collaboration between teams and departments. New meeting room monitors were also implemented to increase the efficiency of room usage.

In 2024, waste recycling resulted in 14 tonnes of general waste going to landfill bio-reactors (gas energy facility), and 3.5 tonnes of mixed recycling, 3 tonnes of cardboard, and 1.5 tonnes of general waste to landfill.

Work Health and Safety/ Laboratory operations

During 2024, we welcomed the Heart Muscle Group to HRI from their previous home at the Baker Heart and Diabetes Institute in Melbourne. The laboratory operations team worked with the Group to transition their equipment to our Eliza Street laboratories, ensuring that they can conduct their research in an efficient, safe and productive environment.

We are grateful for generous funding received from the James and Jutta Lauf Foundation, which enabled us to upgrade and replace key equipment in the laboratory.

We also added a new high performance liquid chromatography (HPLC) machine to our suite of high-tech equipment, greatly increasing our ability to purify and isolate small molecules. This will be of immense value to all our research groups.

HRI TEAM CHRISTMAS PARTY

Technology

The technology team worked collaboratively with the Development and Philanthropy team to continue improving our Supporter Relationship Management system.

We also successfully implemented a network replacement, significantly enhancing its security, performance and scalability. This upgrade modernised our network infrastructure, improving threat detection, access controls, and overall resilience against cyber threats.

This network investment also strengthens HRI's cyber security foundation. We have put in place systems and processes to further strengthen our cyber security environment in line with a framework based on the NSW Government Cyber Security Policy,

We continue to improve our management of cyber security governance and resilience through ongoing annual Payment Card Industry Data (PCI) compliance activities, ensuring payment security standards are upheld, protecting customer data and maintaining regulatory adherence.

Board of Governors

The Board of Governors is chaired by The Hon Peter McGauran and comprises a representative of the Deans of the Medical Schools of Australia, two nominees from each of the Sydney Local Health District and The University of Sydney, and leaders from the corporate sector.

The Board is responsible for the governance of the Heart Research Institute. It approves and monitors governance, strategy, budgets and scientific progress. Members are balanced to represent the corporate and scientific community. The majority of the Board positions are available to be filled via election by the members of the incorporated company, the Heart Research Institute Ltd.

To read the bios of our Board Members: www.hri.org.au/about/meet-the-board

THE HON PETER MCGAURAN

> **Nobody and nothing stands still at HRI. Just as our researchers strive for continual excellence, so does the Board of Governors in enhancing the research environment.**
> *— The Hon Peter McGauran, Chair of the Board of Governors*

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I need to stay healthy for my family and grandchildren – they are my world. I'm now a passionate supporter of research to prevent stroke. I know it can save many lives like mine.

– Maryanne Bawden, stroke survivor and HRI supporter

Contact us

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Philanthropy 1800 651 373

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Cover: (Top) Heart spheroid, (Middle) Dr Clara Liu, Heart Muscle Group, (Bottom) Human coronary artery endothelial cells

Heart Research Institute

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HRI

HRI acknowledges the traditional owners of the land where our offices are located, the Gadigal people of the Eora nation.