



# heart TO HEART

 THE BAIRD  
INSTITUTE  
Applied heart & lung surgical research

DECEMBER 2018

## Greetings

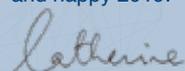
I am so pleased to announce that The Honourable Michael Kirby AC CMG has agreed to become The Baird Institute's 2nd Patron.

When he retired from the High Court of Australia on 2 February 2009, Michael Kirby was Australia's longest serving judge, having worked there since 1996. He continues to undertake many international activities for the United Nations, the Commonwealth Secretariat, the World Health Organisation and UNESCO. Michael Kirby was Chancellor of Macquarie University from 1984 to 1993 and has been appointed Honorary Visiting Professor by 12 universities. He participates regularly in local and international conferences and meetings and has served on many international committees for the UN, the Commonwealth of Nations and on the UN Secretary-General's High Level Panel on Access to Essential Medicines (2015-16). He is regularly engaged in international arbitrations, domestic mediations and teaching law.

This year has flown by once again. Our Heart and Lung Surgery Nurses Education Conference in September this year was a great success. Our speakers and workshop presenters were of the highest calibre; captivating the participants with advances in technology, patient care, and new ways of operating; all underpinned by research.

Research has begun in the new Hybrid Theatre in the Charles Perkins Centre with current work being carried out on novel mitral valve surgical approaches. A general research update can be found within this newsletter. Finally please consider joining our Facebook Heart and Lung patient and family support group, "Heart to Heart". Details on how to join are on page 5 of this newsletter.

On behalf of the team at The Baird Institute, we would like to extend our thanks to all our supporters for their continuing trust and support. Best wishes to you and your families for the holiday season and for a very healthy and happy 2019.

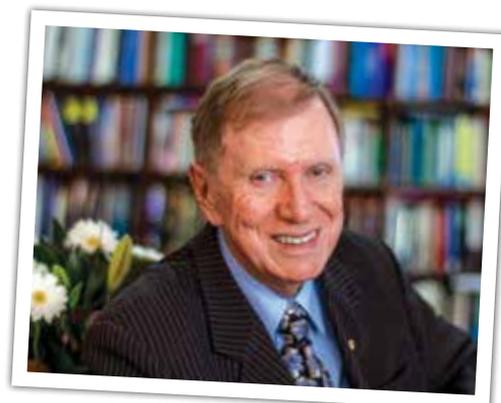


Catherine Rush  
Engagement Manager, The Baird Institute

## Letter from The Hon. Michael Kirby AC CMG

I am proud to have 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. We became close friends, although that required him to overlook the fact that I was a budding lawyer. 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 RPA.

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. Her heart was still beating strongly when she eventually died from other causes. Our 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 RPA and The Baird Institute.

Subsequently, I myself came under the care of Professor Paul Bannon, who succeeded to Doug Baird's mantle and now leads The Baird Institute following Doug Baird's early death. He 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 RPA. 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.





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## Connected Care

### 2018 – 2ND 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 this year. 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 then 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.







## DOCTORAL WORK BY *Dr Vikrant Dhurandhar PhD*

My thesis provides a better understanding of complex and high-risk cardiac surgery in Australia. The research in this dissertation has shown the advantages and disadvantages of large multi-institutional databases, such as the ANZSCTS database, as a source of robust evidence. It has also shed light on the importance and shortcomings of current risk stratification systems and described their role in cardiac surgery for patient selection and counselling.

Through this dissertation we now have a better insight into the feasibility and appropriateness of cardiac surgery in the elderly and high-risk Australian population. Determining which surgical technique will provide maximum benefit, be it coronary revascularization with or without cardiopulmonary bypass, mitral valve surgery for mitral regurgitation, aortic valve surgery for aortic stenosis, or aortic root surgery, is dependent on multiple patient factors and pathology.

Thus, complex cardiac surgery in the elderly and high risk, in its current form, while completely feasible, needs to be individualized on a case by case basis to warrant reproducible safe outcomes and further work should focus on randomized studies comparing each technique in the elderly and high-risk populations, and development of risk scores with improved accuracy of prediction.

I would like to thank Prof Bannon for this amazing “once in a lifetime” opportunity. I would also like to thank Prof Vallely (my co supervisor) and everyone at The Baird Institute for their support and assistance in helping me achieve this huge personal milestone.

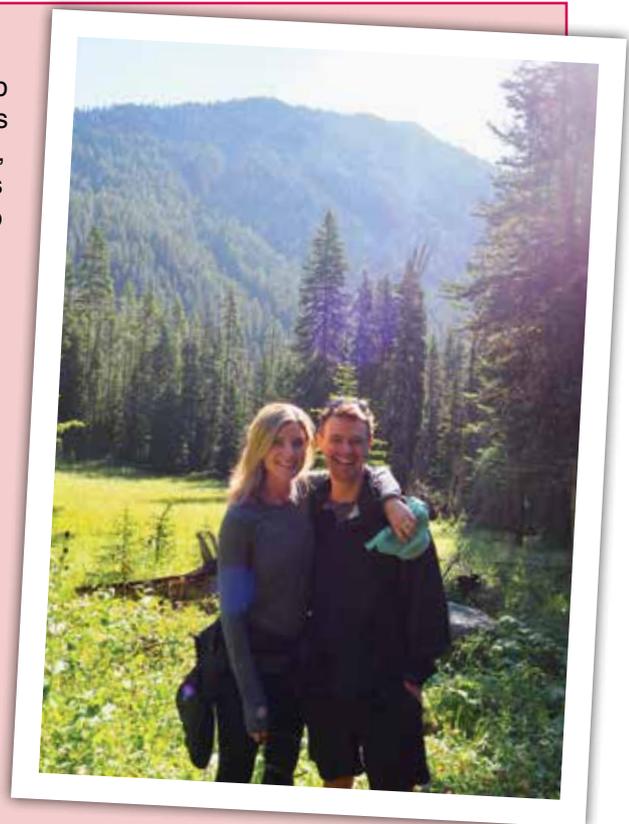
## UPDATE FROM DR JAMES EDELMAN

James Edelman received the inaugural Medtronic Heart Fellowship from The Baird Institute in 2010 which enabled him to complete his doctorate at The University of Sydney studying the Inflammation, Tissue injury and Thrombosis in Off-pump Coronary Artery Bypass Grafting. James is currently completing a fellowship in both Toronto and Washington DC. He provides us with an update below:

Brooke and I have moved to Toronto where I am completing a Fellowship in Complex Valve Surgery at Toronto General Hospital (TGH). We are loving the city – it has a great bar and restaurant scene and feels a little like Melbourne. Within two hours’ drive are the Muskoka Lakes – a collection of 1600 lakes surrounded by forest and idyllic cottages. We’ve enjoyed weekends canoeing, hiking and braving the cool fresh water! We were nervous about the winter, but the city is very well set up for the cold (down to -20 degrees celcius!), with underground tunnels around most of the city meaning a good coat is only necessary to survive the short path from home to the station.

The work at TGH has been great. The strengths of the Unit are in aortic root repair (the ‘David’ procedure), aortic surgery and mitral valve repair. Drs Tirone David and Chris Feindel, who devised the aortic root re-implantation or ‘David’ procedure, have been great to work with and are each endless encyclopaedias of cardiac surgery. I’ve also had the opportunity to do some research and use skills learned during my PhD with The Baird Insitute. Toronto has been an ideal base to visit the large American Cardiac Society Scientific meetings.

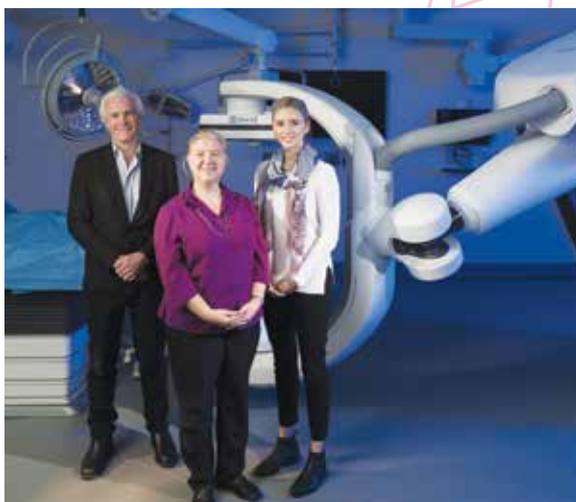
In July I am heading to Washington DC (Georgetown University) to do a fellowship in transcatheter and minimally invasive valve surgery with Dr Vinod Thourani. Dr Thourani is a lead author of many of the STS database and international transcatheter trials; here I hope to enhance some of the research skills learned at The Baird Institute.





## THE TEAM AT THE BAIRD INSTITUTE

From L to R: Lisa Turner (Clinical Trials), Paul Bannon (Chair), Lorna Beattie (Clinical Trials), Maureen Winn (Research Manager), Catherine Rush (Engagement Manager), Michelle Sloane (Company Secretary), Sue Moore (Administration and Events Manager)



## THE HYBRID THEATRE

The Hybrid Theatre & Sydney Imaging team have been working to further develop their capabilities to support world class research at Sydney University since the launch in April this year.

Veronika Tatarinoff, Hybrid Theatre Facility Manager commented: we are working closely with Prof. Paul Bannon to develop and provide support for advanced surgical training to trainee surgeons, in particular in the cardiothoracic and vascular disciplines.

We are about to embark on a Baird Institute funded research project looking at novel mitral valve surgical approaches. This work will be leading the world in this area.

We are constantly updating our equipment, software and capabilities to support care of the future.



## FACEBOOK PATIENT SUPPORT GROUP

*“One of the greatest gifts a person can give another, is support.”*

Heart to Heart is a heart surgery patient support program run by The Baird Institute, providing education and support to patients, families, carers and friends.

The Baird Institute’s mission is to foster research and apply science to improve the outcomes of patients facing heart or lung surgery. This program focuses upon the power of bringing people together, to share their experiences and by so doing, to support one another pre and post-surgery.

Our plan is to formalise this group and have an education and support meeting in Sydney for people who need or have had surgery and for their family, carers and friends. If you would like to join Heart to Heart you can do so by going to the Heart to Heart Facebook page <https://www.facebook.com/groups/hearttoheartnsw/>

## RESEARCH REPORT: THE YEAR IN REVIEW



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. 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 interventions developed. Here is a short update on our current progress.

### 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, will commence 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.

## 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

This research links into the work being conducted with sub-clinical brain injury following cardiac surgery and the best ways to utilise the Robotic Surgical Program for trainees and for advanced skill development. This work will also include lung cancer resection skills.

## CLINICAL TRIALS UPDATE

Lisa and Lorna, the Cardiovascular Clinical Trials Nurses at RPAH continue in their busy role of managing the 10 Cardiothoracic Clinical trials and databases, and 5 Vascular Surgery Clinical Trials, which are supported by The Baird Institute.



One of the biggest Cardiothoracic trials we have participated 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 1 year follow up data on those patients. Our 500 patients recruited at RPAH contributes to the 14,670 recruited internationally.

As we have previously reported, the TRICS III trial, which compares 2 different blood transfusion strategies in patients having cardiac surgery, recruited 20 patients at RPAH. We were pleased to hear that the 6-month follow up data was published in the New England Journal of Medicine which was a simultaneous publication with the presentation by David Mazer at the European Cardiology meeting in Munich on 26 September. He said the audience was “only” around 1500+ and there was plenty of interest and questions.

Also, on the 26 September 2018 we recruited our first patient to the Co-POC trial. This is 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 in 204 patients at Royal Prince Alfred Hospital.

## 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, however we would particularly like to thank our principal supporters.

- The Lin Huddleston Charitable Foundation
- Robert and Antonietta Allotta





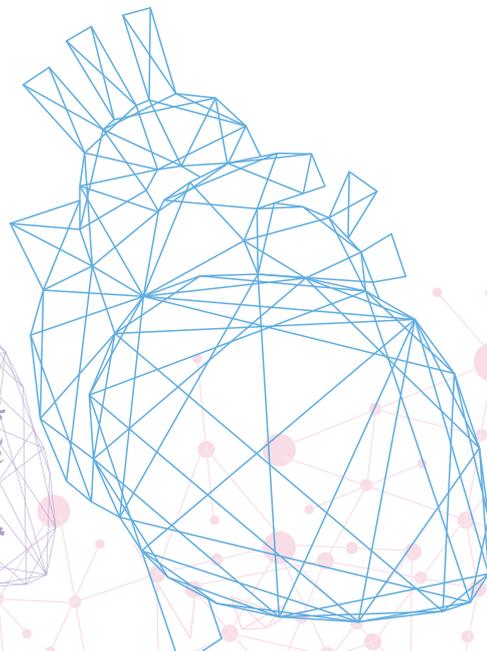
· SEASON'S ·  
*Greetings*

*Season's greetings from all the surgeons, staff and researchers at The Baird Institute. We wish you all the very best for the holiday season.*

For a full list of all research publications of The Baird Institute, please go to our website [www.bairdinstitute.org.au/our-publications/](http://www.bairdinstitute.org.au/our-publications/)

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