THE BAIRD INSTITUTE
Applied heart & lung surgical research

heart TO HEART

MAY 2026

LAUNCHING A NEW LIFELINE FOR AUSTRALIANS LIVING WITH AORTIC DISEASE

The Baird Institute is committed to supporting patients and families living with aortic disease, grounded in the belief that one of the greatest gifts we can offer one another is support. This principle is strongly shared by Dr Michelle Lim, a cardiologist dedicated to the care of patients with aortic conditions. Through her work guiding patients along their treatment journey and in following their recovery after aortic surgery, Dr Lim has developed a deep understanding of the emotional challenges that often accompany aortic disease.

Having observed the meaningful impact of established aortic support groups overseas, Dr Lim recognised the value they bring to patient wellbeing and long-term care. Together with The Baird Institute, she is helping to bring this vision to life in Australia.

We are excited and proud to announce the launch of the **Australian Aortic Support Group**. An initiative designed to provide education, connection, and support for patients, as well as their families, carers, and friends.

The inaugural meeting will take place on **Saturday, 23 May 2026**, at Camperdown Commons in Camperdown. This event will offer a welcoming space for individuals and their loved ones affected by aortic disease to come together, share their experiences, and support one another over morning tea.

For many, living with an aortic condition can be accompanied by uncertainty and the need for lifelong medical care. This support group aims to be a patient-led community. Created by patients, for patients, where individuals can exchange practical advice, offer emotional support, and build confidence in navigating life with aortic disease.

Those interested in participating in future support group meetings are encouraged to register via the Australian Aortic Support Group webpage:

bairdinstitute.org.au/improve-patient-outcomes/australian-aortic-support-group/

You can also join the dedicated Facebook Support Group here:

www.facebook.com/groups/aorticsupportgroupaustralia

This initiative marks an important step toward strengthening support networks for people living with aortic disease across Australia.

A NOTE FROM OUR PATRON

The Hon. Michael Kirby AC CMG

As Patron of The Baird Institute, I am continually inspired by the progress being made in heart and lung research, and by the generosity of the community who make this work possible.

This edition of the newsletter reflects both the scientific advances being achieved and the very real human impact behind them. It is clear that improving patient outcomes is not only about breakthroughs in the laboratory, but also about the support, care and connection that surround each patient's journey.

The launch of the **Australian Aortic Support Group** is a wonderful example of this. For many individuals and families living with aortic disease, the experience can be isolating and uncertain. Creating a space where people can come together, share experiences and support one another is an important step in improving not only clinical outcomes, but quality of life.

Alongside this, you will read about research that is pushing the boundaries of what is possible. From the development of bioabsorbable vascular grafts that may one day allow the body to regenerate its own blood vessels, to new insights into complex and often silent conditions such as thoracic aortic aneurysm, this work offers real hope for the future.

Henry Shiner's story shared in this edition is a powerful reminder of why this work matters so deeply. It brings into focus the lifesaving impact of expert care, and the importance of continuing to invest in research and innovation.

None of this would be possible without you.

Your support plays a vital role in enabling research, supporting emerging clinicians and scientists, and strengthening initiatives that improve patient care and wellbeing. Every advancement, every discovery, and every life impacted is made possible through your generosity.

Thank you for your continued commitment to this important work.

Patron, The Baird Institute

FROM THE CEO'S DESK

At The Baird Institute, we are driven by a clear goal: to improve outcomes for patients living with heart disease. This newsletter reflects the meaningful progress we are making together, thanks to your support.

One of the highlights in this edition is the launch of the ***Australian Aortic Support Group.*** *This initiative responds to a clear need. Patients and families navigating aortic disease often face uncertainty and long-term challenges. By creating a dedicated space for connection, education and shared experience, we are extending our impact beyond research and into everyday patient care.*

You will also see the breadth of research currently underway. From developing next generation bioabsorbable vascular grafts, to advancing our understanding of complex conditions such as HFpEF and thoracic aortic aneurysm, our researchers are tackling some of the most pressing challenges in cardiovascular health. Importantly, much of this work is being led by emerging researchers, whose careers are being shaped by opportunities made possible through donor support.

It is also wonderful to see this work recognised at the highest level, with Professor Paul Bannon receiving significant national honours. This recognition reflects not only individual excellence, but the strength of the research environment you help sustain.

Most importantly, this edition reinforces the real-world impact of what we do. Whether it is a patient surviving a life-threatening event, or new discoveries that challenge what we once thought impossible, your support is helping to drive change.

Thank you for being part of this journey. Together, we are advancing research and improving lives.

Catherine Rush
CEO, The Baird Institute

No time to waste!

By Henry

November 6, 2019, was the day that changed my life for ever.

I had recently turned 60 and I had spent most of my working life of 37 years travelling the world whilst working in executive level, high pressure roles. I had always been a fanatic about keeping fit during those years, waking each morning 6 days a week at 5.30am to train, either a run, a cycle class or a weight routine. I had lost my dad at an early age; he had suffered a massive stroke at the age of 42 and one of his brothers also died at 39 from sudden heart failure. I was determined to beat the genes I had been given and keep myself fit.

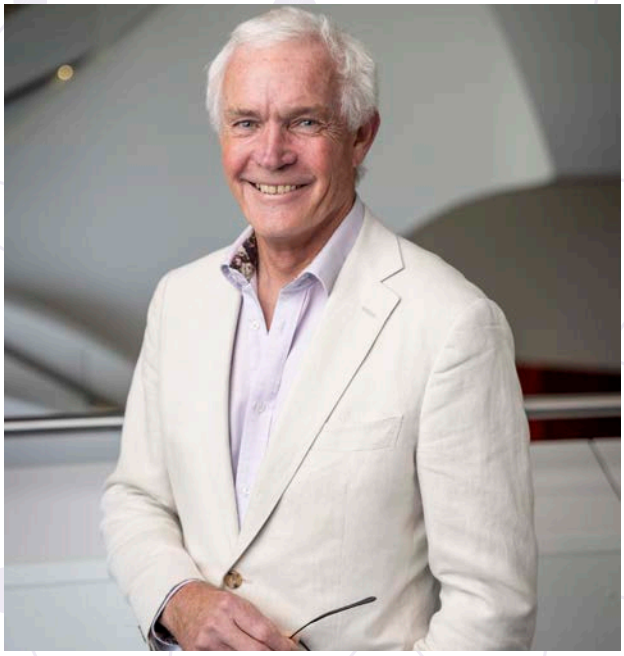
I had recently stopped fulltime work to commence a Board Directors career which freed me up for other interests and more training! It was a normal Monday morning routine, weight workout followed by a cycle class. Who knew that major upheaval was about to happen, on my last bench press I felt something pull deeply in my whole torso leading up to my neck. I stood up, abandoned the thought of the cycle class and went home to the surprise of my partner, he immediately asked why so early? I explained to him what happened, and he became more alarmed than me.

A couple of visits to the GP and I was told “all is ok”. A couple of days passed, and I was still not feeling quite well, and thought that perhaps I had gall stones. After much insistence from my partner, I agreed to go to Royal Prince Alfred Hospital (RPA). I walked in with my runners and shorts and a t-shirt, thinking they can do an ultrasound and confirm my gall stones, and I would go home! Whilst my partner went to park the car and come back, my world changed. The emergency nurse said my heart rate was 160 and called the resuscitation team. From there the most amazing ER doctors were relentless in tests etc to discover I had suffered a Type A dissection of the AORTA, and I was told I must have immediate surgery to save my life. This also meant I had to say goodbye to my partner and siblings and Mum, as I was given just a 50 % chance of surviving the surgery.

Henry at RPA Hospital post surgery

I underwent eight hours of surgery, and I thank God for the medical team who saved my life that night. Dr Davies ER for her relentless testing & Cardiothoracic surgeon Professor Tristan Yan and his team for operating on me with the best expertise in the world. I spent 7 days in ICU with heaven sent nursing staff, then three days in the ward. Rehab was amazing at RPA with a great counselling service included. It is six years on, and life is certainly different, no more intense training, only our daily walks in the local area. Being able to travel and have time with family and friends, I wake up each morning and give thanks I am alive and live near one of the best hospitals in the world whose Medical Staff, are filled with expertise and research knowledge that saves lives.

RESEARCH UPDATE



A WELL-DESERVED RECOGNITION FOR PROFESSOR BANNON

Over the past six months, our Chair, Professor Paul Bannon, has received significant recognition for his leadership and contribution to cardiothoracic surgery - an achievement that reflects the calibre of work taking place at the Institute.

Paul has been awarded the ANZCTS President's Award, a prestigious honour from the Australian and New Zealand Society of Cardiac and Thoracic Surgeons. This award recognises not only Paul's excellence as a surgeon, but also his dedication as a teacher, mentor and colleague, and his lasting contribution to the field.

He has also been named the leading Australian researcher in heart and thoracic surgery in The Australian's 2026 Research Magazine, which identifies the nation's top 250 researchers. To determine the Top 250 research leaders, the magazine assigns each researcher an impact score based on research output across 250 fields. Rankings reflect quality (papers published in the top journals), impact (citations over the past five years), and volume (sustained output meeting quality and impact standards). This is the second time Paul has received this distinction, having also been recognised in 2021.

These honours are a powerful reminder that the research you support is being recognised at the highest level and continues to make a meaningful impact both here in Australia and internationally.

30TH ANNUAL CONFERENCE OF THE AUSTRALASIAN SOCIETY FOR BIOMATERIALS AND TISSUE ENGINEERING

Wade Bocking – Baird Scholarship Recipient

In April, I had the opportunity to present my work on developing a novel bioabsorbable vascular graft to regenerate damaged arteries at the 30th annual conference of the Australasian Society for Biomaterials and Tissue Engineering held in Adelaide, South Australia.

My research looks at finding an alternative option for vascular graft replacement surgeries as the current options, while lifesaving in many cases, can fail over time leading to organ damage, limb amputations and even death. Currently, surgeons have two main options; autologous grafts (vessels harvested from the patient) and synthetic grafts (manufactured materials). However, due to the systemic nature of most cardiovascular diseases, the availability of suitable autologous grafts can be limited. In addition, synthetic grafts like Gore-Tex and Dacron often fail overtime due to suboptimal physiological and mechanical properties.

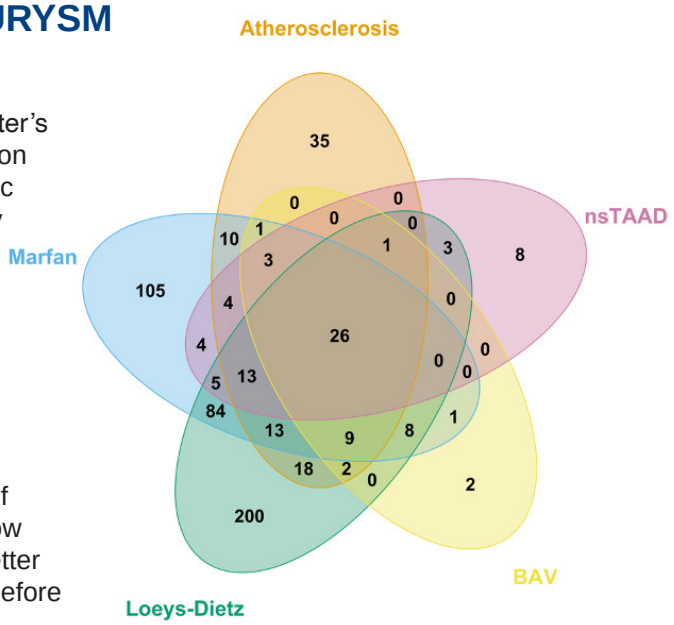
Our work aims to address these limitations by developing a degradable vascular graft which facilitates the regeneration of vessels. Ultimately, the implanted graft will remodel into a native-like vessel, mimicking the structure and function of healthy arteries. If successful, this graft could revolutionise vascular surgery, providing an 'off the shelf' solution and improving surgical outcomes.

The Australasian Society for Biomaterials and Tissue Engineering conference brought together a diverse community of researchers, clinicians and industry professionals providing a valuable platform to share ideas, receive feedback, foster collaborations and gain insights into the latest tissue engineering techniques. I am extremely grateful to The Baird Institute and its supporters for making it possible for me to attend and share my work. It was a fantastic experience which will ultimately help to elevate my research.

UNDERSTANDING THE MOLECULAR MECHANISMS UNDERLYING THORACIC AORTIC ANEURYSM

Briet Steffansdottir

Over the past year, I have been working on my master's thesis with the support of The Baird Institute, focusing on understanding the molecular mechanisms underlying thoracic aortic aneurysm (TAA). I'm happy to say that finally my thesis, "Common Proteomic Signatures in Thoracic Aortic Aneurysm: Insights into Underlying Molecular Mechanisms" has been successfully submitted.



TAA is a life-threatening condition and a "silent killer", characterised by progressive weakening and dilation of the aortic wall, often without warning. Every year, it causes an estimated 150,000-200,000 deaths globally. Current clinical practice rely on measuring the size of the aorta to decide if surgery is needed, yet serious complications often occur below recommended surgery size thresholds. Doctors need better ways to detect the disease, assess its risk, and take action before catastrophic events occur.

To better capture the underlying biology of disease progression, I studied the proteins in human TAA tissue by comparing healthy aortic tissue with diseased TAA tissue from five different subgroups, degenerative (atherosclerosis), syndromic (Marfan syndrome, Loeys-Dietz syndrome) and non-syndromic (bicuspid aortic valve, familial nsTAAD). The main idea was: "If the same proteins change across all five subtypes of TAA, an underlying problem is shared by all".

Excitingly, 26 proteins were found altered across all subtypes, either increased or decreased compared to healthy aortas. Many of which are involved in well-known pathological processes already associated with TAAs. Even more interestingly, 14 of these proteins were connected to the TGF-B pathway, one already known to be important in TAA patients with Marfan and Loeys-Dietz syndrome. This discovery could have real clinical benefits. If all TAA subtypes share the same underlying problem, there is the potential for earlier identification of patients-at-risk, better monitoring of disease progression, and hopefully, development of new therapies targeting the shared biological problems found.

This work contributes to the broader effort to transform TAA from a silent killer into a predictable and manageable condition. I look forward to building upon these findings in future research. Next steps will be focusing on strengthening and translating these findings. This research could not have been possible without The Baird Institute and their generous donors, who continue to support and enable future heart and lung research. I'm extremely grateful for the opportunity to contribute to their mission.

EXERCISE ECHOCARDIOGRAPHY IS A USEFUL TOOL IN THE DIAGNOSIS OF HFpEF

Professor John O'Sullivan

Professor O'Sulllivan from our Centre for Heart Failure & Diseases of the Aorta has recently authored an important high impact paper on diagnostic criteria for HFpEF (a type of heart failure where the heart pumps normally but struggles under stress). This paper explains that diagnosing HFpEF is often difficult because many patients appear normal on standard resting tests. It argues that testing the heart during exercise is crucial, because the problem in HFpEF typically only becomes apparent when the heart is under strain. While the most accurate test involves invasive measurements, this isn't widely available, so exercise echocardiography (a heart ultrasound done during exercise) offers a practical alternative. However, current versions of this test can miss a significant number of cases, meaning some patients may be falsely reassured and go untreated. The authors suggest that improving how the test is performed, refining diagnostic thresholds, and incorporating additional measures and artificial intelligence could make it much more reliable in the future, helping ensure that more patients are correctly diagnosed and treated.

BAIRD INSTITUTE WEBINARS

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Cardiac Ageing – 30 March 2026

Prof Paul Bannon, Prof Sean Lal & Dr Cassandra Malecki

In this webinar, held on 30 March 2026, Professor Bannon, Professor Lal and Dr Malecki provided an update on their ongoing research at the *Centre for Heart Failure and Diseases of the Aorta* into cardiac ageing. Thanks to the generosity of our supporters, we have been able to take significant steps forward in this research.

The team have recently performed cutting edge technology called “spatial transcriptomics” to help further characterise the changes happening in the heart as we age. We are in the process of analysing the data which will reveal which genes are being switched on and off in the hearts as we age and what specific cells in the heart are most effected. This will greatly advance our understanding of human cardiac ageing, bringing us another step closer to identifying promising mechanisms that can be leveraged to slow age-related damage to the heart.

Catch Up on Our Webinars at Any Time

At The Baird Institute, we’re committed to keeping our supporters informed and engaged through our online webinars. These sessions are a fantastic opportunity to hear from experts, learn more about the latest developments in heart and lung research, and to get an insider’s view of the important work we’re doing.

If you’ve ever missed a webinar or simply want to revisit one of our past sessions, don’t worry – you can watch them at your own convenience! All of our webinars are recorded and available for viewing at any time. Simply visit our webpage at - bairdinstitute.org.au/webinars

NEW STAFF

Isabel Vance

My name is Isabel and I am a third-year medical student at the University of New South Wales with a strong interest in research and patient care. I am eager to be involved in meaningful work that supports advances in medicine and improves patient outcomes.

I have recently joined The Baird Institute as a Donor Relations Officer, where I assist with donor communications and data management, and I am excited to contribute to the important work of the Institute

The Baird Institute Daily News

Textbooks say it is impossible. But this Australian heart has done it

Adapted from The Sydney Morning Herald – January 18, 2026

For many years, we've been told that the human heart cannot repair itself after a heart attack. But thanks to groundbreaking research led by the University of Sydney and supported by work at **The Baird Institute**, there is now real hope that this may not be the case.

In a remarkable discovery, researchers have found the first evidence that the human heart can attempt to regenerate its own cells.

This breakthrough was made possible by a very special gift — a donated heart, preserved for 18 years at t**he Sydney Heart Bank**. Because this tissue was carefully stored, researchers were able to study it in extraordinary detail, capturing a moment in time just after a heart attack.

What they found was extraordinary. Around 11% of heart muscle cells near the damaged area were actively trying to divide and repair the heart, something long thought impossible in humans.

Further studies in patients undergoing surgery shortly after heart attacks have shown similar signs of this natural repair process, although at lower levels.

While this regeneration is not yet enough to fully heal the heart, the implications are profound. For the first time, we can see that the human heart has an inbuilt ability to try to repair itself.

Researchers now believe this process may be triggered by low oxygen levels following a heart attack, echoing conditions in the womb, when the heart is able to grow and develop rapidly.

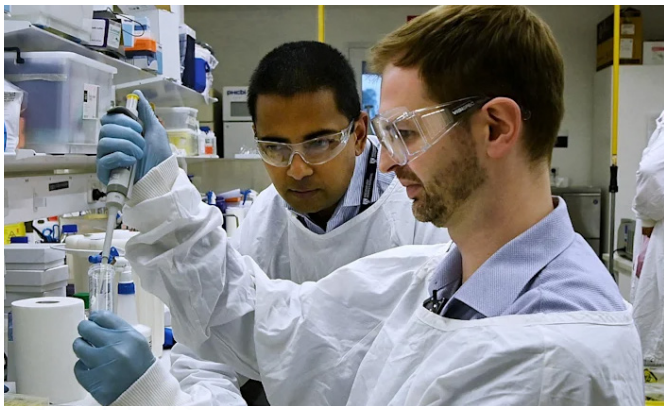

Photo Credit: Kate Geraghty (SMH)

Understanding this could unlock entirely new ways to treat heart disease.

The ultimate goal is to develop therapies that can enhance this natural healing process, helping the heart to rebuild itself after damage and potentially transforming outcomes for patients living with heart failure.

This is still early-stage research. But it is an important step toward what many have called the "holy grail" of cardiology. And it is only possible because of the generosity of donors both those who give the gift of life, and those who support the research that follows. Your support is helping to turn what was once thought impossible into something that may one day save countless lives.

Original article featured in The Sydney Morning Herald on 18 January 2026 – Story by Kate Aubusson

YOUR WILL, YOUR LEGACY

Writing a Will is one of the most meaningful ways to ensure your wishes are respected and your loved ones are cared for. It also gives you the opportunity to support the causes that have mattered most to you during your life. Despite this, around 40% of Australian adults don't have a valid Will in place.

A well-considered Will allows you to make decisions about your assets, name guardians for dependents, and appoint an Executor to carry out your instructions. You can also choose to leave a gift to a charity, helping to continue the work you value beyond your lifetime.

By including The Baird Institute in your Will, you'll be supporting vital research into heart disease — research that saves lives and improves health outcomes for future generations. Your legacy can help fund breakthroughs in treatment and care, long after you're gone.

If your circumstances change, remember that your Will can be updated at any time. It's a simple but powerful way to make a lasting difference.

If you have any questions about leaving a gift in your Will, please contact our CEO, Catherine Rush, on 02 9550 2350 or email her at catherine@bairdinstitute.org.au

Many Thanks to Our Supporters

Every one of our donors has contributed in a significant way to our research and training programs and we are very grateful for their support. We would particularly like to thank our invaluable principal supporters.

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