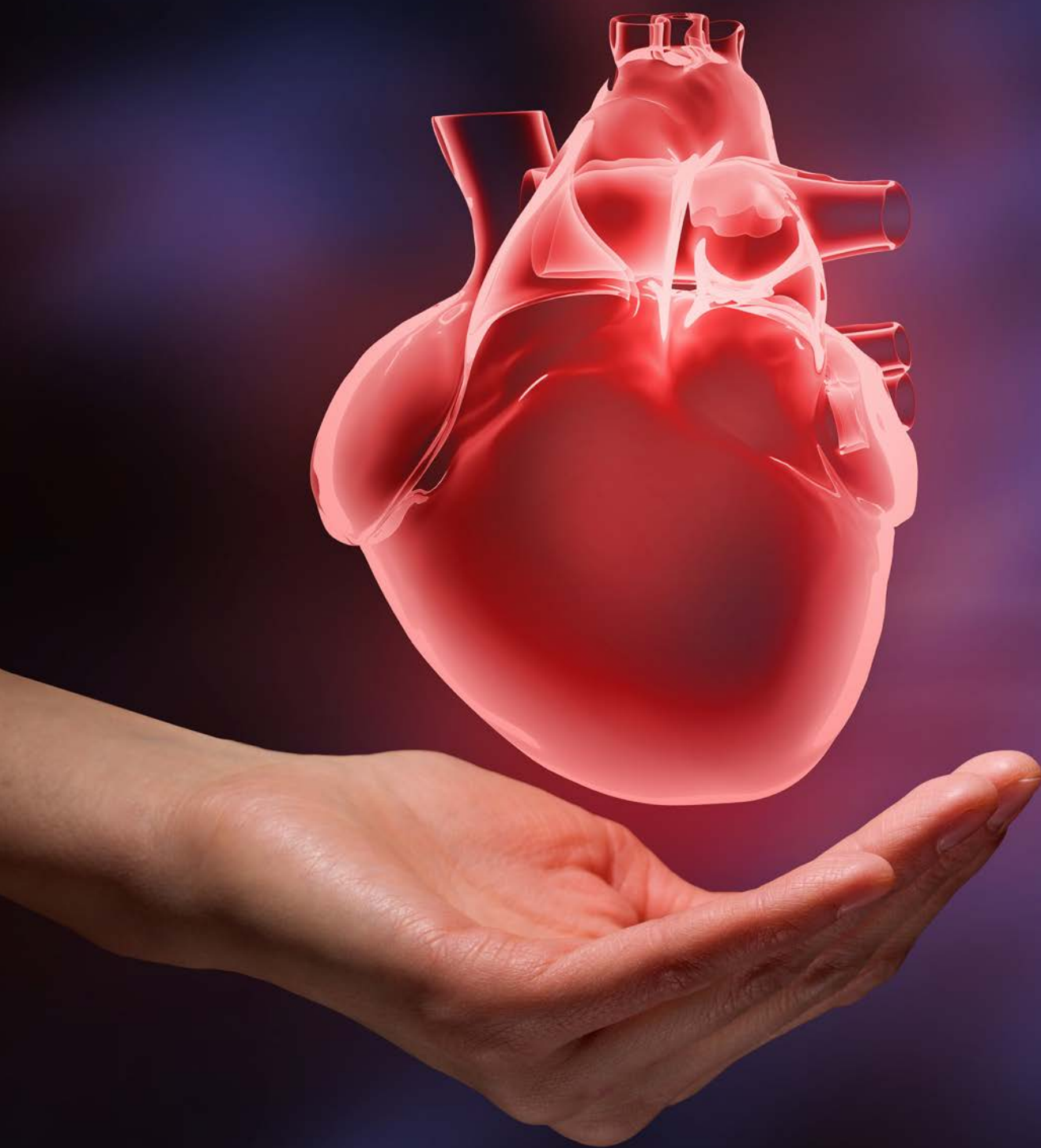




THE BAIRD INSTITUTE

Applied heart & lung surgical research



ANNUAL REPORT • FINANCIAL YEAR 2019



A MESSAGE FROM OUR PATRON,

The Hon Michael Kirby AC CMG

I am proud to have recently been appointed Patron of The Baird Institute: an outstanding and practical research centre that works in close collaboration with the famous Royal Prince Alfred Hospital in Sydney. I am especially proud to succeed Professor The Honourable Dame Marie Bashir AD CVO, a distinguished medical scholar and former beloved Governor of New South Wales.

I knew Professor Doug Baird AO from our days as students at Sydney University. We both served together on the board of the Sydney University Union. Doug Baird was not only an outstanding intellect, he was engaged in the rich life of Sydney University in the 1960s. He saw distinguished service in the Australian Defence Force medical unit working in Vietnam, during the time when Australia was involved in the conflict there. He often told me of the horrendous injuries suffered by civilian casualties of the war, as well as by some soldiers. These catastrophic injuries required heroic surgery on his part that would not ordinarily come his way as a young surgeon. That experience gave him great self-confidence in the skills that were demanded. It prepared him for his life of leadership in the new field of cardiac surgery at RPAH.

Not long after this time, my mother suffered a heart attack. She was rushed to hospital and came under Doug Baird's attention. He swiftly performed a coronary artery graft in the old Page Pavilion. This restored my mother to good coronary health. My family were deeply grateful for Doug Baird's skill and gentle attention. But he contradicted the stereotype that surgeons are insensitive. His patients loved him and so did their families. This tradition has been maintained, following his death, by RPAH and The Baird Institute. Subsequently, I myself came under the care of Professor Paul Bannon, who performed a coronary graft on me in 2005 and it is still working as well as the day on which it was undertaken.

We hope to present no further generations of the Kirby family for cardiac surgery in the near future. But if we do, it will be the skilled care and attention of the surgeons involved in The Baird Institute to whom we will turn. They are not only leaders in cardiac surgery in Australia, they reach out to other lands to bring the expertise developed here at RPAH. Mixing practical talent, intellectual research and human kindness is the magic combination of The Baird Institute and its members. In this respect it continues in the high tradition first established by Doug Baird. It is why I am proud to be Patron.



A MESSAGE FROM OUR CHAIR

Professor Paul Bannon MB BS, FRACS, PhD

Over the past 12 months, significant research study outcomes are helping heart and lung surgical patients each day by ensuring that the care we provide and the way that care is delivered, is based upon sound facts and an understanding of how individual and group responses differ. This year we have continued to develop three major areas of research which essentially and appropriately mirror our major clinical programs. These are Aortic Aneurysm and Vascular Modelling Research, Innovative Surgical Techniques and Devices and finally, Robotics. Their partner clinical programs include work in aortic reconstruction, percutaneous valve implantation (TAVI) and minimally invasive heart and lung surgery utilising robotic techniques. Further information on our research can be found in the following

pages of this Annual Report. Your donations have a pivotal impact upon ensuring that these specific areas of research continue and that the study of cardiac disease, genetics and blood vessel abnormalities can be better understood, and appropriate interventions developed.

I thank the members of The Baird Institute Board, who gave their time and expertise to guide the Institute throughout the year. We look forward to a new and exciting year in 2019/2020 with research activities expanding across various disciplines as we continue to realise The Baird Institute's mission, to foster research and apply science to improve the outcomes for patients facing heart or lung surgery.

GOVERNANCE

The Baird Institute is registered as a charity with the Australian Charities and Not-for-profits Commission (ACNC). Eligible tax-deductible donations have Deductible Gift Recipient (DGR) status with the Australian Taxation Office.

WHO WE ARE

Established in 2001, The Baird Institute is the only dedicated cardiothoracic surgical training and research institute in Australia. A Sydney-based charitable organisation, the institute is operated by a small, multi-skilled team and supported by a board of pro-bono volunteers.

Our research model is a translational one. As an organisation, we focus on the translation of quality research into improved surgical practice and delivery of long-term public health solutions. This model incorporates expertise in surgical and clinical management with cutting edge research and surgical/health professional training to ensure we have a positive impact at all stages from diagnosis through to treatment and recovery of our patients.



DOUGLAS BAIRD

20 JUNE 1940 – 16 NOVEMBER 1995

"There was no better exemplar of the ideals of science, surgery, sensitivity and skill than Douglas Kevin Baird"

Professor Paul G. Bannon

Professor Douglas Baird was a truly great Australian with a passion for improving heart and lung surgical techniques for the benefit of all. A young Baird developed his passion for cardiothoracic surgery whilst an intern at Royal Prince Alfred Hospital (RPAH) and later became a Fellow of the Royal Australasian College of Surgeons (RACS) in 1971. His commitment to excellence in medicine and surgery was obvious as a medical undergraduate when, at Sydney University, he also completed a Bachelor of Medical Science (BMSc) and won seven prizes including the University Medal. In his eulogy, The Baird Institute patron, the Honourable Michael Kirby, described him thus: "Sweet was his nature and notable his achievements".

OUR PATRON

The Hon Justice Michael Kirby AC CMG

OUR BOARD OF DIRECTORS

Prof Paul Bannon, MBBS PhD FRACS, Chair

Prof Jeffrey Braithwaite, PhD, FIML, FCHSM, FFPHRCP, FAcSS, Hon FRACMA, FAHMS

Dr Michael Byrom, MBChB GradDipSurg PhD FRACS

Mr Shaun Clyne, MA LL.M (Syd)

Prof Clifford Hughes, AO MBBS FRACS FACC FACS FCSANZ

Prof Richmond Jeremy, MB BS PhD, FRACP, FAHA, FESC, FCSANZ, GAICD

Ms Michelle Sloane, BA MA MBA, Company Secretary

Ms Joanne Wade, BEc, LLB





OUR STAFF

From left to right; **Ms Lisa Turner** Clinical Trials Nurse, **Prof Paul Bannon** Chair, **Ms Lorna Beattie** Clinical Trials Nurse, **Ms Maureen Winn** Research Manager, **Ms Catherine Rush** Engagement Manager, **Ms Michelle Sloane** Company Secretary, **Ms Sue Moore** Administration and Events Manager

OUR VISION

Our vision is to improve the outcomes and enhance the lives of those patients undergoing heart and lung surgery.

OUR MISSION

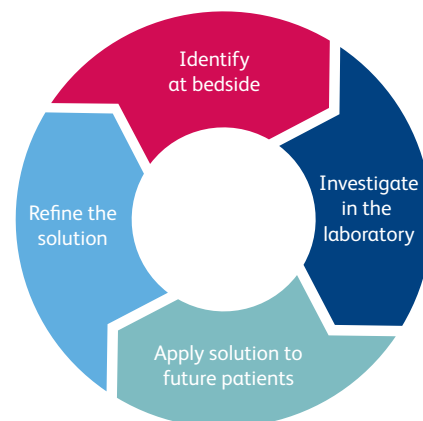
The Baird Institute's mission is to foster research and apply science to improve the outcomes for patients facing heart or lung surgery. The money we raise funds research that directly improves the surgical techniques associated with heart and lung surgery. Improvements can include less intrusive procedures as well as techniques that improve survival rates.

Through our commitment to ongoing research and the application of scientific breakthroughs in technology, we can directly impact the quality of life for patients, post-surgery and save lives that may otherwise have been lost.

Founded on the principal that academic surgeons produce better outcomes, The Baird Institute prides itself on continued investment in research and training; enabling it to remain at the forefront of innovation, surgical robotics and revolutionary industry technology.

OUR AIMS

- To Improve Patient Outcomes
- To Innovate
- To Conduct Research
- To Make Advances in Surgical Technology
- To Provide Ongoing Training and Development



EDUCATION & TRAINING PROJECTS

Heart and Lung Surgery Nurses Education Conference

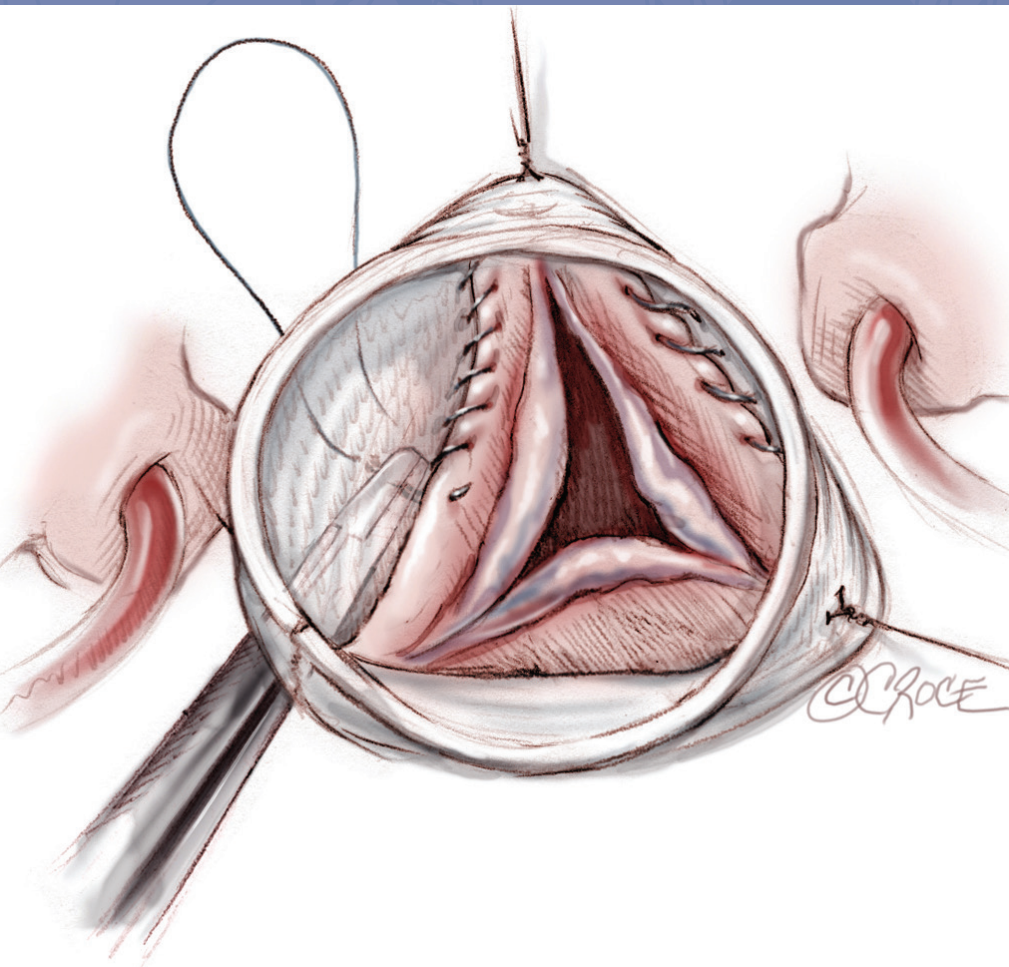
What makes a successful education conference? This question occupied us during months of planning prior to The Baird Institute's 2nd Nurses Education Conference, held on 15 September, 2018. Obviously, you need speakers who will be dynamic, interesting, entertaining and informative and because The Baird Institute works with surgeons, physicians, academics, nurses and allied health professionals within the tertiary setting, we were able to invite speakers of the highest calibre to be our drawcards for this event. It is so nice to know that these speakers hold us in high regard and gave up their time to prepare and present to nurses on a rare day off. In fact, some of our speakers managed to deliver their presentations and return to a busy clinical workload.

We organised practical afternoon workshops that would appeal to the development of skills and knowledge for nurses working in intensive care, perioperative and coronary care units and cardiac catheterisation labs. It was such a thrill to hear the buzz of conversation and energy during workshop changeovers, as people spoke about the facilitators and the concepts learnt for emergency cardiac life support, management of chest drainage systems, chest x-ray and pacing interpretation workshops and heart and valve anatomy classes using a wet lab and real hearts (bovine). Again, our facilitators travelled to us on the Saturday, giving up their time and most importantly, sharing their expertise and insights to those present.

What made the day so great? Clinicians and facilitators sharing their knowledge and skills to ensure that patients needing heart and lung surgery, have the best care based on research and ensuring that patients are at the centre of our health care.



RESEARCH UPDATE



Aortic Aneurysm and Vascular Modelling Research

People are sometimes born with an underdeveloped heart valve. A new study has been designed to investigate what role the disturbed blood flow through this valve may have on the development of aortic aneurysms. Aneurysms are bulges in the blood vessel wall that create an area of weakness. The weakened area can result in tearing of the blood vessel layers and inadvertent blood flow between these layers (dissection), or catastrophic rupture of the vessel may occur. Investigating why bicuspid valves

lead to aneurysm formation, commenced in 2019 at the Charles Perkins Centre. Additional studies are being undertaken to develop a mathematical model to predict aortic aneurysm enlargement and rupture; and Virtual Reality work with Vantari continues to develop simulation for perfecting surgical skills to manage aortic aneurysm dissection. In addition to this work we continue to use synthetic biomaterials to mimic blood vessels used in cardiac surgery and there is further research being conducted on the effects of blood clotting when using the heart-lung machine.

Structural Heart Program

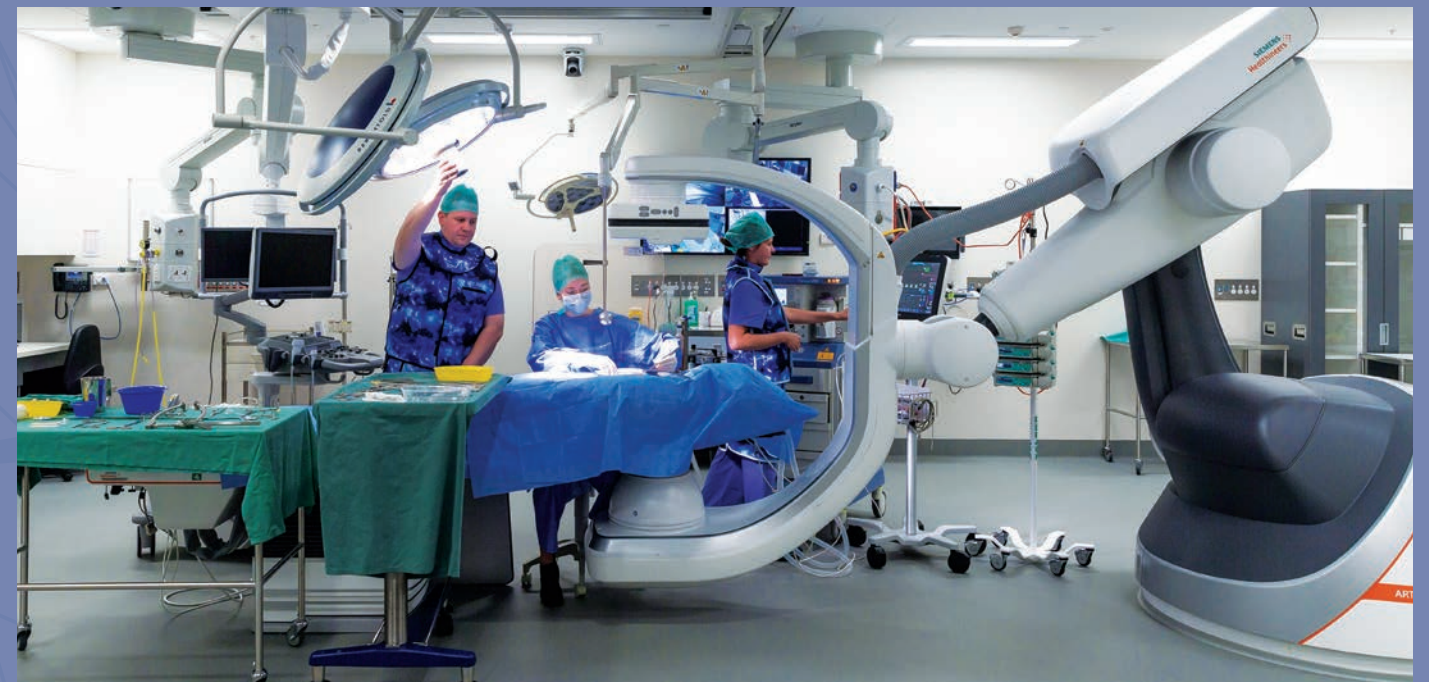
With the “Structural Heart” program we are looking at better ways to implant valves with less risk and less morbidity. The program continues to contribute to data collection and clinical outcomes work. Importantly we are working in the hybrid theatre at Charles Perkins Centre looking at what we term the kinematics of valve function, in particular looking at percutaneous mitral valve replacement surgery and how it affects overall cardiac function in the perioperative period.

Innovative Surgical Techniques and Devices

Studies are investigating coronary artery bypass grafting, and other forms of cardiac surgery, which may be associated with silent brain injury (SBI). Using MRI studies, neuronal connectivity is being explored to better understand and investigate brain injury that is not immediately evident and is sub-clinical in nature. Both on-pump (using cardio-pulmonary bypass oxygenation) and off-pump cardiac surgery techniques will be included in the study design. For those patients who require valve surgery, percutaneous and open techniques will be compared.

Minimally-Invasive and Robotic Surgery Research

We are currently looking at the best ways to utilise the Robotic Surgical Program for advanced skill development with trainee surgeons. In addition, we have commenced using the sophisticated robotic device, called the Da Vinci Robot, for certain thoracic procedures, which gives the surgeon access inside the chest cavity through tiny incisions and provides improved visualisation, compared to surgery performed through an open-chest incision. Robotic thoracic surgery provides faster recovery and return to normal activities for patients including short-



er hospital stay, less pain, reduced scarring and minimal blood loss. “What we always do is try to work out some way of doing things better,” says Professor Bannon. “The surgical paradigm right now is minimal invasiveness. Robots are already helping us do that.”

Hybrid Theatre Research Work

Research began in 2018 in the new Hybrid Theatre in the Charles Perkins Centre with work on novel mitral valve surgical approaches - this work will be leading the world in this area. The Hybrid Theatre team are constantly updating their equipment, software and capabilities to support researchers, surgeons and clinicians with state-of-the-art technology that will become health care of the future. In addition, The Baird Institute is working closely with the team to develop and provide support for advanced surgical training to trainee surgeons in the cardiothoracic and vascular disciplines.

The Hybrid Theatre represents exactly what Prof. Doug Baird engineered in 1986 with his focus on the highest levels of care, education and research.





Virtual Reality Research

The Baird Institute's collaboration with leading Australian start-up medical technology company, Vantari VR is proceeding with promise. Vantari VR is developing Australia's first surgical planning tool specifically for Aortic Dissection in partnership with Professor Paul Bannon and his team at The Baird Institute. From a technological perspective, the final phase of the build is underway in addition to data gathering efforts, for this particular part of the build, through the ethics structures of our hospital partners. Dr Vijay Paul and Dr Nishanth Krishnananthan (co-founders of Vantari VR) have presented this technology at a number of The Baird Institute events over the last 12 months, showcasing the surgical planning technology possible for aortic dissections.

Clinical Trials

The Cardiovascular Clinical Trials Nurses in the Cardiothoracic Department at Royal Prince Alfred Hospital (RPAH), continue in their busy role of managing the ten cardiothoracic clinical trials and databases and 5 Vascular Surgery Clinical Trials that are supported by The Baird Institute. One of the biggest Cardiothoracic trials we have been involved in, the VISION study (a large international study looking at vascular events in patients having Cardiac surgery), has reached 500 recruited patients and is currently collecting one year follow up data on those patients. The 500 patients recruited at RPAH contributes to the 14,670 recruited internationally.

The TRICS III trial, which compares 2 different blood transfusion strategies in patients having cardiac surgery, recruited 20 patients at RPAH. The 6-month follow up data was

published in the New England Journal of Medicine and presented at the European Cardiology meeting in Munich on 26 September 2018. There were more than 1500 participants at this meeting. In September 2018, our first patient was recruited to the Co-POC trial, a prospective, randomized, double-blind, placebo-controlled study, that will evaluate the efficacy and safety of the medication colchicine in decreasing peri-operative myocardial damage and for the primary prevention of Post Pericardiotomy Syndrome, postoperative effusions, and Post-Operative Atrial Fibrillation. This study will recruit 204 patients at RPAH.

Publications

Please go to our website for our current list of publications - <https://bairdinstitute.org.au/research/our-publications/>

OUR SUPPORTERS

Since its inception, The Baird Institute has been privately funded by bequests left by former patients of the surgeons who are associated with the Institute, corporate funding from our partners and donations received from our supportive group of donors who provide both donations to continue our research and their time in organising fundraising events for The Baird Institute.

Corporate Supporters

Special thanks go to our corporate partners - Medtronic, Baxter, Abbott and Edwards who are providing assistance in the form of educational grants for research scholarships and grants to trainee cardiothoracic surgeons.



Baxter

Medtronic

Philanthropic Supporters

Lin Huddleston Charitable Foundation
Pro Choice Safety Gear – The Bird family





COMMUNITY FUNDRAISERS

We have a wonderful bunch of committed people who support us in our endeavours to raise money for life saving, heart and lung research. As we receive no government funding, we rely solely on the donations of our supporters, both private and corporate, as well as our community fundraisers. These community fundraisers have together raised in excess of \$250,000 for The Baird Institute, through their various fundraising activities and events: from participation in fun runs, variety shows, country dances, cocktail parties and dinners to selling items they have personally made.

The help of these volunteers means that we keep fundraising costs to a minimum and the money raised can go directly towards supporting research, training and saving more lives. This has made an enormous difference to the work we do and has enabled us to improve not only the survival rates of patients facing heart and lung surgery but also the care of these patients pre and post-surgery.



FINANCIAL SUMMARY

Profit & Loss Statement

Revenues

	2018-2019	2017-2018
Research and Training	\$272,705	\$254,550
Donations and Fundraising	\$224,797	\$204,545
Miscellaneous	\$ 20,992	\$ 569
Interest	\$ 8,493	\$ 8,837

TOTAL	\$526,987	\$468,501
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Expenses

Employee benefits	\$249,657	\$281,405
Research consumables/equipment	\$ 71,944	\$206,561
Office expenses	\$ 64,667	\$ 78,465
Depreciation	\$ 1,100	\$ 1,744
Miscellaneous	\$ 71,216	\$ 67,428

TOTAL	\$458,584	\$635,603
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Surplus/Deficit for the period	\$68,403	(\$167,102)
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Balance Sheet

Assets

	30/6/2019	30/6/2018
Cash and cash equivalents incl. Term Deposits	\$611,680	\$566,832
Trade and other receivables	\$ 10,579	\$ 11,779
Other current assets	\$ 1,786	\$ 2,569
Property, plant and equipment	\$ 1,349	\$ 2,449
Other non-current assets	\$ 8,720	\$ 10,075

TOTAL	\$634,114	\$593,704
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Liabilities

Trade and other payables	\$ 8,445	\$ 41,128
Employee entitlements	\$ 4,690	\$ -
Other liabilities	\$ 5,600	\$ 5,600

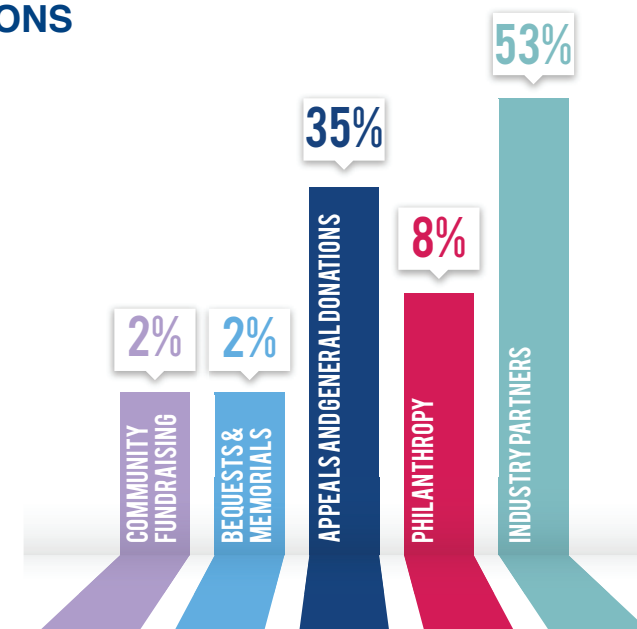
TOTAL	\$ 18,735	\$ 46,728
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Net Assets	\$615,379	\$546,976
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The figures above have been taken from the audited financial statements of The Baird Institute for the relevant periods.

ORIGIN OF DONATIONS

2018-2019





Professor Douglas Baird AM:
A Truly Great Australian.
1940 - 1995

For a full list of all research publications of
The Baird Institute, please go to our website
<https://bairdinstitute.org.au/research/our-publications/>

WE NEED YOUR HELP

Please visit the
following webpage
to see how you can
help our cause

<https://bairdinstitute.org.au/you-can-help/>



 www.bairdinstitute.org.au

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