THE PRINCE CHARLES HOSPITAL

RESEARCH REPORT

2018

“The research work that they do here is just phenomenal. Who knew that you could put a mechanical pump inside a heart and that be the left side of your heart? I think the people here, everyone is really passionate about saving lives. And they do. They save lots of lives.”

BEC CRAVEN, HEART TRANSPLANT RECIPIENT AT THE PRINCE CHARLES HOSPITAL

Bec Craven
Heart Transplant Recipient at TPCH

The Common Good is a movement of everyday Australians investing in medical researchers to make the life-changing discoveries critical for a healthy future. We collaborate with dedicated researchers empowering them to target the chronic diseases that will affect 90% of us. Together we are People Powering Medical Discoveries... for The Common Good.

THE COMMON GOOD
PEOPLE POWERING MEDICAL DISCOVERIES

CONTENTS

FOREWORD

It speaks a lot about the character of people who want to challenge the norm, to not accept things just as they are, in a quest to find ways to help others live longer and healthier lives.

Often those who want to explore new ways to improve health outcomes requires a higher level of personal sacrifice than perhaps is understood by the broader community. By having the academic qualifications beyond what most would even attempt gives the impression that they will enjoy a life full of rewards, and most likely enjoy the financial returns that make their many years at university worthwhile.

Yet this is not reality. It is a tough road, filled with disappointments, long hours, tedious tasks, little or no job security, low pay and little recognition. For many researchers this journey is short-lived and they are lost to other professions or other countries.

For those who make the sacrifice and are driven for success we are so grateful.

In this year's report you will see some remarkable achievements, the work that is being tackled, the funding success, the publications. What they don't express are the trials and tribulations that come with this. You don't see the reports of those who have been unable to get ongoing funding and so fall by the way side.

This is a short compilation that gives a high overview of the activities and performance – from the publishing of papers in prestigious journals, the milestones of many of the team projects, the breadth of medical research backgrounds involved and the partners and funders who are collaborating on these lifesaving journeys.

We acknowledge the humanitarian effort of the women and men who have dedicated themselves to science or the medical professionals who are going above and beyond to find answers. The determination that goes behind every project, the never give up attitude and above all the eternal optimism is in itself inspiring – even though their own future may be uncertain.

We want to congratulate the institutions who are backing these inspirational people and most importantly to the businesses and individuals who are getting behind them. Public donations now represent the major investment towards the annual research investment here, with The Prince Charles Hospital Foundation representing that largest contributor through the campaign The Common Good. It is this groundswell that is beginning to give real hope of sustaining the work. They are providing the opportunities of new ideas to be explored but even more importantly for programs that are showing promise to be protected.

To you the reader of this document we want to thank you. You are most likely someone who 'gets it'. You are a researcher, a supporter or a collaborator. We may be preaching to the converted and if that is the case we want you to know that you have our heartfelt thanks for what you are doing. If you are not yet involved we encourage you to join us. Every new supporter is making a significant impact, adding to every hour, to every day, advancing ever closer to the delivery of new detections, treatments and rehabilitation that will improve life.

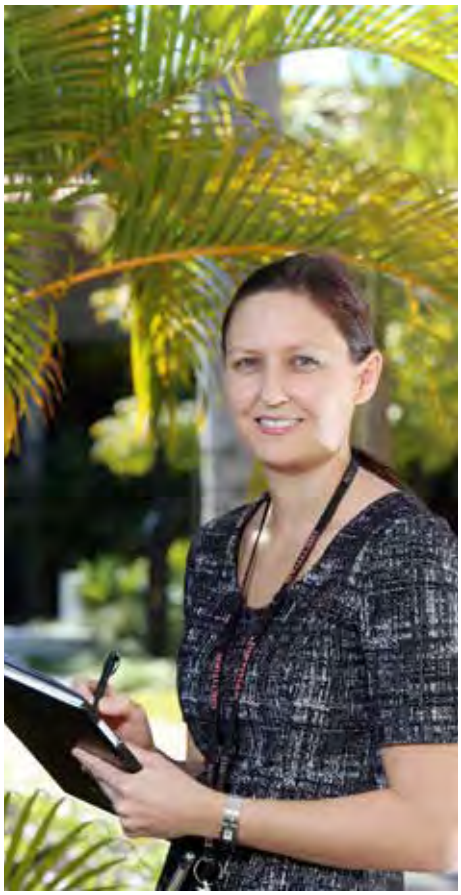
We can all be part of The Common Good.

Dr Eamonn Eeles - Chair
TPCH Research Council

Anthony Williams - Executive Director
The Prince Charles Hospital

Bernard Curran - Chair
The Prince Charles Hospital Foundation

Michael Hornby - CEO
The Prince Charles Hospital Foundation



All dedicating themselves to the lives of others – so that we may all live healthier for longer

PHDS AWARDED IN 2017

Dr Annette Dent
The role of exhaled breath analysis in the diagnosis and monitoring of lung diseases

Dr Kay Ramsey
Diversity of environmental and clinical pseudomonas aeruginosa isolates

Dr Petra Lawrence
A randomised controlled trial of a psychosocial brief intervention for emergency department attendees with moderate psychological stress

Dr Sandra Miles
Sensory and motor interventions for very early school-age children: a cluster pragmatic randomised controlled trial examining effect on development, behaviour and academic learning outcomes.

Dr Jo Pauls
Passive control of biventricular assist devices

Dr Anna-Liisa Sutt
Towards an improved understanding of the effect of a speaking valve on lung volumesand communication in the critically ill tracheostomised patient

STUDENTS

16 HONS

25 MASTERS

57 PHDS

PUBLICATIONS

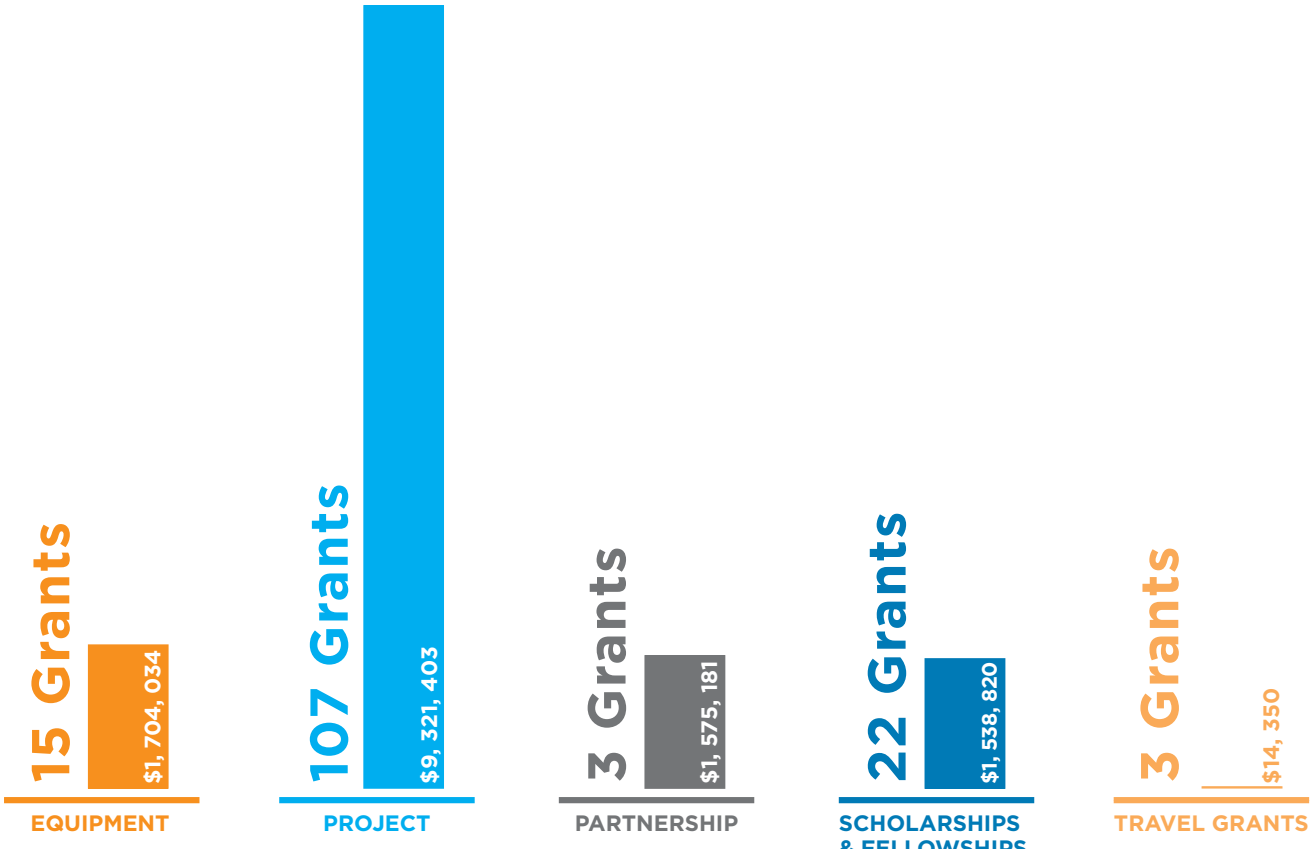
195

+

1 TEXTBOOK

150 GRANTS HOSPITAL WIDE

$13 MILLION DISTRIBUTED TO RESEARCH HOSPITAL WIDE



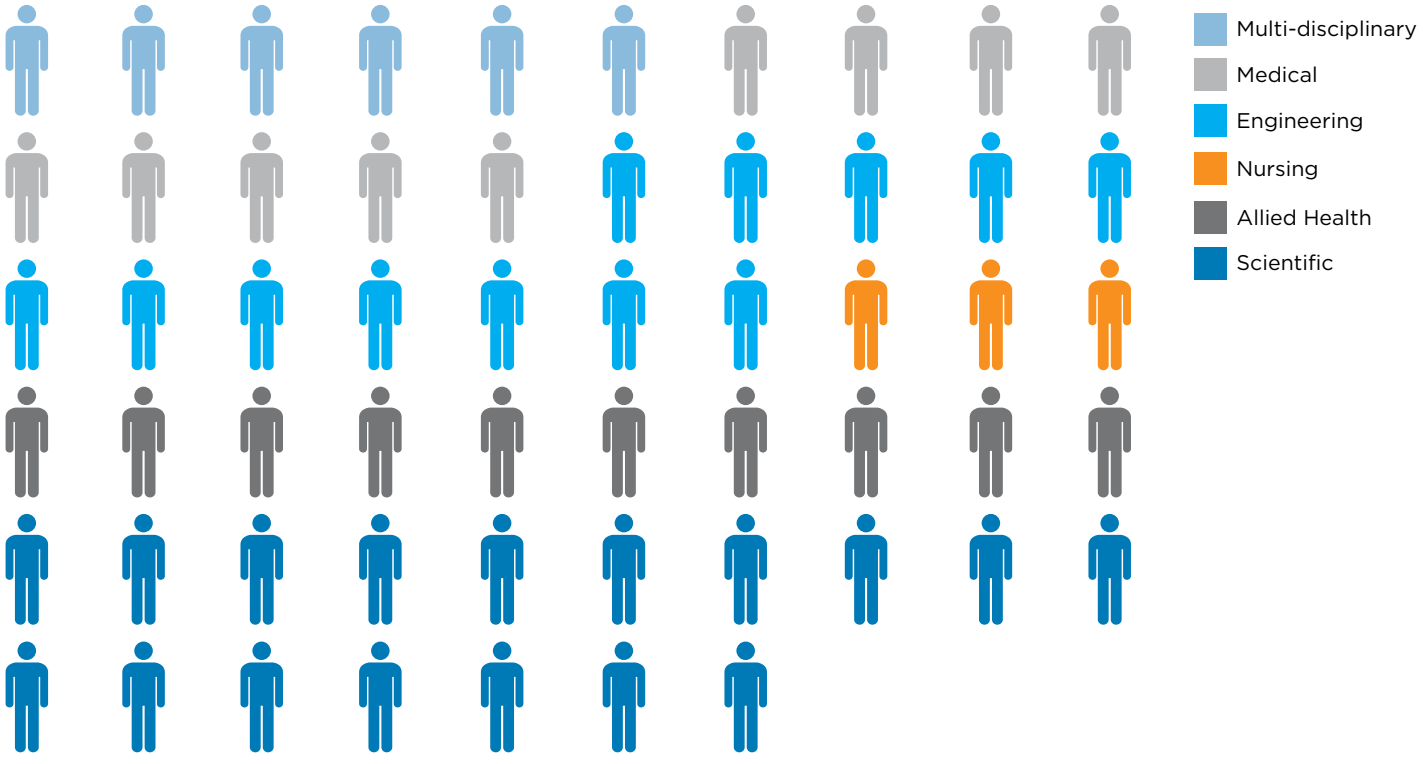
THE PRINCE CHARLES HOSPITAL GRANTS

THE PRINCE CHARLES HOSPITAL FOUNDATION SUPPORTED RESEARCH

THE PRINCE CHARLES HOSPITAL FOUNDATION PEER-REVIEWED GRANT PROJECTS

- Emerging Researcher Grants — 7 Grants
- PhD Scholarships — 6 Grants
- Equipment Grants — 13 Grants
- Research Fellowships — 5 Grants
- Innovation and Capacity Grants — 1 Grant
- Team Grants — 6 Grants
- New Investigator Grants — 23 Grants

THE PRINCE CHARLES HOSPITAL FOUNDATION RESEARCHES



61 GRANTS AWARDED BY THE FOUNDATION

$4.7 MILLION

DISTRIBUTED TO RESEARCH BY THE FOUNDATION IN 2017

THE PRINCE CHARLES HOSPITAL FOUNDATION GRANT FUNDING

- **Team Grants** $3 million committed
- **Research Fellowships** $1.5 million committed
- **PhD Scholarships** $293,520
- **New Investigator Grants** $222,512
- **Innovation & Capacity Grants** $20,000
- **Equipment Grants** $239,622
- **Emerging Researcher Grants** $173,512
- **Sustainable Research Positions** $600,000
- **Partner Projects** $636,566
- **Research Support** $60,906

KEY AWARDS

Adult Cystic Fibrosis Centre Research Team
Highly commended in the complex health challenges award category at the Metro North Research Excellence Awards 2017

CURE-IT Program
Queensland Health Award for Excellence for the Cure-It Program: Curing Hepatitis C

Prof Scott Bell
Finalist, Infectious Diseases Category, Australian Museum Eureka Awards

TEAM GASTRO
Finalist - Queensland Health Award for Excellence: Pursuit of Excellence
Highly Recommended - Staff Excellence Award: Excellence in Performance

Prof Scott Bell
Honouring Individual Excellence Award, The Prince Charles Hospital

Dr S Macdonald
Best Paper by a Fellow, Annual Scientific Meeting Australasian College for Emergency Medicine

Michelle Wood
Best Abstract, Cystic Fibrosis Special Interest Group, TSANZ Conference

Donalee O'Brien
Received a TPCH Nursing Award in Recognition of Research

Michelle Wood
Best Paper, Australasian Cystic Fibrosis Conference

Dr Jack Bell
Rising Star of Research – TPCH

Dr Shaun Gregory
Finalist and Highly Commended for the Discovery and Innovation Research Award Category of the Metro North Research Excellence Awards 2017

Critical Care Research Group
Awarded UQ Faculty of Medicine Innovator Award For 'The Open Heart' Project. Team includes Prof John Fraser, Prof Geoff Tansley, Dr Jo Pauls, Dr Shaun Gregory and Andrew Stephens

Prof Ian Yang
Metro North Australia Day Award for excellence in educating and nurturing queensland's next generation of medical staff to provide high quality health care in a challenging world – Awarded by Metro North Hospital and Health Service

Paul Jarrett
Winner of The Prince Charles Hospital's 'Charlie's Week' - New Investigator Award

Osteoarthritis Research Group
Winner of the discovery and innovation award at the metro north research excellence awards 2017

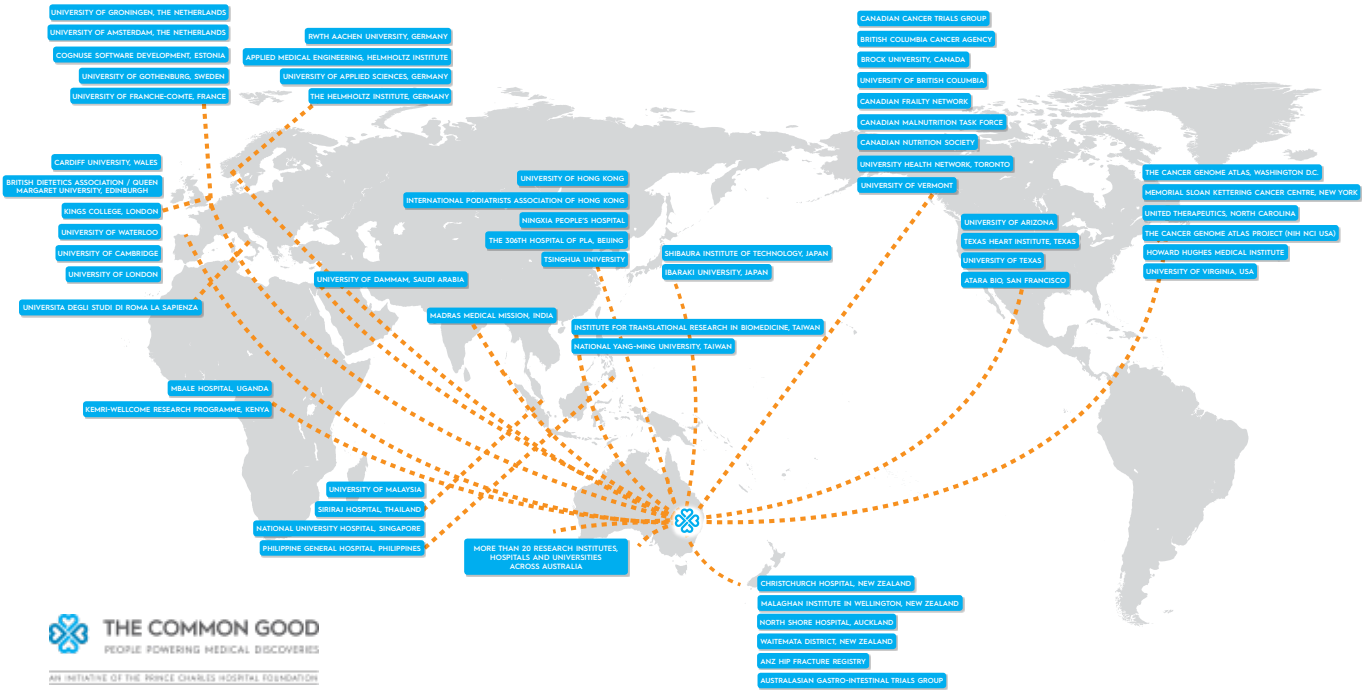
Jonathan Fanning
Winner of the prince charles hospital's 'charlie's week' - best published paper award

Dr Emily Gordon
Best Oral Presentation, ANZSGM

Eleonore Bolle
Best Oral Presentation- AP-ELSO Conference

GLOBAL SIGNIFICANCE.
NATIONAL COLLABORATIONS.
ONE PURPOSE.

MAKE THE WORLD BETTER, ONE DISCOVERY AT A TIME.



GLOBAL SIGNIFICANCE. NATIONAL COLLABORATIONS. ONE PURPOSE.

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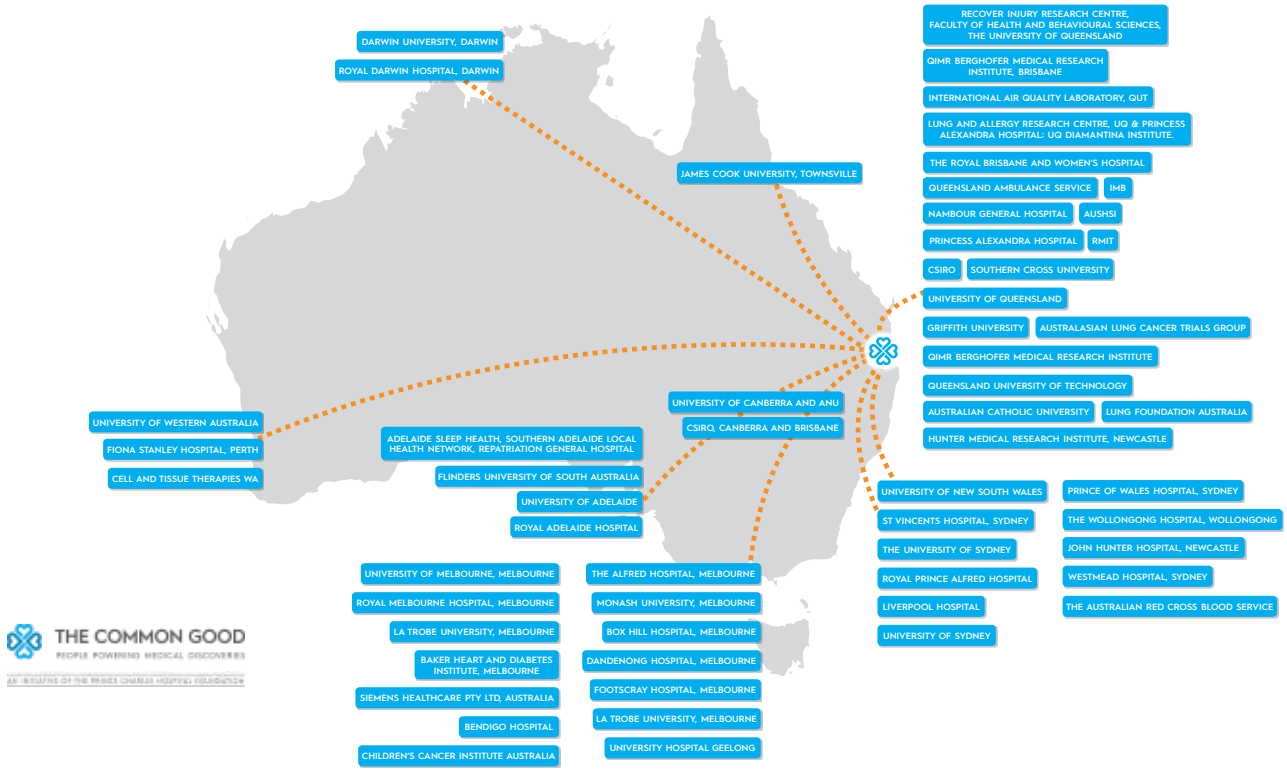

HEAD OF RESEARCH GROUP

Dr Frances Kinnear

KEY MEMBERS OF RESEARCH GROUP

A/Prof Colin Myers
A/Prof Wayne Hazell
Dr Neil Grant
Dr Alastair Newton
Dr Peter Rizzo
Dr Kim Hansen
Dr Polash Adhikari
Dr Hahn Pham
Dr Rajeev Jarugula
Dr Gavin Fincher
Dr Waruna D'Alwis
Dr Sue Hobbins
Dr David Wood
Dr Rose Fahy
Prof Paul Fulbrook
Dr Peter Lazarrini
Carol Horbury
Petra Lawrence
Sarah Hazelwood
James Fleming
Amanda Smith
Tanya Mountford
Jeanette Probyn
Julie Craig
Andrea Meade
Samantha Giess
Virginia Blakely
Louise Spooner-Jackson
Rikki McTavish

Dr Frances Kinnear

ADULTS', CHILDREN'S AND EMERGENCY RESEARCH GROUP

This research group is focused on the delivery and continuous improvement of emergency and children's services with a focus on harm minimisation, innovation and translational research outcomes. Our over-arching philosophy is that research is an integral part of delivering quality care in the field of emergency medicine and it is an essential part of our mission to deliver better health outcomes for all.

Emergency medicine research at TPCH is a relatively new, rapidly developing specialty and as a profession. We are continually investigating how we practice, ensuring the delivery of high quality evidence-based care, while exploring new ways of addressing the diagnostic and therapeutic challenges faced by emergency clinicians.

As a high-risk environment, our research priorities are focused on improvements to patient management and flow such as driving improvements to diagnostic procedures, treatment delivery and staff expertise. Patient safety is also a key priority as part of our harm minimisation ethos, along with research that improves the safety and well-being of our staff.

Although emergency departments are a particularly challenging environment for research due to the unplanned nature of emergency events, we have a unique position on the frontline of patient care. It is our responsibility to understand how the delivery of emergency care influences the entire patient journey and to accept that if appropriate care is not initiated by us, this can make later medical interventions less successful or even futile.

We need to ensure our research positively influences the wide spectrum of patient care and this is only made possible by cooperation across traditional medical silos. With successful collaboration comes new perspectives and a greater recognition that translational emergency care research will lead to new insights across a range of medical disciplines.

HIGHLIGHTS

In 2017, the team continued to increase its research capacity with successful ongoing studies and new projects. As a relatively new research group, the most gratifying highlight was the continued development of a culture that positions research as part of the core business of delivering high quality emergency care.

With respect to individual projects, we were excited that our ongoing primary spontaneous pneumothorax study went into analysis phase in 2017. Results have shown promise and we expect them to shed interesting light on the current international guidelines for treating this condition.

Secondly, a nation-wide pilot trial on the management of sepsis revealed interesting variations in treatment practice across Australia and the results are likely to provide improved evidence-based guidance on how to manage this condition. Additionally, our body of work on sepsis is now being explored as a basis for the development of Australia-wide clinical research in sepsis management; a great achievement for the team.

A study examining the use of lung ultrasounds in patients presenting with shortness of breath has been completed. Preliminary results suggest that this new lung ultrasound technique will help emergency clinicians differentiate between wet and dry lung conditions and help them more quickly and effectively assess patients with shortness of breath.

Lastly in 2017, we continued to grow our research capacity significantly with regards to paediatric care. A key trial which looked at use of high-flow nasal cannula therapy for bronchiolitis in children is very close to informing clinical practice on the use of this relatively new technology.

PRESENTATIONS AND PUBLICATIONS

A trial looking at positivity rates for diagnosis of pulmonary embolism was published in 2017. This publication led to the roll out of improved practice procedures at TPCH for managing this condition. We also published 10 articles during 2017.

AWARDS

The ARISTOS Sepsis Study was awarded Best Paper presented by a Fellow of the Australasian College of Emergency Medicine at its Annual Scientific Meeting (Sydney).

STUDENTS

We supervised 3 PhD students, with Petra Lawrence completing her studies.

RESEARCH COLLABORATIONS

Our collaborators are wide and varied within TPCH. Externally, we undertake research with support from many universities and scientific institutions Australia-wide.


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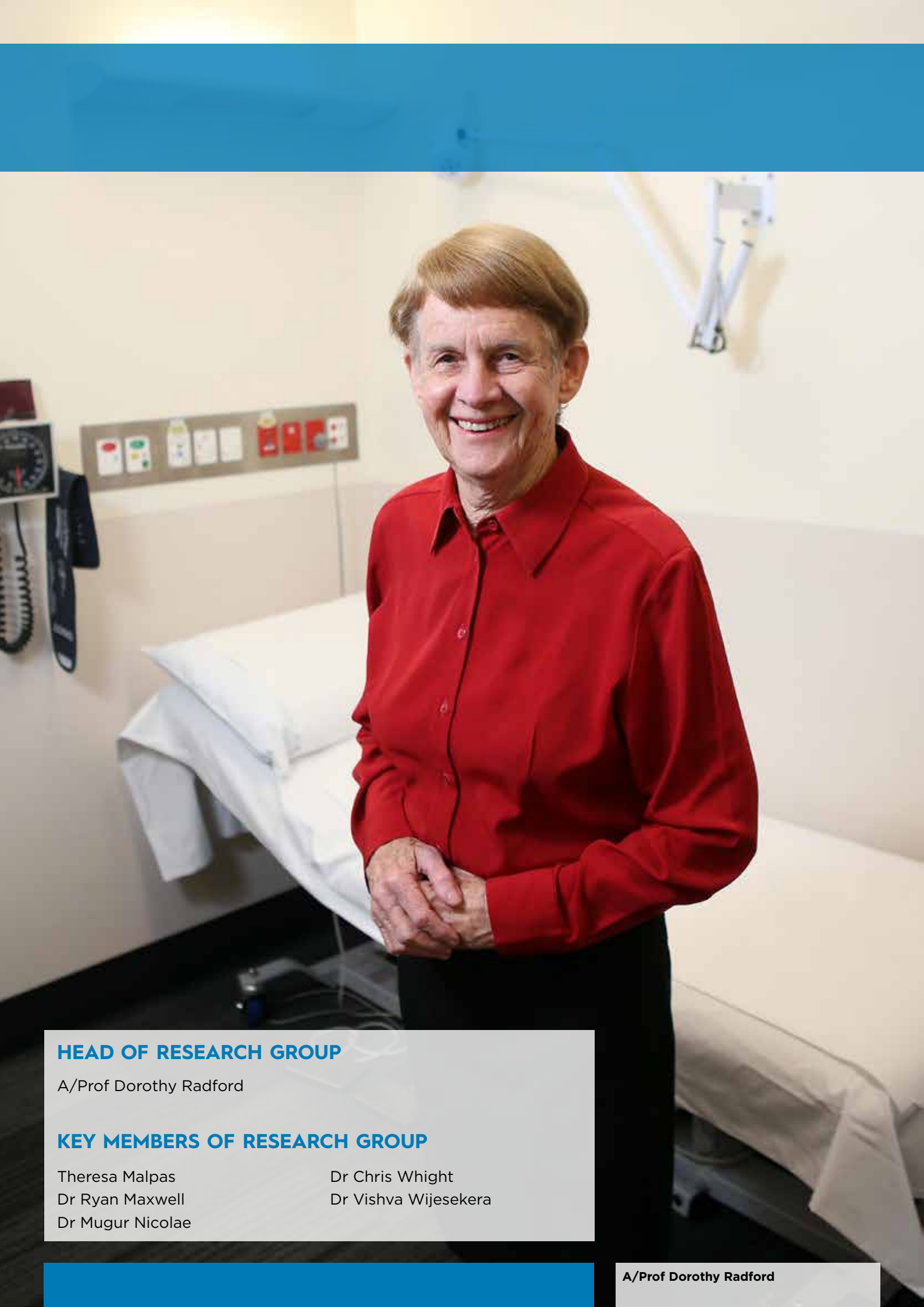
nbulance



HEAD OF RESEARCH GROUP

A/Prof Dorothy Radford

KEY MEMBERS OF RESEARCH GROUP

Theresa Malpas
Dr Ryan Maxwell
Dr Mugur Nicolae
Dr Chris Whight
Dr Vishva Wijesekera

A/Prof Dorothy Radford

ADULT CONGENITAL HEART UNIT

The aim of the Adult Congenital Heart Unit is to ensure the best quality of life for adults living with congenital heart disease. Modern medical advancements mean that children born with congenital heart abnormalities are surviving into adult life in greater numbers than ever before. The adults in our group may have been some of the first to benefit from medical procedures that were not possible a generation ago. This has resulted in a growing research demand; to understand the long-term physical and psychological health complications of surviving congenital heart disease into adulthood.

Unfortunately, the health complications faced by our patient group has a significant impact on their quality of life and well-being in the long-term. Our patients need ongoing monitoring and follow-up of heart pumping function, valve function and cardiac rhythms - and those with challenging physical limitations may need social support to secure employment, cope with stress or with family planning.

As medical advancements in congenital heart diseases continue, childhood survival rates will increase. Our research makes possible the best medical, social and psychological assistance available to this group, but also builds an important evidence base for the long-term effectiveness of rapidly evolving surgical techniques and interventions.

As medical procedures change, our research has an important role in growing understanding how different interventions influence the health of patients in the long-term. For example, we want to understand the influence of surgical variables such as procedure timing or technique, to determine the impact of different drug therapies, or show how patients may benefit from cutting edge non-surgical procedures.

HIGHLIGHTS

Our contribution to The Australian and New Zealand Fontan Registry continued to grant us international recognition in 2017. We have access to the world's largest cohort of patients who have undergone this procedure and contribute vital information for analysis. Every year, we are proud to invest in more research that supports patients experiencing complications from Fontan operations. Although the procedure has improved over the years, there are still many health issues that can be helped by new research. To share our knowledge, the ANZ Fontan Group held an education day for patients and relatives in September 2017 followed by a day of meetings of our steering committee and the partnership group.

In 2017, we were also excited to launch a new project addressing Eisenmenger syndrome, a disease characterised by holes in the heart, associated with high pressure in the lung arteries. We looked at how pulmonary vasodilator drugs may be used to manage this condition and the results indicated a significant survival benefit. Another study undertaken in 2017 reviewed the long-term outcomes for patients who had undergone a surgical repair of a complex heart malformation with the goal of assessing the best timing for this surgery.

We are also making sure our research outcomes help us to understand the long-term effectiveness of non-surgical treatment options. As researchers, we look to avoid surgery if a less invasive approach can be used effectively. Using this principle, our group commenced a new study on the use of a device that treats narrowed or leaking pulmonary valve issues without the need for open-heart surgery. This device, known as a Melody valve, has shown to be effective in initial findings.

PRESENTATIONS AND PUBLICATIONS

In 2017, our group contributed to 11 publications.

RESEARCH COLLABORATIONS

In 2017, we were involved with a variety of co-operative studies with other Australian Adult Congenital Heart Units. The research undertaken by the ANZ Fontan Group is made possible by ongoing support received from many hospitals and research units across Australia and New Zealand.

HEAD OF RESEARCH GROUP

A/Prof David Reid

KEY MEMBERS OF RESEARCH GROUP

Dr Daniel Smith

Prof Scott Bell

A/Prof David Reid

THE ADULT CYSTIC FIBROSIS CENTRE

The Adult Cystic Fibrosis Centre is a collaboration of The Prince Charles Hospital and QIMR-Berghofer Medical Research Institute. We comprise of three research sub-groups; the DeBugCF Research Program, the Lung Bacteria Group and the Lung Inflammation and Infection Group representing the largest cystic fibrosis (CF) research centre in the southern hemisphere. Our collective goal is to improve global understanding of cystic fibrosis and support those with the condition to live longer, healthier lives.

A critical issue for our patients is the threat of immunity and infection; this is the biggest cause of mortality and morbidity in CF. A major component of our research is looking at bacterial infection in our patients to understand which factors allow different pathogens to survive in the CF lung. As a world leader in CF research, our team has an international reputation for delivering groundbreaking results in this field.

With some of the most state-of-the-art research facilities available to us, we have the capacity to invest in multifaceted research that addresses the wide range of medical and psycho-social impacts of living with CF. Projects looking at drug adherence, the impact of anxiety and depression, antibiotic dosing, CF-related diabetes, exercise capacity and the impact of parenthood on CF patients represent the diversity and magnitude of our research capability.

Influential research outcomes are only made possible by a multi-disciplinary approach that involves clinical researchers from all areas including dietetics, physiotherapy, pharmacy, nursing, social work and psychology. We also work with molecular microbiologists, chemists, epidemiologists and facilitate multiple national and international collaborations across many fields to achieve our goals.

HIGHLIGHTS

In 2017, we continued our significant contribution to cutting edge CF research with our participation in important international and national collaborations across 10 projects and 27 publications.

The DeBugCF program continues to position us as a world leading resource as it has done for many years. With one of the largest biobanks in the world containing airway samples, immune cells and DNA samples, this resource allows the research team to better understand the causes of disease in CF and supports international research endeavors, including a new project with Canadian and European teams looking at novel biomarkers.

Our leading work into cross infection also garnered international acclaim and worldwide impact in 2017. Our examination of cough aerosols and risks of transmission of bacteria between patients has demonstrated that the wearing of surgical masks reduces the spread of potentially infectious cough aerosols in people with CF. Our studies have led to global changes in infection control in CF and TPCH will implement new infection control policies in 2018. The result of these changed guidelines will be reduced between patient transmission and better health outcomes on a global scale.

We also achieved a great outcome in our study into non-tuberculous mycobacterial infection. Our work has highlighted that this infection is four-times more common in Australians with CF living in the tropics compared to those living in temperate and sub-tropical climates. The next step is to examine potential sources of the infection including potable water and the natural environment. It is a unique study in that all CF centres in Australia are participating and we are confident it will continue to provide novel insights in 2018.

In 2017, we were proud to start two new support projects. The first is providing a mobile phone app that will assist patients with home management of CF and the second is developing on-line educational tools for patients living in remote Queensland. With no cure for CF we renew our commitment to improving psychosocial support for our patients each year.

Our final highlight for 2017 was the award of a grant to undertake a five-year

international study examining novel clinical trial approaches to treat difficult infection in people with lung diseases. This grant is valued at over $2M and one of the first clinical trial programs to be supported by The Medical Research Future Fund. This is a magnificent acknowledgement for our group and a potentially groundbreaking research opportunity.

PRESENTATIONS AND PUBLICATIONS

The team presented a total of 27 papers in 2017, including 12 original articles. We also presented at numerous national and international conferences.

AWARDS

Dr Scott Bell was nominated for three awards, including the Metro North 2017 Staff Excellence Award (Leadership Category), the Australian Museum Eureka Award (Infectious Diseases Category) and the Honouring Individual Excellence Award at The Prince Charles Hospital. Michelle Wood was awarded Best Abstract at the Cystic Fibrosis Special Interest Group (TSANZ Conference) and Best Paper at the Australasian CF Conference. The research group was awarded Highly Commended at the Metro North Research Excellence Awards (Complex Health Challenges).

RESEARCH COLLABORATIONS

We work closely with multiple research and educational institutions and different departments within TPCH. Internationally, Professor Iain Lamont in “Dunedin, New Zealand” is a major collaborator and Professor Scott Bell’s work includes his involvement in the International Working Group of Antimicrobial Resistance in CF and his authorship on a revision of the European CF Standards of Care.

HEAD OF RESEARCH GROUP

Prof Norm Morris

KEY MEMBERS OF RESEARCH GROUP

Prof Norm Morris
Dr Peter Lazzarini
Dr Jack Bell
A/Prof Petrea Cornwell
Dr James Walsh
Jenna Stonestreet
Angela Matson
Greta Hollis
Marion Jeevanayagam
Ronelle Hewetson
Michelle Slee
Anna-Liisa Sutt
Ann Finnimore
Amanda Love
Hayley Gunn
Dr Nicole Bellet
Greg Morrison
Oystein Tronstad
Aaron Lamont
Mark Roll
Tatiana Paim
Rebecca Ferrier
Kathleen Hall
Andrew Hislop
Rebekah Kelly
Lawrence Caruana
Helen Seale
Jemima Boyd
Lisa Franks
Gloria Delpra
Julie Harris
Paul McCormack
Mathew Linnane
Myra Lai
Alison Mahoney
Trent Donnelly
Lauren Gough
Rebekah Barry
Trent Jaques
Rhonda Lamb
Leanne Robertson
Martin Canning
Michael Williams
Hollie Wilczynski
Karen Chan
Tiffany Jong
Courtney Van Vuuren
Cassandra Vale
Wayne Brady
Stephen Belz
Emma Megram
Sandy Chew
Erin Dunn
Natalie Summerlin
Ellie MacQueen

A/Prof Petrea Cornwell, Dr James Walsh, Dr Peter Lazzarini

ALLIED HEALTH RESEARCH COLLABORATION (AHRC)

The purpose of the Allied Health Research Collaborative is to help people live healthy, happy and productive lives free from hospitalisation. We achieve this with research that reduces the need for a person to be hospitalised, or repeatedly so, and by investing in steps to improve their quality of life with treatment interventions.

We bring together the fields of physiotherapy, speech therapy, pharmacy and nutrition and dietetics to develop practice models that support efficient and successful recoveries, minimise long-term disability and maximise health for a wide range of patients. In much of our work, we aim to support vulnerable patients who are most likely at risk of harm or injury as inpatients or with repeat hospitalisation. With a focus on improving rehabilitation processes and care pathways, we often direct practical research efforts towards places where we will see tangible patient benefit.

The impact of our work is hospital wide and as a result, our projects include studies as varied as understanding malnutrition in rehabilitation, maximising stroke recovery, looking at speech pathology in Parkinson's disease, podiatry interventions in diabetes and improving medication management for vulnerable patients.

It is a requirement of all allied health departments that they regularly review and evaluate their work practices and this ethos is a part of our strong research culture. To deliver clinical care effectively hospital wide, we must strive for continuous improvement across each discipline.

HIGHLIGHTS

As a collective, we had many highlights within the individual departments, of which the below is a snapshot.

Nutrition and Dietetics continued to grow in 2017 with the appointment of a Principal Research Fellow in Dietetics and their involvement in projects valued at over $1.8M in grant funding. Their work in understanding the relationship between obesity, malnutrition and hospital injuries demonstrated interesting results, showing that inpatients with BMI >40 kg/m^2 have three times greater odds of developing a pressure injury, and linking malnutrition with an increased risk of in-hospital falls. Both these findings have lead to dietetic practice changes in the hospital which will improve patient safety.

Secondly, the team also undertook a successful project to understand the barriers to dining room attendance in the rehabilitation ward, where the results have led to the introduction of buffet-style food service options, café-style seating and an alfresco dining area to improve patient social and family interactions. These changes aim to promote healthy approach to nutrition as part of successful rehabilitation.

In Physiotherapy, the team supported the TPCH falls prevention agenda, looking at fall likelihood factors with the development of a prediction model. Given over 50% of patients currently have falls, these findings present a significant opportunity to deliver an education program, intervene effectively in likely falls patients and put preventative strategies in place.

Lastly, the Speech Pathology and Pharmacy teams had a range of projects in 2017 focused on important clinical activities and quality improvement measures. Significantly, Pharmacy "had almost a 300% increase" in research output (with volume of publications and presentations delivered) in 2017 compared to 2016.

PRESENTATIONS AND PUBLICATIONS

The Allied Health Research Group delivered over 80 presentations its publications in 2017 across the subgroups.

AWARDS

Dr Jack Bell won the TPCH Rising Star of Research award in 2017 and Martin Canning won the best oral presentation at the Society of Hospital Pharmacists Australia Qld Symposium

STUDENTS

Members of the AHRC collectively supervised 39 Hons, Masters and PhD students during 2017.

RESEARCH COLLABORATIONS

In 2017, we worked closely with many departments inside TPCH with much of our work being part of important internal collaborations and hospital wide initiatives. Externally, we continued to work alongside Canadian Nutrition Society, Canadian Malnutrition Task Force, Canadian Frailty Network, University of Cambridge (UK), University of Waterloo (Canada), University Ulster, Thoracic Society of Australia and New Zealand, Griffith University, The University of Queensland, Queensland University of Technology, ANZ Hip Fracture Registry, AusPEN, Royal Brisbane Women's Hospital, Bundaberg Hospital, University of Sydney, The University of Hong Kong, Hong Kong Polytechnic University, Kunming Medical University, Mayo Clinic (USA), Australian Catholic University and Mater Hospital.

HEAD OF RESEARCH GROUP

Dr Usha Gurunathan

KEY MEMBERS OF RESEARCH GROUP

Dr Swaroop Margale
Dr Shakeel Kunju
Dr Ivan Rapchuk
Dr Ian Smith
Dr Kurichi Marudhachalam
Dr Chris Stonell
Dr Daniel Faulke
Dr Sophie Jayamaha
Dr Lisa Stanton
Dr Tyson Jones
Dr Rachael Weir
Mathew Judd
Jennifer Gabriel

Dr Peter Larsen, Dr Ivan Rapchuk, Dr Swaroop Margate, Dr Rachael Weir, Dr Lisa Stanton, Dr Chris Stonell, Dr Usha Gurunathan

ANAESTHESIA RESEARCH GROUP

Delivering research that improves the safety and quality of anaesthetic care is the main aim of our research group. Our outcomes are focused on reducing surgical complications such as bleeding and clotting, minimising anaesthetic impact on organ function and investigating and understanding perioperative risk factors such as obesity or frailty. Maximising the safety and wellbeing of surgical patients is a core priority for anaesthesia research, although the direction of our projects will evolve and change in line with procedural and medical advancements within the field of surgery.

Our team is committed to a collaborative approach that reinforces the importance of quality anaesthetic practice as key to the delivery of advanced modern medicine. Questions related to how we continually improve our practice guidelines and how advancements in medical procedures influence the role of anaesthetics need to be addressed by our work for it to have significance in a multi-disciplinary research environment. Whilst reducing surgical risk will always be fundamental, patient benefits including reduced pain after surgery, faster recovery times and increased quality of recovery are becoming more important benchmarks.

We encourage collaborative projects with other research groups, not only to incorporate the expertise of more senior researchers, but also to have a holistic vision of the needs of the patient – it is our belief that this is the only way to provide comprehensive patient care. We are proud to be at the forefront of international anaesthesia research, and working alongside other groups has resulted in several new projects and a chance to take our work in exciting directions.

HIGHLIGHTS

In 2017, we continued our ongoing research, completed three studies and commenced two new projects. We increased the number of articles published in peer reviewed journals from eight in 2016 to 12, demonstrating the increasing level of recognition we are receiving for our work.

We commenced two key studies in the field which are already showing promise. One new project involving novel equipment to deliver oxygen in a non-invasive kidney stone procedure is aiming to offer an alternative to conventional general anaesthesia to improve post-operative outcomes. A second, to determine the association between blood pressure medications and blood pressure fluctuations during day surgery procedures, is on course to provide us with better information for patients regarding the use of blood pressure medications before surgery.

Many other important studies were completed in 2017, with results published, or leading to the development of further research. An important pilot study on perioperative clotting risk in patients undergoing hip or knee joint surgery was completed, where a comparison across patients with different body weights indicated those with obesity had a predisposition to increased clotting tendency. With these results, we can commence further study in this area to learn more about surgical risk factors for these patients.

Another important study describing a 50% increased risk of wound infection among obese patients following elective bowel surgery was published in 2017. The research outcome will assist many surgeons to make informed decisions about the risks of undertaking this procedure in patients with a high body mass index (BMI).

An ongoing trial to investigate the cognitive recovery time from endoscopy procedures was successfully conducted and is expected to be completed mid-2018. The results of this trial will further our understanding about the influence of commonly used anaesthetic drugs. Another multidisciplinary study that looked at cognitive function following major orthopaedic surgery along with a trial of neuropsychological interventions was also completed.

Lastly, a project on whether the preoperative fasting status of our patients matches the national guidelines revealed surprising results,

leading us to implement changes to our pre-surgery fasting guidelines.

PRESENTATIONS AND PUBLICATIONS

We published 12 articles in peer reviewed journals in 2017. Dr. Margale and several others from our group were invited to present and conduct workshops at national and international conferences.

RESEARCH COLLABORATIONS

In 2017, our core collaborations with Cardiology and Cardiothoracic Surgery led to co-authorship of several publications in peer reviewed journals. The Anaesthesia Research Group also collaborated with various other departments and research groups at TPCH, including the Critical Care Research Group, Psychology, Allied Health, Cardiology, Haematology and Nursing. Externally, we were supported by University of Queensland, University of Melbourne, Royal Brisbane and Women's Hospital, QIMR Berghofer and The Alfred Hospital.

HEAD OF RESEARCH GROUP

Prof Darren Walters

KEY MEMBERS OF RESEARCH GROUP

Maricel Roxas
Chantal Tabrett
Estelle Beevors
Irena Rymar
Kathryn Stibijl
Maria Pietsch
Megan Mearns
Sandy Phillips
Suzanne Spencer
Winnie Chu
Bernice Enever
Donna Nama
Julie Bailey-Bradshaw
Dr Scott McKenzie
Dr Russell Denman
Dr Haris Haqqani
Dr Christopher Raffel
Dr Christian Hamilton-Craig
Dr Gregory Scalia
Haunnah Rheault
Dr Andrew Clarke
Dr Peter Tesar
Dr Ryan Markham
Dr Niranjan Gaikwad
Dr Anthony Putrino
Dr Stephen Kyranis
A/Prof David Platts
Dr Wandy Chan
Dr George Javorsky
Dr Yee Weng Wong

Maricel Roxas, Megan Mearns, Julie Bailey-Bradshaaw, Dr Ryan Markham, Sandra Phillips

CARDIOLOGY CLINICAL RESEARCH CENTRE

Cardiology Clinical Research Centre (CCRC) is one of the leading sites in Australia for coordinating and conducting clinical trials and research into new devices and procedures for treating structural heart disease. Our team has an outstanding international reputation which attracts many sponsors, produces many publications and receives national recognition from peers and mainstream media.

The key focus of our group is to find innovative new technologies in transcatheter approachs for heart procedures. In these procedures, patients who are at high risk for open heart surgery can have a minimally invasive lower risk procedure instead of having open heart surgery. Most of the clinical trials undertaken relate to the development of new devices, technology and procedures, such as the Trancatheter Aortic Valve Implantation (TAVI) procedure with the goal to rapidly advance this field of surgery.

Importantly, our research also contributes to the worldwide knowledge bank and rapid evolution of technology that improves the longevity and quality of patients' lives after heart surgery, with studies on the treatment, management and follow up care of patients recovering from a range of chronic and acute cardiac conditions.

Since our group's inception, we have sought to pave the way globally for more effective and less invasive cardiac surgical techniques and, as these techniques become the new global standard of care, remain at the forefront of their advancement. We were some of the earliest researchers to have carried out first-in-man studies in lower risk implantation and repair heart surgeries, as we are still a lead site for this type of research, with multiple phases of multi-site international and national clinical trials taking place.

Our research addresses the modern challenge facing most surgeons: how to provide safer interventions for the rising population of high-risk patients. Offering lower risk procedures and improving long-term outcomes is critical to answering this challenge and to saving lives. With our research, we are committed to delivering research that will make this possible on a global scale.

HIGHLIGHTS

There were 50 research projects undertaken through CCRC in 2017.

Importantly, we continued to be part of six ongoing international clinical trials evaluating the safety, effectiveness and performance of the Boston Scientific Lotus Valve. The outcome of these trials lead to commercial use in 2015 both in Europe and Australia, and in 2017, the United States.

In 2017, our research into the IASD procedure showed it could be a promising new way to treat diastolic heart failure. In this procedure, a device is implanted between the left and right top chambers of the heart using a catheter delivery system from the leg vein. Until now, there has been no substantial treatment for diastolic heart failure and we are excited about the potential application of this new research to treat the condition.

Additionally, our ongoing research into transfemoral mitral valve repair using the PASCAL System and percutaneous tricuspid valve repair using the with TRiCinch Coil System continues to show promise. These procedures may soon provide alternative strategies for patients with severe heart failure and who are unsuitable for open heart surgery.

PRESENTATIONS AND PUBLICATIONS

Our team published over 30 articles during 2017, and we presented globally, highlighting our ongoing development and international achievements. Professor Walters delivered numerous lectures around Australia, Korea, USA, Europe and Canada.

RESEARCH COLLABORATIONS

In 2017, our global partners were are a range of universities, individual researchers and medical institutions. We also worked closely with the other cardiac departments at TPCH and Australia-wide, with support from universities and other hospitals.

HEAD OF RESEARCH GROUP

Dr Rishen Naidoo

KEY MEMBERS OF RESEARCH GROUP

Dr Peter Tesar
Dr Andrew Clarke
Dr Homayoun Jalali
Dr Dong Kang
Dr Livia Williams
Dr Anil Prabhu
Dr Morgan Windsor
Dr Bruce Thompson
Dr Peter Pohlner
Dr Bishwo Shrestha
Dr Lachlan Marshall
Dr Chang Liu
Dr Sean Goh
Dr Felicity McIvor
Dr William Foot
Dr Vinod Sharma
Dr Fiona Doig
Dr Doug Bell
Dr Lincoln Chen
Bronwyn Pearse
Susan Smith
Donalee O'Brien

Donalee O'Brien, Susan Smith, Dr Rishen Naidoo

CARDIOTHORACIC SURGERY RESEARCH UNIT

The Cardiothoracic Surgery Research Unit (CTSRU) supports focused collaborative research into complex cardiac conditions and aims to improve post-surgical outcomes for patients. As the largest cardiothoracic service in the country, our research has an important role in determining how to deliver the most advanced surgical care for cardiothoracic patients in Australia and sets important benchmarks for patient management processes.

As a group, we aim to keep abreast of technological advances, to plan and implement strategies to optimise patient outcomes, whilst auditing these to determine the ideal management plan for patients. All research needs to be clinically relevant and evidence based, with increased survival rates and healthier recoveries being the main determinants of success for our group.

The development of new surgical and patient management techniques influences many medical decisions, not just those made by surgeons, but by a range of clinicians who must work together to achieve the best for patients. For us, communication and collaboration are key factors in successful cardiothoracic research and the partnerships we have developed with other research groups and services are critical to our success.

We are also very open to opportunities for industry and external partnerships to implement new technology and to embark upon joint funding opportunities. In addition to effective collaboration, we focus on supporting and mentoring junior clinicians and encouraging research involvement at all levels. This ethos creates an effective research culture that is both outward looking and forward thinking and ensures a strong future for cardiothoracic research at The Prince Charles Hospital.

HIGHLIGHTS

In 2017, we were part of over 28 collaborative studies. This led to numerous publications and presenting opportunities, both internationally and in Australia. We were excited to have received such great recognition and to have delivered some interesting results and tangible changes to patient care.

Our ongoing study on transfusion-related immunomodulation after cardiac pulmonary bypass surgery made exciting progress and has improved our understanding of the immunosuppressive responses associated with blood transfusions. Although this study is still in preliminary stages, it has already shown exciting potential by suggesting there are new therapeutic options to be found.

The Rapid Deployment Aortic Valve study, which has been testing a new valve to shorten surgery times for elderly patients also had a successful outcome in 2017. We found that the valve tested can be safely implanted with good mid-term results. This is an exciting development that could see reduced surgery times for elderly patients undergoing specific heart procedures.

In 2017, we also launched multiple new projects. The most notable is our involvement in a multicentre trial evaluating the Cardiomed mechanical valve and our plans to trial the Edwards Inspiris valve. We will be the first hospital in Australia to do this.

We also sought out new avenues of collaboration, embarking on significant new prospective trials across many departments. These projects include working with Anaesthesiology investigating Frailty and Obesity outcomes following cardiothoracic surgery; with Cardiology Indigenous Medicine looking at Rheumatic Heart Disease; with the Qld Heart Valve Bank, UQ and Critical Care on a tissue engineering project; and with Cardiology, Anaesthesiology and Critical Care looking at a new ventricular assist device for high risk cardiac patients.

PRESENTATIONS AND PUBLICATIONS

We presented two papers and had six posters accepted at the 27th Annual Congress of the Association of Thoracic and Cardiovascular Surgeons of Asia. Our study on Immunomodulation has received international interest, with seven oral papers and one poster presented across several different conferences.

AWARDS

We were delighted that our Research Nurse Donalee O'Brien received a TPCH Nursing Excellence Award in recognition of her contribution to research in 2017.

RESEARCH COLLABORATIONS

In 2017, we continued our long-standing internal research collaborations with Thoracic Medicine, Intensive Care Medicine, Anaesthetics, Cardiology, Children's Health Services and Indigenous Cardiac Medicine. Externally, we worked with the Australian Red Cross Blood Service and The University of Queensland.

HEAD OF RESEARCH GROUP

A/Prof Peter Molenaar

KEY MEMBERS OF RESEARCH GROUP

Dr Yee Weng Wong
A/Prof Haris Haqqani
Weilan Mo
Jo Maddicks-Law

A/Prof Peter Molenaar

CARDIOVASCULAR MOLECULAR & THERAPEUTICS TRANSLATIONAL GROUP

The Cardiovascular Molecular and Therapeutics Translational Group use cutting edge laboratory research to secure better health outcomes for patients with heart disease. Unfortunately, patients with heart failure have a poor prognosis and are at risk for sudden death by cardiac arrest. With our research, we can give these patients hope for survival by identifying new drug treatments and innovative therapeutic options.

A key feature of our laboratory is researcher expertise in the use of human heart tissue to test and understand the impact of medicines before they are given as treatments to patients. The advantage of our research is using highly innovative in-vitro models to carry out these tests, with the results allowing us to determine drug effects, understand their mechanisms and predict possible adverse effects.

Our close collaboration with heart surgeons and cardiologists within TPCH enables our research to be carried out directly with heart failure patients who are at risk of sudden death. We are very fortunate and privileged to work with these patients, who are undergoing lifesaving heart surgery, knowing that we have a chance to influence their health and the outcomes of others like them in the future. Our proximity to critical patients emphasises that unique, cutting-edge laboratory science has a key part to play into tough solving medical problems like heart disease.

HIGHLIGHTS

We had three key studies take place in 2017 and we continued our exciting collaboration with Associate Professor Nikki Beard using human heart tissue to test new medicines and her advanced knowledge in the field of ryanodine receptors.

In 2017, we tested a few different drug interventions with interesting findings. For example, using our models, we saw a reduced probability of arrhythmias in patients receiving the beta-blocker carvedilol and an increased probability of arrhythmias in patients receiving B1-selective blockers, atenolol and bisoprolol. As we move forward with this research, we will learn more about the mechanisms of arrythmias and how to manage them with different medicines.

Our ongoing study determining the cardiac effects of Mirabegron, a medicine for overactive bladder syndrome, continued to show interesting findings. We predicted it would have cardiac effects and interestingly we observed separate cardio-stimulant and cardio-depressant effects. The next step for this research is designing a new generation of medicines for overactive bladder that do not have 'off target' effects in the heart and excitingly, seeing if we can use the information gathered to design a new heart disease therapeutic.

PRESENTATIONS AND PUBLICATIONS

The group delivered two publications in 2017.

STUDENTS

Our PhD student Weilan Mo continues her studies, with submission of her thesis due in 2018.

RESEARCH COLLABORATIONS

We worked closely with the Critical Care Research Group and other cardiac research teams. Externally, we worked closely with Associate Professor Nikki Beard (University of Canberra and ANU), Dr Annalese Semmler and Professor Wally Thomas (QUT), Professor Alberto Kauman (University of Murcia) and Professor Martin Michel (Johannes Gutenberg University).

HEAD OF RESEARCH GROUP

Prof John Fraser

KEY MEMBERS OF RESEARCH GROUP

Marianne Tansley
A/Prof Kiran Shekar
Cecilia Keiru
Lyn Munck
Dr Jacky Suen
Amanda Corley
Paul Jarrett
Sanne Pedersen
Margaret Passmore
Debra Black
Dr Louise See Hoe
Dr Nicole Bartnikowski
Dr Katrina Ki
Dr Connie Boon
Dr Jonathan Millar
Dr Jonothan Fanning
Dr Nchafatso Obonyo
Dr Maximilian Malfertheiner
Dr Monica Ng
Matthew Wells
India Lye
Ashlen Garrett
Ashleigh Stevenson
Michael Cavaye
Janice Reid
Ben Fraser
Will Crawford
Michelle Tsui
Fergal Temple
Lachlan Crawford
Sam Huth
Dechlan Sela
Aimee Khoo
Santosh Adiraju

Prof John Fraser

CRITICAL CARE RESEARCH GROUP

The Critical Care Research Group exists to strive for greater understanding of the issues that face critically ill patients. We aim to save the lives of patients with severe and hard to treat diseases by finding new treatments via world leading research.

We are an internationally renowned research centre that conducts national and multinational clinical studies. As a result, patients at TPCH have access to some of the best and brightest researchers in critical care via our team and from international partners who represent important opinion leaders in the field. Together, we are working tirelessly to improve survival rates and quality of life for patients with life threatening conditions such as heart disease, lung disease, sepsis and other devastating conditions.

Unfortunately, too many critically ill patients are unable to be saved by current medical treatments. This is most evident in the number of deaths that occur from heart and lung diseases. As a group, we believe these deaths can, and will be prevented by cutting edge research that delivers innovation in treatments, new discoveries and radical advancements to current critical care procedures.

The nature of our research is multifaceted and complex, and our discoveries may take many years to turn into practice. This means the requirement for success in our field is nothing less than long-standing committed collaboration, patience and dedication from a world leading team. We are making long term investments in pioneering research knowing this is the only approach that will make new life saving treatments possible for critically ill patients all over the world.

HIGHLIGHTS

2017 was a busy and exiting year for our group with 13 studies in progress. Our work continued to be highly praised via numerous awards, international recognition and significant financial investment.

A key highlight was a grant of $1.67M awarded to us by the National Health & Medical Research Council for our Dead Heart Project, aiming to improve the quality and quantity of donor hearts available for transplantation. This is one of the important ways we know we can save heart disease patients and improve the success rate of heart transplantations. The continuation of major funding for these types of projects attested to the viability and importance of our work in 2017.

We are also proud to have launched the Future ICU Bed Space project which has gained the backing of both industry and government in 2017. With this research we are hoping to be able to improve patient outcomes, reduce hospital time and reduce impact to hospital budget. Although this project is in very early stages, we have already seen some promising results.

Lastly in 2017, our team coordinated and ran the 2017 APELSO conference on the Gold Coast with over 400 attendees and 88 speakers from around the world attending three days of workshops and presentations. This was a great undertaking and achievement which further enhanced our international reputation.

PRESENTATIONS AND PUBLICATIONS

Our team presented all over the globe, with many invitations to speak and present our research findings. Our team also published the first ever textbook on Mechanical Circulatory Support by Elsevier; a remarkable achievement by group members Shaun D Gregory, Michael C Stevens and John F Fraser, and published over 40 articles.

AWARDS

The team won multiple awards in 2017. These included the prestigious UQ Faculty of Medicine Innovator of the Year award for our Open-Heart Project. Individual awards were received by Prof John Fraser (Finalist for Research of the Year, Metro North HHS Research Awards),

Paul Jarrett (TPCH Charlie's Week New Investigator Award), Dr Jonathan Fanning (TPCH Charlie's Week, Best Published Paper Award) and Dr Louise See Hoe (TPCHF Fellowship Award).

STUDENTS

The team also supervised 23 medical students, Honours and PhD students.

RESEARCH COLLABORATIONS

Our collaborations were wide ranging, local and international, spanning Australia, Asia, Europe and America, working with leading critical care researchers. In Australia, we worked closely with the TPCH ICETLAB, The Alfred Hospital and St Vincent's Hospital in 2017.

Matthew Wells

DR. LOUISE SEE HOE

DR LOUISE SEE HOE IS SETTING DONOR HEARTS AT REST

Warm bodies, warm hearted, warm blooded. Warmth is a word often associated with life. From a heart transplant perspective, it seems natural then, to warm donor hearts before surgery as a way of preserving their function. The latest clinical technology uses a machine developed by TransMedics to pump warm, oxygenated blood and other nutrients through a beating donor heart. This method preserves donor hearts for up six hours. But, what if there was a different way to keep donor hearts viable for even longer?

Dr Louise See Hoe has been granted a Research Fellowship by The Prince Charles Hospital Foundation to find an answer to that very question. Finding an answer is important given that the number of people needing a heart transplant in Australia significantly outweighs the number of donor hearts that become available.

Suitable donor hearts are incredibly precious. Less than 2% of people die in the specific circumstances where organ donation is possible. Of the cases where donation is possible, 80% of donor hearts are considered unsuitable for transplant due to organ damage caused by travel time and stringent donor criteria. "I didn't realise before working here, but it's amazing how many hearts are actually suitable for transplant. It's not that many," Dr See Hoe says. "My goal is to improve the number and quality of donor hearts available for transplant".

Part of Dr See Hoe's work is to investigate exactly what happens to hearts after brain death has occurred. We know that the heart goes through a traumatic process after brain death where it is flooded with molecules causing it to shut down. What we do not have is an in-depth understanding of this process. Without this information, it can be difficult to design methods to improve the quantity and quality of donor hearts.

One method showing early promise in animal studies is the use of hypothermic ex vivo perfusion on donor hearts. Essentially, this method delivers oxygenated blood and nutrients to the heart at a lower flow rate, pressure and temperature compared to the TransMedics machine. The heart doesn't beat, instead it rests. It is hoped that in using this method, cardiac energy can be preserved and less damage will occur to the cells lining the walls of the arteries. It offers the potential to preserve donor hearts for up to 24 hours and to improve the heart function post-transplant.

The potential of Dr See Hoe's research is huge, given that The Prince Charles Hospital is a leading institute in cardiac surgery and heart transplantation. With the support of The Prince Charles Hospital Foundation and the Critical Care Research Group, Dr See Hoe is focused on translating her research findings into clinical practice. "My short-term goal is to have enough pre-clinical data to do a clinical trial," Dr See Hoe says. In the near future, a cool, well-rested heart could be the key to unlocking more donor hearts available for transplant.

HEAD OF RESEARCH GROUP

Dr Shaun Gregory and Prof John Fraser

KEY MEMBERS OF RESEARCH GROUP

Prof Geoff Tansley
Dr Jo Pauls
Dr Nicole Bartnikowski
Matthias Kleinheyer
Eric Wu
Sam Liao
Andrew Stephens
Eleonore Bolle
Clayton Semenzin
Raymond Ho
Alice Boone Martin Mapley
Kristy Garrick
Annabelle Benton
Angela Girnghuber
Laurisa Swarmy
Dr Fredy Munoz
Chris Chan
Jinjing Ji
Kimmi Ko
Jessica LeDunn
Cindy Dopierala
Cornelia Feldon
Stefan Waffler
Steffen Frohle
Vasu Lakkoju
Emma Evans
Mohmed Ahmed
Emad Ahmadi
Dylan Lightbody
Kimberly Horton
Madison Baere
Chris Slade
Flavio De Abdre Pinto
Oscar Vosshage
A/Prof David Platts
Dr Bruce Thomson
Wendy Strugnell
Robert Salamonsen
Matthew Dargusch
Tim Dargaville
Zhiyong Li
Cara Wrigley
Dr Daniel Mullany
Ulrich Steinseifer
Nigel Lovell

L-R Front **Eleonore Bolle, Sam Laio, Kristy Garrick, Trina Yeadon & Lauren Beard,** ***Middle Row L-R*** **Clayton Semenzin, Alice Boon & Eric Wu,** ***Back Row L-R*** **Martin Mapley & Geoff Tansley**

THE INNOVATIVE CARDIOVASCULAR ENGINEERING & TECHNOLOGY LABORATORY (ICETLAB)

The aim of the ICETLAB is to use cutting edge research in the field of biomedical engineering to dramatically reduce the number of deaths from cardiovascular disease worldwide. As the largest research centre of our kind in Australia, and part of the world-class Critical Care Research Group at TPCH, we bring clinicians, surgeons and engineers together to develop surgical and medical technology that will offer new hope to seriously ill heart patients.

Our research focuses on long-term projects dedicated to the design, development and clinical trialing of new surgical devices. We also invest heavily in evaluating current devices to guide improvements in their use. In the field of heart surgery, we have projects seeking to advance ventricular assist devices, artificial pump technology, cannulation technology and we are looking at various improvements to surgical techniques.

With cardiovascular disease the leading cause of death in the developed world, it is important to leave no area unexamined when considering current surgical problems and the role that engineering can play in solving them. Through our research, not only do we believe we'll find innovative solutions that save lives, but that we'll significantly reduce many of the complications associated with cardiovascular surgery to improve survival rates, post-operative outcomes and quality of life for heart patients all over the world.

HIGHLIGHTS

We were proud to have been awarded more than $1 million in research funding in 2017 and that Dr Shaun Gregory received an Advance Queensland Research Fellowship in recognition of his work. The additional major funding, collaborative support and international acclaim we have received is very encouraging as we continue to work towards achieving our long-term goals.

With regards to smaller studies, we published three important papers evaluating the use of current clinically-used devices with the improvements put forward having the potential to alter clinical practice and patient outcomes. Additionally, ICETLAB researchers received significant media attention in 2017 with Clayton Semenzin and Alice Boone giving televised interviews on our department's work.

PUBLICATIONS AND PRESENTATIONS

As a group we promoted, educated and informed many medical, engineering and health professionals about our work via multiple publications, presentations, conferences and professional meetings in 2017.

Also, as part of the Critical Care Research Group, researchers in the ICETLAB coordinated an international effort to produce the first ever textbook describing the medical and engineering aspects of artificial hearts and lungs. This textbook provides improved training for medical and engineering professionals and will hopefully lead to a faster development process for new devices. We also published over 20 articles related to our work.

AWARDS

In 2017, the team and Dr Shaun Gregory were finalists and were Highly Commended in the Discovery and Innovation Research Category at the Metro North Research Excellence Awards and Eleonore Bolle won Best Presentation at the APELSO Conference.

STUDENTS

In 2017, we expanded our team to include five postdoctoral fellows, 12 PhD students and countless undergraduate students and interns.

RESEARCH COLLABORATIONS

National collaborations include many departments at TPCH, The Australian Red Cross Blood Service, N Stenning and Co Pty Ltd, Royal Prince Alfred Hospital, Monash University, University of New South Wales, CSIRO, St Vincent's Hospital and The University of Sydney.

Global partners include HeartWare International Inc, Texas Heart Institute (USA), University of Dammam (Saudi Arabia), University of Franche-Comte (France), University of Applied Sciences (Germany), Applied Medical Engineering, Helmholtz Institute (Germany), RWTH Aachen University (Germany), Ibaraki University (Japan), Shibaura Institute of Technology (Japan), University of Malaya (Malaysia), Universita Degli Studi Di Roma La Sapienza (Italy) and Tsinghua University (China).

Kristy Garrick

HEAD OF RESEARCH GROUP

A/Prof Gregory Scalia

KEY MEMBERS OF RESEARCH GROUP

Prof Darren Walters
Prof Jonathon Chan
A/Prof David Platts
A/Prof Darryl Burstow
A/Prof Christian Hamilton Craig
Dr Anthony Putrino
Natalie Kelly

Natalie Kelly, A/Prof Gregory Scalia

DEPARTMENT OF ECHOCARDIOGRAPHY & CATHARSIS PROGRAM

Our group studies the use of advanced cardiac ultrasound technologies with the goal to advance cardiology practice and improve treatments for patients with serious cardiac diseases. By using the most advanced techniques in echocardiology and driving research into advancing screening programs, our research ultimately leads to life-saving interventions for heart patients.

The core research undertaken by our group is under the CATHARSIS program; a long term, multi-faceted study delivering the world's largest ever echocardiography comparative study. The project is a collaboration of cardiologists, echo-cardiologists and a range of allied health practitioners who have the collective task of performing high resolution, protocol-driven echocardiograms on a broad range of patients and then subsequently using the data to validate existing procedures or recommend new techniques.

This work exemplifies our mission to ensure that what is available to patients at TPCH is the most up to date and technologically advanced ultrasound and imaging technology in the world. Our group is an integral part of the puzzle in solving the disease burden of heart disease and the hospital wide collaborative effort to find treatment options that save more lives.

HIGHLIGHTS

The CATHARSIS study made groundbreaking progress with approximately 300 of the 1000 planned patients being enrolled in 2017. This data has already provided unique insights into diastolic cardiac function. As a result, a brand-new mode of analysis of echocardiography in diastolic function is being generated; a truly remarkable achievement so early in the project.

RESEARCH COLLABORATIONS

In 2017, we worked very closely with other groups and cardiac departments, most significantly with Critical Care Research Group, Cardiology and Medical Imaging.

HEAD OF RESEARCH GROUP

Prof Tony Rahman

KEY MEMBERS OF RESEARCH GROUP

Prof John Croese
Dr Ruth Hodgson
Dr James Thomas
Ann Vandeleur
Hayley Thompson
Toni Schmid
Asim Khokhar
Sarah Kentwell
Davoud Pourmazi
Prof Greg Anderson
Dr Jan Lian
Mark Bettington
Dr Paul Giacomin
Prof Nathan Subramanian

Prof John Croese, Prof Tony Rahman

GASTROINTESTINAL HEALTH RESEARCH GROUP

The overarching ambition of our group is to perform clinically relevant and translational gastrointestinal (GI) and liver research. We address the significant public health concerns that relate to the fields of gastroenterology and hepatology, identify clinical improvement possibilities and innovate in the themes of service development, efficiencies and quality.

Our research is primarily focused on interventions and treatments for hepatitis, cirrhosis, hepatic encephalopathy (HE) and coeliac disease, but we also support the advancement of endoscopy and colonoscopy procedures. We aim to produce high quality scientific and laboratory research in a high impact clinical unit, where the full cycle of research can then be clinically tested. Our ethos is to combine expertise and capability within the department which brings together leading researchers, both within TPCH and nationally to achieve the best outcomes for our patients.

HIGHLIGHTS

In 2017, we were focused on the delivery of three key studies. A major highlight was the delivery of our innovative model of care to treat hepatitis C in the community known as 'Cure-it'. By the end of 2017, we had cured almost 500 people of previously incurable hepatitis C. This not only revolutionised their lives, but the health economy as well by preventing progression of their condition into cirrhosis and chronic liver disease. All this has been achieved without patients attending the hospital with our successful and unique community treatment model.

Our second big achievement in 2017 related to the development of our clinical hepatology database and biobank. More than 100 patients have now been recruited, with their information contributing to an increased knowledge of variables relating to the diagnosis and progression of chronic liver disease. This biobank collection is now the largest in Australia in this field and has led to innovative development of point of care testing for diagnosis of HE that was previously not possible.

Lastly, our hookworm in coeliac disease study continued to grow in 2017 with enrolments close to being finalised. It is premature to speculate on the outcomes of this project, but we are very hopeful it will have implications for the treatment of coeliac disease. The results will be published in 2019.

PRESENTATIONS AND PUBLICATIONS

A publication outlining the success of the hepatitis C 'Cure-It' program is in progress and two abstracts have been submitted.

AWARDS

The research group was nominated for three awards in 2017 and the 'Cure-It' project won the Queensland Health Award for Excellence. We are also happy to announce Dr Tony Rahman was nominated for an Australia Day Award for his services to treatment of hepatitis C in the community.

RESEARCH COLLABORATIONS

National collaborations in 2017 included Queensland University of Technology, QIMR-Berghofer, Concord Hospital and CSIRO. We had international research cooperation with by Malaghan Institute in Wellington (New Zealand), Professor Jas Bajaj (University of Virginia) and Professor Debbie Shawcross (University of London).

HEAD OF RESEARCH GROUP

Dr Eamonn Eeles (Internal Medicine Services)

Dr Chrys Pulle (Internal Medicine Dementia Research Group and NOFEAR)

KEY MEMBERS OF RESEARCH GROUP

Dr Jeffrey Rowland
Dr Ling Lan
Rhonda Mead
Dr Jack Bell
Margaret Morton
Leah Thompson
Martin Canning

Dr Chrys Pulle, Dr Eamonn Eeles

INTERNAL MEDICINE SERVICES

Internal Medicine Services comprises the Dementia Research Unit (IMDRU) and the Network for Orthopaedic Fracture Education and Research (NOFEAR) and is a collective of highly skilled interdisciplinary clinicians and researchers. Our research goal is to make clinical care better for all patients.

We search for cures, improve diagnostic procedures and optimise care pathways for a range of difficult to treat conditions. The group has a diverse portfolio of research projects such as international clinical drug trials in dementia, translational research in stroke care and ways to optimise fracture recovery.

Importantly, our research into cognitive decline provides the opportunity for TPCH patients to be part of cutting-edge international trials for Alzheimer's disease and related dementias. As part of this, we can offer patients access to newly developed treatments, expert medical care and the best possible support and education for the patient and their family.

The Internal Medicine Services research committee leadership team is responsible for facilitating a centre of research excellence that drives significant clinic improvements.

We take important steps to foster a culture in which all staff are encouraged to constantly review patient care for improvement opportunities and seek avenues to deliver positive changes through research. Encouraging clinicians to develop novel research ideas is part of our groups ethos and an important way we deliver continuous improvements in patient care.

HIGHLIGHTS

In 2017, we commenced 24 new research studies in addition to the ongoing work from previous years.

A major highlight for us remains our ongoing international clinical drug trials in Alzheimer's as they continue to give patients access to innovative treatment possibilities and offers access to expert diagnostics, treatments, interventions and follow-up.

Additionally, we were thankful that the dining area in the Rehabilitation and Acute Stroke Unit was remodeled based on our investigations into the barriers and facilitators to dining room attendance.

The issues we found were addressed by the new design and we are hopeful the new dining room will improve rehabilitation and nutrition outcomes among RAS Unit patients.

PRESENTATIONS AND PUBLICATIONS

21 oral and poster presentations were completed in 2017 by all levels of clinicians in addition to ten publications.

RESEARCH COLLABORATIONS

Internally, we worked closely with Allied Health and individual clinicians from other collaborating departments. Locally, we were supported by Metro North Public Health Network and the Metro North Hospital and Health Service and internationally, we worked with the National Health Service England.

HEAD OF RESEARCH GROUP

Wendy Strugnell

KEY MEMBERS OF RESEARCH GROUP

Dr Rachael O'Rourke
Dr Allan J Wesley
Dr Katrina Hopcraft
Dr Richard Slaughter
Dr Aaron Lin
A/Prof Christian Hamilton-Craig
Dr Johanne Neill
Jim Crowhurst
Stanley Redmond
Robyn Riley
Andrew Trotter

Wendy Strugnell

MEDICAL IMAGING RESEARCH PROGRAM

The Medical Imaging Research Program delivers improvements in diagnostic imaging with the aim to find safer, faster and more accurate diagnoses of different medical conditions. We are committed to improving the way we treat and diagnose health problems using imaging and to identifying potentially life-threatening conditions earlier using the most advanced techniques in the field.

The Richard Slaughter Centre of Excellence in Cardiovascular MRI operating within our department is Australia's largest cardiac MRI service. Through a research collaboration with Siemens Healthcare, we explore new MRI technologies to improve image quality, acquisition speed and diagnostic accuracy with the hope it will guide improvements to the clinical management of cardiovascular disease.

As a national centre for excellence in medical imaging, we have an Australia-wide research reach and treat patients from all over the country. Our extended reach supports many patients with more accurate diagnoses and early intervention and enables us to undertake clinical research that will progress the development of MRI as a diagnostic tool for heart diseases.

HIGHLIGHTS

Our group had six key projects underway in 2017 thanks to internal collaborations and our partnership with Siemens Healthcare.

The most significant highlight for us was the ongoing success of the exercise cardiac MRI program which continued to make excellent progress in assessing pulmonary arterial hypertension. The results are helping clinicians detect early changes in patients' right ventricular function, providing valuable information that enables them to assess patient risk and assist decision making. We were proud that this work was showcased by Siemens Healthcare at a conference in Barcelona.

Secondly, our international lung screening trial investigating lower dose imaging relative to established low dose protocols was a great success. The results have enabled us to use lower radiation doses, decreasing the potential for patient harm from radiation exposure. Also, excitingly for the team, this project and our collaboration with the International Lung Screening Trial was covered by Channel 9 News Queensland.

PRESENTATIONS AND PUBLICATIONS

An article entitled 'Exercise Cardiac MRI, a Clinical Reality with Compressed Sensing' authored by Wendy Strugnell and Dr Aaron Lin was published in the RSNA edition of 'Magnetom Flash - The Magazine of MRI'. This work was also presented by Siemens Healthcare at the International Society for Cardiovascular Magnetic Resonance (Barcelona). The group also published three articles and gave four presentations.

STUDENTS

Dr Aaron Lin continued his PhD studies during 2017.

RESEARCH COLLABORATIONS

Within TPCH we worked closely with Queensland Cardiology Program and Clinical Cardiac Research Centre, Critical Care Research Group, Innovative Cardiovascular and Engineering Technology Laboratory, Queensland Pulmonary Hypertension Unit and Department of Physiotherapy.

Externally, we had numerous national and international collaborators including Menzies Health Institute Queensland, Griffith University, University of Queensland, Baker Heart and Diabetes Institute, Siemens Healthcare Pty Ltd (Australia), University of Sydney, Royal Prince Alfred Hospital, St Vincent's Hospital, Royal Melbourne Hospital, Fiona Stanley Hospital, Sir Charles Gairdner Hospital, Epworth Healthcare, Siemens Healthcare GmbH (Germany) and British Columbia Cancer Agency (Canada).

HEAD OF RESEARCH GROUP

A/Prof Brett Hughes

KEY MEMBERS OF RESEARCH GROUP

Dr Zarnie Lwin
Dr Matthew Burge
Dr Po Inglis
Emma Wynd
Kirsten Popplewell
Vani Sathiaseelan

A/Prof Brett Hughes

MEDICAL ONCOLOGY RESEARCH GROUP

The Medical Oncology Research Group is focused on improving the clinical outcomes of patients with cancer. We conduct research into new treatments for different types of cancers, although our core research focus is to find the most advanced treatments for lung cancers and mesothelioma.

Our group has a long history of involvement in treating both lung cancers and mesothelioma and we have been part of many successful collaborative and pharmaceutical sponsored clinical trials in this area. We have been at the forefront of delivering new therapies and treatments for these diseases and borne witness to the growth of effective targeted drug therapies and seen sophisticated immunotherapies revolutionise patient care.

Despite advancements in the quality of therapeutic options for lung cancer patients in recent years, there is still much to be done to improve survival rates and quality of life. We consider our research priority to be to develop the 'next generation' of interventions for this cohort. This commitment is characterised by our continued investment in highly innovative projects such as world first clinical trials, studies of new drug therapies, finding alternative options to surgery and our overall collaborative effort to understand what quality of life with lung cancer means to our patients.

HIGHLIGHTS

2017 was a very productive year for our group. We had 16 studies either in active recruitment, in ongoing follow up or treatment stages.

A big highlight was the outcome of new drug trials treating stage IV non-small cell lung cancers in which we had four studies show positive results. We saw a significant improvement in the health and well-being of our patients through their involvement in these trials. Excitingly, this is in line with a more general trend where we are seeing prolongation of life and improved quality of life become more common outcomes in trials which use advanced cancer therapeutics.

In 2017, we were proud to welcome Dr Matthew Burge to the team. His strong interest in gastrointestinal cancers will be a welcome addition to supporting the clinical needs of patients with gastrointestinal cancers at TPCH. Also, Dr Burge climbed Mount Aconcagua in Argentina to raise funds for the Gastro-intestinal Cancer Institute raising $40,000 individually and $140,000 as part of the group he climbed with. We would like to congratulate Dr Burge on this achievement and thank him for raising funds and much needed awareness for gastrointestinal cancer research.

PRESENTATIONS AND PUBLICATIONS

In 2017, our group delivered 11 abstracts and presentations and an additional 12 publications across medical magazines and journals.

RESEARCH COLLABORATIONS

Our research group has ongoing collaborations with Australian Lung Cancer Trials Group, Australasian Gastro-Intestinal Trials Group (AGITG) and Canadian Cancer Trials Group (CCTG). In addition to these trial groups, we have ongoing collaborations with many pharmaceutical companies including Roche, Novartis, Pfizer, TP Therapeutics, Boehringer Ingelheim, AstraZeneca, and AbbVie.

HEAD OF RESEARCH GROUP

Prof Paul Fulbrook

KEY MEMBERS OF RESEARCH GROUP

Dr Melanie Jessup
Sandra Milee
Josie Lovegrove

Prof Paul Fulbrook

NURSING RESEARCH AND PRACTICE DEVELOPMENT CENTRE

The Nursing Research and Practice Development Centre (NRPDC) is a nurse-led research team with the aim to inspire, support and undertake quality research within the hospital. We hope to foster tangible procedural change through research and encourage the implementation of evidence-based best practice for patient care. Our key research priority areas are falls and pressure injury prevention and reducing the harm associated with these adverse events.

The work of the NRPDC contributes to reducing the negative impact of falls and pressure injuries such as patient harm and pain, poor long-term recovery, reduced quality of life and all the associated personal implications of prolonged hospital stays. We undertake research and practice development in this area knowing it has a direct impact on the quality of care patients receive at TCPH.

To achieve our research goals, we take our role in extending nursing research capacity and capability very seriously and are committed to forming solid links with other departments, educational institutions and universities to enhance our research culture.

We also provide mentorship, quality resources for research development and support our nursing staff to partake in research projects or higher degrees. This collaborative ethos has a key driver of our research successes and is what leads to improved patient care hospital wide.

HIGHLIGHTS

Most of our research achievements were related to our ongoing work in falls and pressure injuries and due to the multifaceted nature of these issues, our research takes multiple directions each new year. In 2017, projects evaluating preventative interventions, exploring methods of risk assessment, investigating health professional knowledge and assessing prevalence and incidence all demonstrated tangible patient impact.

Additionally, and despite a large workload of research dedicated to falls and pressure injury prevention, we were able to pursue studies in other areas including mental health, emergency care and wound management as part of our dedicated approach to improving patient experiences and outcomes.

PRESENTATIONS AND PUBLICATIONS

The NRPDC team contributed to many national and international peer reviewed journals throughout 2017, including writing, co-writing and supporting 17 journal publications, three conference abstracts and 12 conference papers.

AWARDS

Josephine Lovegrove was successful in receiving a Honours Fellowship from ACU.

STUDENTS

We supported and supervised five PhD candidates, four Masters students and one Honours student. Five students completed post-graduate studies including three PhDs.

RESEARCH COLLABORATIONS

We collaborated closely with many partners state-wide and further afield on national projects. In 2017, we worked with Australian Catholic University, Alliance for Vascular Access Teaching and Research, Griffith University, Queensland Ambulance Service, Queensland University of Technology, Australian Catholic University, CSIRO and Latrobe University.

HEAD OF RESEARCH GROUP

Prof Yin Xiao

KEY MEMBERS OF RESEARCH GROUP

Dr Indira Prasadam
Dr Xiaoxin Wu
Dr Bohao Liu
Antonia Rujia Sun
Dr Sekhar Sundararajan
Dr Patrick Lau

Prof Yin Xiao

OSTEOARTHRITIS RESEARCH GROUP

Osteoarthritis is the most frequently occurring joint disease among adults worldwide and the most significant cause of disability among elderly people in Australia. As a chronic degenerative disease, it has a devastating health burden that can harshly impact quality of life.

With no effective treatments available or no single test or drug which will early diagnose, or cure osteoarthritis, researchers and rheumatology clinicians are presented with a unique set of challenges. To best address these, we take a holistic approach aiming to innovate research across all areas of the disease including diagnosis, treatment options, potential cures and prevention methods.

With our research, we look at the key risk factors of osteoarthritis, evaluate new ways of using medical imaging to diagnose it early and hope to find new treatments to repair damaged joints. We also have a specific research focus on understanding the relationship between the rise of obesity, metabolic syndrome and an increased prevalence of the condition.

Our research team consists of an integrated group of clinicians, scientists and PhD researchers who share a common goal of performing cutting-edge research and translational studies in our field. Together, we are striving to better understand osteoarthritis to improve the lives of osteoarthritis patients in our community.

HIGHLIGHTS

We undertook five key studies in 2017. In our work on obesity and arthritis, we were able to show that altered lipid metabolism may be a risk factor providing a plausible link between the rise in obesity and arthritis, particularly of the knee. As a result, the team has already begun working alongside dietitians to try to educate the public about healthy eating and how to keep metabolic levels at a point that will not damage joints. This work attracted extensive newspaper and media coverage in 2017, including a Channel 7 News story.

Additionally, we had some excellent research outcomes into the therapeutic role of mitochondria-targeting antioxidants in treating osteoarthritis and we successfully provided proof-of-concept for this potentially innovative treatment. This was an important step towards identifying a new therapeutic option for our patients which we hope to progress with research in 2018.

PRESENTATIONS AND PUBLICATIONS

We published 15 papers in 2017.

AWARDS

The team won the Metro North Research Excellence Award for Discovery and Innovation for their contribution to osteoarthritis research.

STUDENTS

We supervised 18 masters and PhD students during the year.

RESEARCH COLLABORATIONS

We worked with the support of Allied Health from within the TPCH. Externally, we thank Professor Jian Q Feng (Texas University) for his contribution to our work in 2017.

DR. INDIRA PRASADAM

DEAR JOINT CELLS: KEEP CALM AND CARRY ON WITH 'CARTI-NOURISH'

Your heart is pounding in your chest and it feels like you can't breathe. As you start to sweat, a wave of fear is washing over you. What is happening? you think as your mind starts racing. This is what stress can feel like. It's also how our joint cells feel when they are experiencing oxidative stress, which appears to be a major contributor in developing osteoarthritis.

Dr Indira Prasadam received international acclaim in 2017 for her research findings suggesting that high levels of cholesterol can be a trigger for oxidative stress on cartilage cells. Oxidative stress is caused by an overabundance of free radicals, a by-product of energy production in our cells. When there are too many free radicals, they cause damage to our cells. In the case of osteoarthritis, the damage occurs to our cartilage.

Building on this ground-breaking work, Indira has now been granted a Research Fellowship by The Prince Charles Hospital Foundation to investigate whether nutraceuticals can reduce free radical production within cartilage cells. A nutraceutical is anything that is derived from natural materials such as food that provides medical or health benefits. Dr Prasadam has developed her own nutraceutical called 'Carti-Nourish' which includes fatty acids and chemical compounds derived from green tea.

Considering the current treatment options for late-stage osteoarthritis, a food based dietary supplement like 'Carti-Nourish' would be a revolution in health care. At the moment, drugs that prevent the onset or progression of the disease are not available. For most late-stage osteoarthritis sufferers, knee or hip replacement surgery is their only treatment option. By this stage, they often have difficulty walking and going about their daily activities.

Dr Prasadam's research has the potential to improve the quality of life for patients with osteoarthritis and maybe even prevent its formation in the first place. With arthritis affecting 25 per cent of Australians and costing the health care system an estimated $4 billion annually: it is easy to see the value in this important research.

A key part of the research is to further enhance the bioavailability of this product at a preclinical level and performing a clinical trial at The Prince Charles Hospital. The trial will be used to determine the effects of 'Carti-Nourish' on knee cartilage loss in osteoarthritis patients. For Dr Prasadam, The Prince Charles Hospital is "the best place to perform the research because of the ability to collaborate with frontline clinical professionals and the sheer volume and diversity of osteoarthritis cases treated there. This helps to speed up the translation of scientific findings into effective clinical practice".

The research supported by The Prince Charles Hospital Foundation is progressing at a rapid pace, with clinical trials expected to start in the next two years. Thanks to Dr Prasadam, it may soon be possible to soothe our panicking joint cells with the dietary supplement, 'Carti-Nourish'. It could be exactly what our cartilage cells need to keep calm and carry on.

HEAD OF RESEARCH GROUP

Prof Daniel Chambers

KEY MEMBERS OF RESEARCH GROUP

A/Prof Peter Hopkins
A/Prof Brendan O'Sullivan
Maxine Tan
Dr Timothy Sladen
Dr Kenneth Sinclair
Debra Enever
Michelle Grant
Sandy Bancroft
Tracy Smith

Dr Timothy Sladen, Prof Daniel Chambers

QUEENSLAND LUNG TRANSPLANT SERVICE

The aim of the Queensland Lung Transplant Service (QLTS) is to improve the health and survival outcomes for patients with lung disease. Our research advances the number of treatment options available for lung patients, increases the success of lung transplant procedures and ensures positive long-term outcomes for transplant recipients so they can maintain quality of life in the future.

Lung transplantation is often the only viable option for patients with lung disease. Our research to reduce the impact of post-lung transplant diseases and lung failures is critical. We have been responsible for numerous world first studies in this area and for research into post-lung transplant rejection, and our clinical trial centre is one of the largest in the world.

As an internationally renowned research group, we innovate to progress the current scientific understanding of the biology of lung diseases and we conduct trials that may not have been done before in a clinical setting to pioneer new therapies. The QLTS Research Program has adopted a powerful, multifaceted approach to fighting all aspects of lung disease and post-transplant lung rejection – addressing all aspects of pathogenesis from medication adherence to transplant tolerance monitoring, from regenerative strategies to novel biomarkers and antifibrotic targets.

Treating advanced lung disease is complex. When survival windows are short, laboratory results need to be efficiently translated into clinical management protocols because we need new treatments to save lives. It is essential that our research program is effectively embedded in the clinical program and that we demonstrate an ongoing commitment to improving both survival rates and quality of life for all lung disease patients in everything we do.

HIGHLIGHTS

The main projects undertaken in 2017 were aimed at improving outcomes for patients following lung transplantation. We also continued to be recognised as a leader in our field with two world-first studies having commenced.

In 2017, we commenced a groundbreaking multi-site trial to treat chronic lung allograft dysfunction (CLAD) with stem cells (ASSIsT CLAD). This research is the world's largest ever study of a stem cell therapy for lung disease and is testing the efficacy of stem cell treatment versus placebo in patients with CLAD for the very first time.

It is our hope this project will help us develop an essential point-of-care test of allograft tolerance in addition to proving that stem cell therapy improves outcomes for CLAD patients. We will also acquire world-first data of the effect of stem cell therapy on lung immune cells in humans.

Our second exciting highlight in 2017 was the development of a world-first technique to gain unprecedented insight into cases of chronic lung dysfunction where donor lungs are attacked by the immune system. This new technology known as RNA-Seq is the 'Hubble Telescope of the Cellular World' because it is not only giving us the ability to intimately view known cell types, but also to discover new ones. Discovering new cells will lead to new treatment targets for a wide range of diseases and help us determine which cells are linked to improved lung survival.

Lastly, Dr Kenneth Sinclair received a tremendous accolade by being selected as one of five finalists in the Early Career Scientist Award in Transplantation at the International Society for Heart and Lung Transplantations Annual Meeting. His work was chosen from over 1,000 abstracts with only the very best being shortlisted.

PRESENTATIONS AND PUBLICATIONS

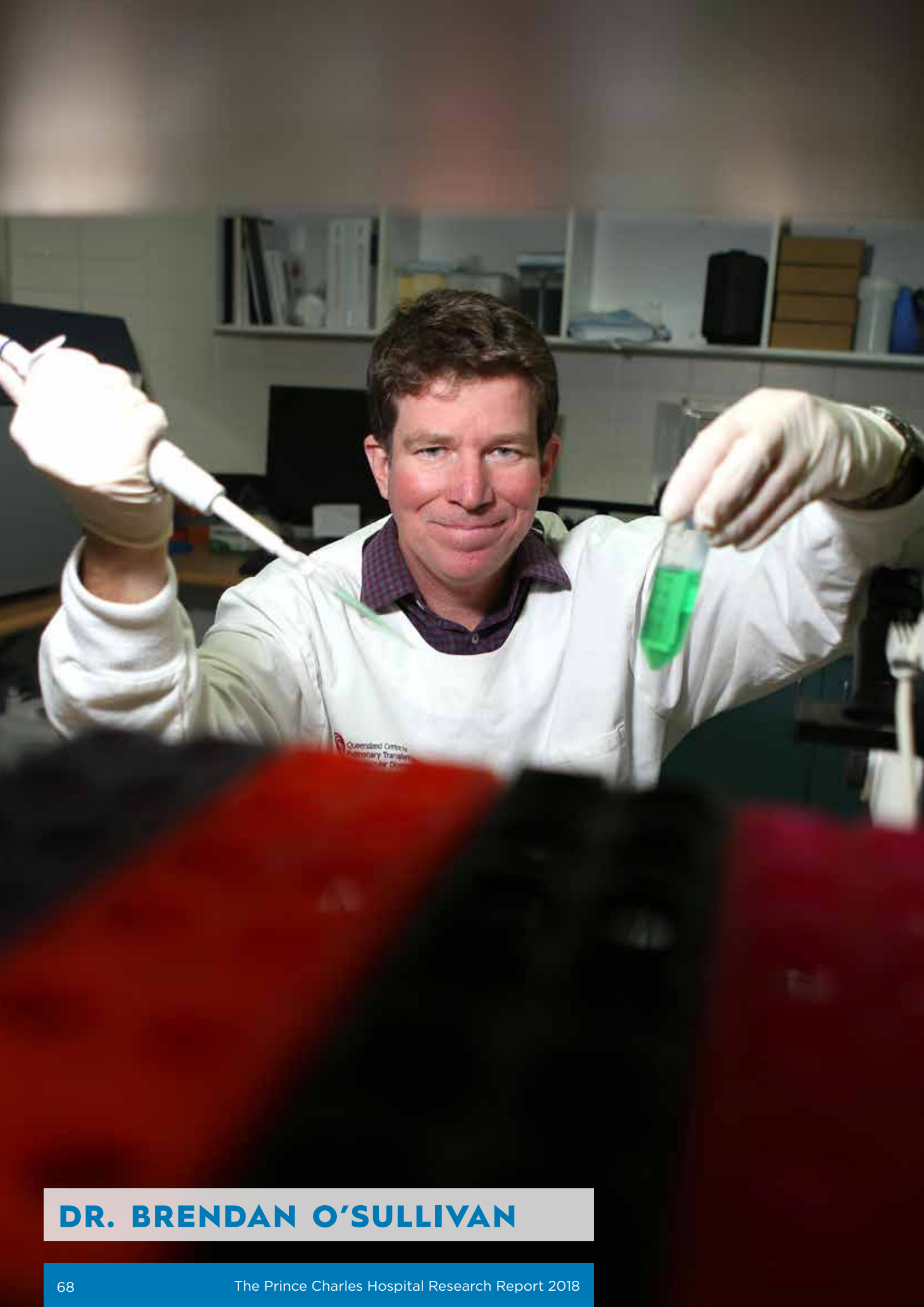
Presentations were made at The International Society for Heart and Lung Transplantation and nine publications were made.

STUDENTS

We have one student, Dr Tim Sladden, enrolled in a PhD under our team's supervision.

RESEARCH COLLABORATIONS

Central to the team's work in 2017 has been our ongoing collaboration and interaction with Lung Foundation Australia, University of Queensland, Monash University, QIMR-Berghofer and the Australian IPF Registry. Individual collaborations included Jonathon McQualter (RMIT) and Joseph Powell (University of Queensland Institute of Biomedical Research).



DR. BRENDAN O'SULLIVAN

HOW A 'LUNG ATLAS' COULD PREVENT REJECTION

In a world where there are no blank spaces left on the map, it can feel like there is nothing left to explore. No new continents to discover. While every corner of the globe seems to be mapped within an inch of its life, many parts of our own body remain a mystery. Enter the research scientist: the new explorers of our age.

Dr Brendan O'Sullivan's latest expedition is to map the cell types that make up our lungs. "The problem at the moment is no-one knows what the different cell types are within the lung," Dr O'Sullivan said. "It can make it difficult for physicians to diagnose lung transplant rejections when the different cell types and their functions are not fully understood".

Creating a 'Lung Atlas' is the first stage of a larger research project in developing a way to suppress the immune system in lung transplant patients. Currently, 50% of lung transplant patients experience rejection within 5 years of surgery. Part of the problem is the immunosuppressant drugs that post-transplant patients take to prevent lung rejection. Because of these drugs, the patients may have a higher risk of developing skin cancers, lymphoma and other sorts of cancers.

From Dr O'Sullivan's research, it is hoped that lung rejection could be prevented through the delivery of nanoparticles to the lungs using an aerosol spray. It could also be possible for diagnostic labs to be able to run quick, inexpensive tests using algorithms to detect infections and lung transplant rejections earlier.

Knowing that he is doing his research with The Prince Charles Hospital Foundation is important to Dr O'Sullivan. "It's probably one of the best research places that you could work in ... where I am now are the resources available to make a difference". A key advantage to research here is that researchers have timely access to those patients willing to participate in research and to their entire health team of physicians, surgeons and nurses.

Proximity of the labs to patient samples plays a key role in the research. "We can get the cells straight into the lab and start analysing them straight away," Dr O'Sullivan said. The analysis involves state of the art, single-cell RNA sequencing technology which has been described as the 'Hubble Telescope' of the cellular world. It is an innovative, powerful technique helping to clarify the exact role that each cell plays in both healthy and dysfunctional lungs.

"This new technology is incredible; you take 10,000 cells and for every single one of these cells, you can look at all of the 20,000 genes and understand what they are doing. It's giving us insights into cells that we've never had before," explains Dr O'Sullivan. In the past, it could take approximately six months to sequence one gene, whereas using the latest RNA sequencing technique it only takes a few days to map out 20,000 genes in thousands of individual cells.

As the research progresses, more patient samples are being collected to help to fill in the blank spaces on the 'Lung Atlas'. Like the explorers of old, researchers face a journey into the unknown with the chance to change the world. The Prince Charles Hospital Foundation is proud to support the work of Dr O'Sullivan on his expedition towards improving the quality of life and survival rates for patients with incurable lung disease.

HEAD OF RESEARCH GROUP

Dr Deanne Curtin

KEY MEMBERS OF RESEARCH GROUP

Dr Irene Szollosi
Dr Deanne Curtin
Dr James Douglas
Dr George Tay
Dr Peter Robinson
Dr James Anderson
Geoff Doyle
Carl Downey
Greg Jorgensen
Elyse Wozencroft
Gemma Brown
Lynn Hoey
Nicola Dunn
Dr John Goddard
Dr Dan Henderson
Jan Robinson
Jennie Fry

Dr George Tay

SLEEP HEALTH RESEARCH GROUP

The aim of the Sleep Health Research Group is to improve people's lives through clinical research that broadens our understanding of sleep disorders and deliver evidence-based treatment in clinical practice. The Sleep Disorders Centre supports people with sleep related breathing disorders such as Obstructive Sleep Apnoea (OSA) and in-patient groups with complex medical needs that may influence their sleep health, such as those with neuromuscular disorders, pulmonary diseases or those experiencing mental health disorders.

The importance of good sleep, both in quantity and quality is increasingly recognised as a key contributer to health and wellbeing. Specific sleep disorders such as OSA can impair cognitive, function causing depressed mood, lack of concentration, memory loss and decreased reaction times. Daytime sleepiness also has wide ranging social impacts such as increased risk of accident or injury and loss of productivity. In addition, there is long standing evidence that sleep disorders may increase the risk of cardiovascular disease and emerging evidence suggesting a bidirectional link between sleep disorders and dementia.

Quality sleep is vital to health and quality of life. It is our group's goal to ensure those with sleep disorders have access to the best possible treatments. With effective treatments, we can improve an individual's overall wellbeing and reduce their risk of developing long-term health risks associated with poor sleep. Greater awareness of sleep disorders in the community is creating a much larger need for sleep diagnosis and treatment services, and as a result the demand for research is growing. Our group is interested in determining the clinical utility of sleep screening tools in various populations and developing clinical pathways that make the diagnosis of sleep disorders effective and accessible, so we can ultimately bring more people to treatment.

HIGHLIGHTS

Our work in 2017 was focused around the delivery of four key studies. The biggest achievement of our group was in the outcome of our study evaluating a new simple diagnostic tool for obstructive sleep apnoea. The new tool used in this study showed that we have the potential to reduce our laboratory diagnostic studies by 30%, giving us vast potential to reduce patient wait times and the cost of treatment. The next step for this study is to implement the tool with regional patients to determine if we can improve access to diagnostic services with the use of sleep screening devices sent out to patients' homes.

We were excited to have completed the data collection phase of a study looking at co-morbid Insomnia and Sleep Apnoea. This was a multi-site randomised control study to examine the benefit of Cognitive Behavioural Therapy for Insomnia in addition to using continuous positive airway pressure to manage OSA. The outcomes of this study will be available in 2018.

In 2017, we also commenced two projects that could have the potential to influence treatment and clinical care for the groups included in the study. The first is a service development survey for patients who have neuromuscular disease, and the second is a feasibility study screening for obstructive sleep apnoea in inpatients with schizophrenia. The results of these studies will have the potential to inform the care management processes for these patients and we look forward to publishing the results in due course.

PRESENTATIONS AND PUBLICATIONS

We presented three projects at the Australasian Sleep Association's Annual Conference in Auckland, New Zealand. A paper on mortality in acute non-invasive ventilation was published in *Internal Medicine Journal*.

RESEARCH COLLABORATIONS

The CoMISA study was made possible in 2017 and continues to be supported by collaborations with the Adelaide Institute for Sleep Health, Flinders Centre for Research Excellence, Flinders University of South Australia, Adelaide Sleep Health, Southern Adelaide Local Health Network, Repatriation General Hospital and The University of Queensland.


Sleep Monitoring
The Dream Team

HEAD OF RESEARCH GROUP

Prof Kwun Fong

KEY MEMBERS OF RESEARCH GROUP

A/Prof Rayleen Bowman
Prof Ian Yang
Dr Felicia Goh
Dr Henry Marshall
Maria Martins
Hannah O'Farrell
Linda Passmore
Elizabeth McCaul
Deborah Courtney
Jacci Brady
Pamela Fung
Eloise Shaw
Janet Shaw
Brielle Paris
Annalicia Vaughan

Prof Ian Yang

UNIVERSITY OF QUEENSLAND THORACIC RESEARCH CENTRE

The goal of the University of Queensland Thoracic Research Centre is to improve the health of people at risk of, or affected by, lung disease. We focus on delivering clinical and translational research in the areas of prevention and early detection and endeavor to find new treatment options. Our work also contributes to the important public health conversation about lung health and what measures can be taken to lower the risk of lung disease in the community.

We take a multi-directional approach with projects across a broad spectrum covering lung cancer, mesothelioma and respiratory diseases such as asthma and chronic obstructive pulmonary disease (COPD). Our key studies are investigating lifestyle interventions in lung disease, smoking cessation, innovation in detection procedures, new bronchoscopy techniques, genetic research to find personalised treatments and new drug therapies.

Ultimately, our research is driven by the need to improve lung health in the community and save more lives. Lung diseases are often hard to treat, meaning research into prevention and early detection is critical. Our ethos is to bring patients, clinicians and scientists together effectively and efficiently not only so critical patients have access to treatments that could save their life, but also so we are delivering improved lung health for the entire community.

HIGHLIGHTS

We were honored to have opened the Australian Cancer Research Foundation's Centre for Lung Cancer Early Detection at The Prince Charles Hospital to drive forward significant research in the field of early detection of lung cancer. This represents an exciting culmination of the ongoing support we have received from Australian Cancer Research Foundation and University of Queensland as part of our groundbreaking collaboration.

In 2017, we were acknowledged internationally for our research using our Nanostring device with an invitation to present some recent findings at the World Conference on Lung Cancer in Japan. We purchased the state-of-the-art Nanostring device in 2016 and it is already enabling our research team to break new ground in detecting important genetic changes in lung cancer patients.

A final highlight for us was in an asthma study we carried out in collaboration with researchers Australia-wide and with tremendous support by patient volunteers. We completed a new clinical trial looking at an innovative drug therapy with the results subsequently chosen for inclusion in esteemed medical journal 'The Lancet'.

PRESENTATIONS AND PUBLICATIONS

We have contributed to many different publications in respiratory medicine and sciences, specifically relating to lung cancer, mesothelioma, COPD, asthma, air pollution and other lung conditions in 2017.

AWARDS

Prof Ian Yang was awarded a Metro North Australia Day Award for excellence in educating and nurturing Queensland's next generation of medical staff to provide high quality health care in a challenging world.

STUDENTS

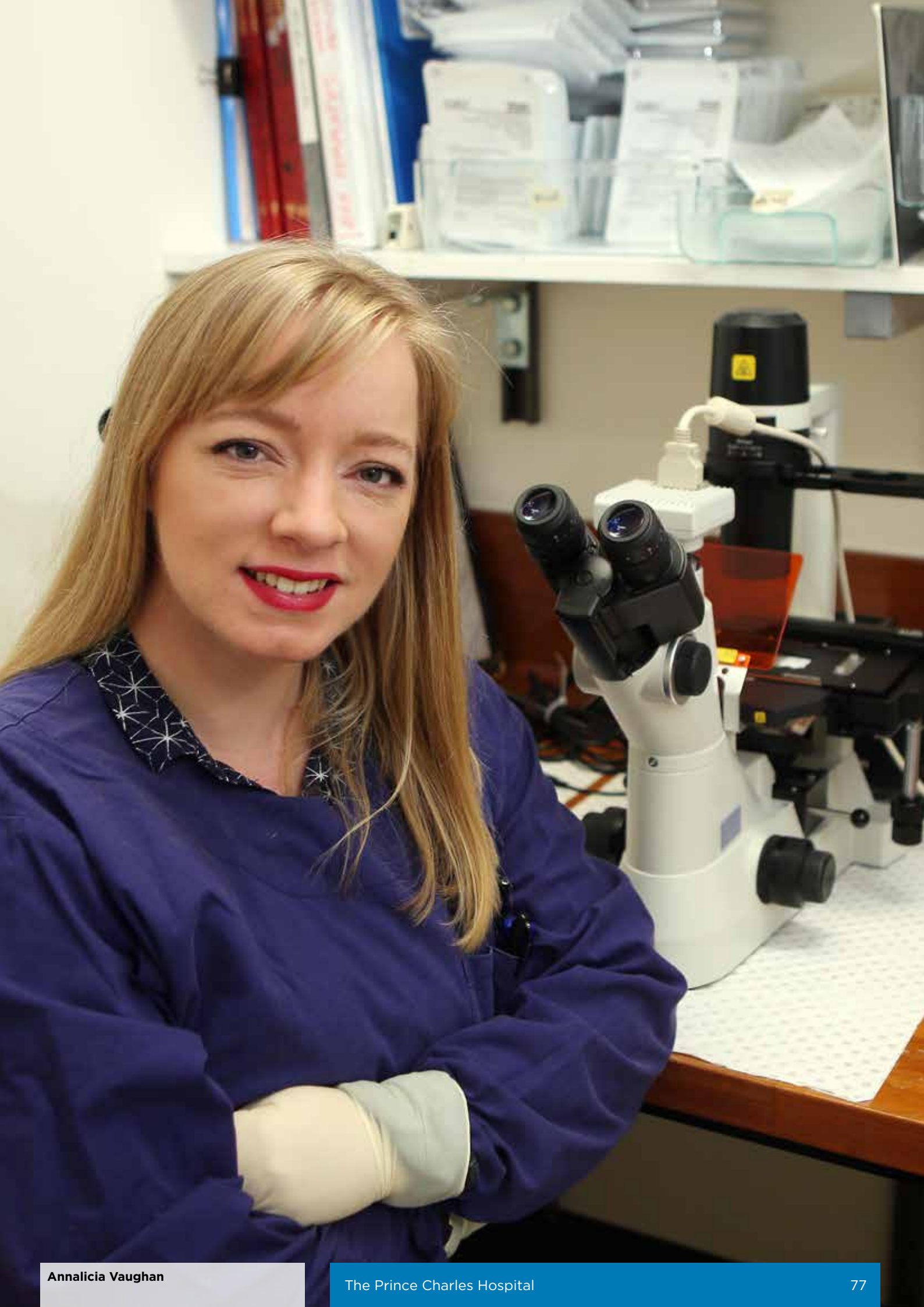
During 2017 we supervised 13 Honours, Masters and PhD students.

RESEARCH COLLABORATIONS

Our Centre is pleased to have continued productive collaborations state-wide with Queensland Institute of Medical Research-Berghofer, International Air Quality Laboratory, University of Queensland, Lung and Allergy Research Centre, Princess Alexandra Hospital and Diamantina Institute.

Nationally, our collaborating partners included Fiona Stanley Hospital, Sir Charles Gairdner Hospital, John Hunter Hospital, Children's Cancer Institute Australia, Lung Foundation Australia, Royal Adelaide Hospital, University of Melbourne, Royal Melbourne Hospital, St Vincent's Hospital, Lowy Cancer Research Centre, University of New South Wales, CSIRO and Australian eHealth Research Centre.

We also continued our international work with Brock University (Canada), University of British Columbia (Canada), British Columbia Cancer Agency, University of Hong Kong (China) University of Texas (USA), Howard Hughes Medical Institute and The Cancer Genome Atlas Project.



Annalicia Vaughan

TPCH FOUNDATION GRANTS 2017

GRANT TYPE	RECIPIENT	TITLE	AMOUNT AWARDED IN 2017
Emerging Researcher Grant	Eleonore Bolle	Improving the Skin-Driveline Interface to Reduce Ventricular Assist Device Driveline Infections	$24,212.00
Emerging Researcher Grant	Dr Andrew Burke	A pharmacokinetic study of antibiotics for the treatment of mycobacterial infection in patients with cystic fibrosis	$24,675.00
Emerging Researcher Grant	Sam Liao	Optimisation of endothelial cell migration on bilayered scaffolds in a bioreactor for a novel suture-less inflow cannula	$24,906.45
Emerging Researcher Grant	Weilan Mo	PDE2 controls ventricular arrhythmias in heart failure patients	$24,924.00
Emerging Researcher Grant	Brielle Parris	Prospective Clinical Profiling of Non-Small-Cell Lung Cancer Patients to guide Genotype-Tailored Treatments using NanoString Technology	$24,921.00
Emerging Researcher Grant	Eloise Shaw	Tissue Microarrays for High Throughput Screening of Immune Checkpoint Molecules	$24,900.00
Emerging Researcher Grant	Eric Wu	Talking Heart to Bionic Heart: Towards an Intelligent Rotary Blood Pump to Improve Left Ventricular Function	$24,973.76
Equipment Grant	Dr Nicole Bartnikowski	Transonic Perivascular Flow Probe	$5,865
Equipment Grant	Prof Scott Bell	Ageing drum to measure cough/ breathing particles from human subjects	$16,770
Equipment Grant	A/Prof Dan Chambers	BD LSRFortessa X-20 Flow Cytometer	$30,000
Equipment Grant	Dr Rohit Gupta	-86°C Ultra-Low Temperature Chest Freezer	$11,990
Equipment Grant	Andrew Hislop	Lafayette Instrument 01165 Manual Muscle Testing (MMT) Device	$1,685
Equipment Grant	Maria Martins	Ultra-Low Temperature Upright Freezer	$15,000
Equipment Grant	A/Prof Peter Molenaar	Stimulator and recorder to measure heart contractility	$47,314
Equipment Grant	Prof Norman Morris	PhysioFlow	$28,375
Equipment Grant	Dr Jo Pauls	PIV Laser and Camera	$25,000
Equipment Grant	Clayton Semenzin	Brookfield Engineering LVDV2T Viscometer with Wells/Brookfield Cone and Plate Attachment	$9,429
Equipment Grant	Eloise Shaw	CFX384 Touch™ Real-Time PCR Detection System	$30,000
Equipment Grant	Dr Jacky Suen	-86°C Upright Ultra-Low Temperature Freezers	$16,490
Equipment Grant	Dr James Walsh	Lafayette Manual Muscle Tester 01165 and shipping	$1,705

GRANT TYPE	RECIPIENT	TITLE	AMOUNT AWARDED IN 2017
Innovation and Capacity Building Grant	Amanda Corley	Determining the prevalence of ECMO-related infections and describing novel ways to reduce it	$20,000
New Investigator Grant	Santosh Adiraju	Changes in the Pharmacokinetics of Drugs Administered to Patients during Cardiopulmonary bypass: a Pilot Observational Study	$9,994.40
New Investigator Grant	Dr James Anderson	Prevalence of obstructive sleep apnoea in heavily sedated inpatients with schizophrenia and schizoaffective disorder	$10,000.00
New Investigator Grant	Rebekah Barry	Is exercise capacity related to hospitalisation in adults with cystic fibrosis?	$6,475.78
New Investigator Grant	Annabelle Benton	Determining the rheology of perioperative cardiogenic emboli associated with transcatheter aortic valve implantation using Magnetic Resonance Imaging	$9,953.31
New Investigator Grant	Tamara Blake	Spirometry and fractional exhaled nitric oxide (FeNO) reference values for Indigenous Australians	$9,969.48
New Investigator Grant	Alice Boone	Development of a Novel Intraventricular Balloon Pump for Low Cost Mechanical Circulatory Support of Patients with Left Ventricular Failure	$9,999.42
New Investigator Grant	Michael Cavaye	Complement system activation during contemporary extracorporeal membrane oxygenation (ECMO) in an ex-vivo model	$9,928.02
New Investigator Grant	Maria da Gloria Delpra	Improving Motor Learning and Motor Perfomance in the Intensive Care Setting Using Action Observation	$9,938.00
New Investigator Grant	Lisa Franks	Comparing the physical characteristics of positive expiratory pressure (PEP) devices	$9,979.39
New Investigator Grant	Benedict Fraser	Nitric oxide scavenging in extracorporeal membrane oxygenation (ECMO): How ECMO induced haemolysis can result in vasoconstriction	$9,995.00
New Investigator Grant	Kristy Garrick	Optimisation and adaptation of a suture-less cannula for rapid implantation of biventricular assist devices	$9,998.83
New Investigator Grant	Lisa Goldsmith	A Qualitative Study of Lung Cancer Risk Perceptions and Smoking Beliefs Among Participants in the International Lung Screening Trial	$9,759.56

GRANT TYPE	RECIPIENT	TITLE	AMOUNT AWARDED IN 2017
New Investigator Grant	Tenelle Hodson	Exploring the transition to home experience for people with mild stroke under two models of careis	$8,820.00
New Investigator Grant	Katrina Hopcraft	CT assessment of osteoporosis in a lung cancer screening cohort: Adding value to lung cancer screeningss	$10,000.00
New Investigator Grant	Josephine Lovegrove	Assessment of pressure injury risk and intervention planning for hospitalised patients: a comparison of nurses' clinical judgement with and without the use of a standardised pressure injury risk assessment tool	$9,796.18
New Investigator Grant	Martin Mapley	A Low Cost Bearingless Drive for the OpenHeart Rotary Ventricular Assist Device	$9,875.79
New Investigator Grant	Janice Reid	Genomic tracking of heart failure via cell-free RNA mapping	$9,992.92
New Investigator Grant	David Sellers	Point prevalance study investigating ECMO cannulae related infection rates in Australia and New Zealand	$9,908.32
New Investigator Grant	Clayton Semenzin	Design and Validation of a Predictive Computational Fluid Dynamics Model of the OpenHeart Ventricular Assist Device	$9,999.62
New Investigator Grant	Annette Sultana	Characterisation of anti-HLA class I mediated transfusion-related acute lung injury (TRALI) using an in vitro microvasculature model	$10,000.00
New Investigator Grant	Dr George Tay	MODULATE-CF – Regional health care professional on-line education and resource sub-study	$8,500.00
New Investigator Grant	Michelle Tsui	Investigation of adrenomedullin and endothelin-1 mediated cardiovascular injury in sepsis	$9,830.00
New Investigator Grant	Matthew Wells	Myocardial substrate utilisation and ATP dynamics in an ovine model of heart transplantation after brain stem death	$9,798.20
PhD scholarships	Salma Charania	Living with the effects of MND (Motor Neurone Disease): The impacts of communication disorders on the person with MND and their carers	$53,368
PhD scholarships	Kristy Garrick	Optimisation and adaptation of a suture-less cannula for rapid implantation of biventricular assist devices	$80,052
PhD scholarships	Dr Rohit Gupta	Establishment of a clinical hepatology database and serum bank to study factors associated with chronic liver disease and hepatic encephalopathy	$53,368
PhD scholarships	Dr Monica Ng	The effect of blood product storage at the blood-endothelium interface	$26,684
PhD scholarships	Annette Sultana	A comparative study of the mechanisms that contribute to the development of transfusion-related acute lung injury (TRALI)	$26,684
Research Fellowships	Dr Nicole Bartnikowski	Saving the right heart - How to operate a left ventricular assist device to maintain right ventricular function	$100,000

GRANT TYPE	RECIPIENT	TITLE	AMOUNT AWARDED IN 2017
Research Fellowships	Dr Brendan O'Sullivan	Nanoparticles to induce tolerance in human lung transplantation	$100,000
Research Fellowships	Dr Indira Prasadam	Innovative nutraceutical approach for improved prevention and treatment of osteoarthritis disease	$100,000
Research Fellowships	Dr Louise See Hoe	The Dead Heart Project: When is a 'dead heart' truly dead?	$100,000
Research Fellowships	Annalicia Vaughan	High-fibre diet and short chain fatty acids as immune regulators in COPD: a potential novel therapy	$100,000
Team Grant	Critical Care Research Group	Bench, bedside, and beyond: a translational research programme to improve outcomes for patients suffering critical illness	$200,000
Team Grant	IHBI Cartilage and Skeletal Biology Research Group	Development of effective prevention and treatments for metabolic osteoarthritis	$100,000
Team Grant	Innovative Cardiovascular Engineering and Technology Laboratory (ICETLAB)	Using engineering, biology and medicine to develop the next generation of mechanical circulatory support	$200,000
Team Grant	Qld Lung Transplant Research Program	Prevention and treatment of idiopathic and post-transplant pulmonary fibrosis	$200,000
Team Grant	The Adult Cystic Fibrosis Centre Multi-disciplinary Research Team	A multi-modality, multi-disciplinary program of research to improve disease outcomes in cystic fibrosis	$200,000
Team Grant	The Prince Charles Hospital Community Gut and Liver Research Group	Improving Gastroenterology Outcomes Through Clinical Research.	$100,000

RESEARCH GRANTS

CHIEF INVESTIGATORS	GRANTING AGENCY	PROJECT TITLE	YEARS OF FUNDING	TOTAL FUNDING AWARDED	FUNDING RECEIVED FOR 2017	GRANT TYPE
Adiraju	TPCH Foundation	Changes in the Pharmacokinetics of Drugs Administered to Patients during Cardiopulmonary bypass: a Pilot Observational Study	2017	$9,994	$9,994	New Investigator Grant
Anderson	TPCH Foundation	Screening for sleep disordered breathing in an in-patient mental health population	2017	$10,000	$10,000	New Investigator Grant
Balmain, Sabapathy, Morris, McFarland, Simmonds	Griffith University, Menzies Health Institute	The effects of folic acid supplementation on mental health in patients with heart failure.	2017	$6,900	$6,900	Project Grant
Barry	TPCH Foundation	The relationship between exercise capacity and hospitalisation in adults with cystic fibrosis.	2017	$6,476	$6,476	New Investigator Grant
Bartnikowski	TPCH Foundation	Transonic Perivascular Flow Probe	2017	$5,865	$5,865	Equipment
Bartnikowski	TPCH Foundation	Saving the right heart - How to operate a left ventricular assist device to maintain right ventricular function	2017	$300,000	$100,000	Fellowship
Bell	AHPOQ	The SIMPLE Approach to managing inpatient malnutrition	2016-2018	$119,391	$100,000	Project Grant
Bell	TPCH Foundation	Evaluating the impact of oral pre-operative carbohydrate supplementation in acute hip fracture inpatients: a randomised controlled trial feasiblity study	2016-17	$24,193	$15,000	Emerging Researcher Grant
Bell	TPCH Foundation	Ageing drum to measure cough/breathing particles from human subjects	2017	$16,770	$16,770	Equipment
Bellet, N., Fish, A., Lister, G., Baker, A., Tronstad, O. Murphy, M., Jane Lah, M., Longmire, A.	MNHHS QLD Health	Physiotherapy Assistant Clinical Training (PACT) project	2017	$15,000	$15,000	Project Grant

CHIEF INVESTIGATORS	GRANTING AGENCY	PROJECT TITLE	YEARS OF FUNDING	TOTAL FUNDING AWARDED	FUNDING RECEIVED FOR 2017	GRANT TYPE
Bellet, N., Tolmie, Harris, Shardlow, de Beer, Barber, Wintala, McCormack, Bourke, Simpson, Leonard, Scroop-March, Wilson	Physiotherapy Advisory Forum Queensland grant	Physiotherapy Assistant Clinical Training (PACT) project	2016-2017	$5,000	$5,000	Project Grant
Benton	TPCH Foundation	Determining the rheology of perioperative cardiogenic emboli associated with transcatheter aortic valve implantation using Magnetic Resonance Imaging	2017	$9,953	$9,953	Project Grant
Blake	TPCH Foundation	Spirometry and fractional exhaled nitric oxide (FeNO) reference values for Indigenous Australians	2017	$9,969	$9,969	New Investigator Grant
Bloderer P, Lazzarini PA, Clark D, Warnock J	QUT Engagement Innovation Grant	Engaging People with Diabetic Foot Ulcers in Self-Care through Mobile Visual Analytics	2017-2018	$29,995	$29,995	Project Grant
Bolle	TPCH Foundation	Improving the Skin-Driveline Interface to Reduce Ventricular Assist Device Driveline Infections	2017-2018	$24,212	$24,212	Emerging Researcher Grant
Boone	TPCH Foundation	Development of a Novel Intraventricular Balloon Pump for Low Cost Mechanical Circulatory Support of Patients with Left Ventricular Failure	2017	$9,999	$9,999	Project Grant
Boyd	TPCH Foundation	When is it safe to exercise mechanically ventilated patients in the ICU? An evaluation of consensus recommendations in a cardiothoracic setting.	2015-2017	$8,214	$8,214	New Investigator Grant

CHIEF INVESTIGATORS	GRANTING AGENCY	PROJECT TITLE	YEARS OF FUNDING	TOTAL FUNDING AWARDED	FUNDING RECEIVED FOR 2017	GRANT TYPE
Brown, Graves, Rowell, Walpole, Marlton, Wood, Fong, Yang, O'Byrne, White, Gordon, Elston, Baxter, Pennisi, Finnane, McInerney-Leo, Philpot, Moore	QHGA	Bringing Modern Genomics to the Management of Lung Cancer in Queensland	2017	$600,000	$0	Project
Burke	TPCH Foundation	A pharmacokinetic study of antibiotics for the treatment of mycobacterial infection in patients with cystic fibrosis	2017	$24,675	$24,675	Emerging Researcher Grant
Cavaye	TPCH Foundation	Complement system activation during contemporary extracorporeal membrane oxygenation (ECMO) in an ex-vivo model	2017	$9,928		Project Grant
Chambers D	NHMRC/ TPCH Foundation	BD Fortessa Flow Cytometer	2017	$230,000	$230,000	Equipment
Chambers D	Office of Health and Medical Research, Queensland Health		2012-2017	$750,000	$125,000	Fellowship
Chambers D, Hopkins P, Lim R, Wallace E	TPCH Foundation	First-in-man study of amniotic epithelial stem cell therapy for idiopathic pulmonary fibrosis	2016-2017	$94,561	$94,561	Project Grant
Chambers D, Hopkins P, Westall G, Holmes M, Glanville A	NHMRC	Conquering the final frontier in lung transplantation – Mesenchymal stromal cell therapy for chronic lung allograft dysfunction	2016-2020	$1,887,790	$38,569	Project Grant
Chambers D, Hopkins P, Yerkovich S	TPCH Foundation	Protecting the glycocalyx to improve lung transplant outcomes	2014-2017	$156,253	$195,610	Program Grant
Chambers D, Hopkins P, Yerkovich S	TPCH Foundation	Taking stem cell therapy to the clinic – is reprogramming alveolar macrophages the key?	2016-2017	$99,832	$99,832	Project Grant
Chambers D, Hopkins P, Yerkovich S, Sinclair K	TPCH Foundation	Idiopathic pulmonary fibrosis – A disease of stem cell dysfunction?	2016-2017	$80,648	$80,648	Project Grant

CHIEF INVESTIGATORS	GRANTING AGENCY	PROJECT TITLE	YEARS OF FUNDING	TOTAL FUNDING AWARDED	FUNDING RECEIVED FOR 2017	GRANT TYPE
Chambers D, Hopkins P, Yerkovich S, Sladden T	TPCH Foundation	Fixing broken lungs : Next generation ex-vivo lung perfusion	2016-2017	$72,248	$72,248	Project Grant
Charania	TPCH Foundation	Living with the effects of MND (Motor Neurone Disease): The impacts of communication disorders on the person with MND and their carers	2017-2018	$53,368	$53,368	Phd Scholarship
Cooper, Schembri, Blaskovich, Butler, Fraser, Beatson, Roberts, Paterson, Zuegg, Alexandrov	NHMRC	Membrane-active antibiotics against multi-drug resistant Gram negative bacteria	2016 - 2019	$942,299	$300,000	Project Grant
Corley	TPCH Foundation	Determining the prevalence of ECMO-related infections and describing novel ways to reduce it	2017	$20,000	$20,000	Project Grant
Crawford	ARC Discovery Project	One shot three-dimensional reconstruction of human anatomy and motion	2017	$144,516	$144,516	Project Grant
Crawford	Arthritis Australia - Arthritis Queensland Fellowship	Breaking Obesity - Osteoarthritis Connection: Novel Targets and Strategies	2017	$25,000	$25,000	Project Grant
Crawford	Australia-India Strategic Research Fund	New class of intelligent robotic imaging system for keyhole surgeries	2017	$995,977	$995,977	Project Grant
Crawford	Australian Academy of Technological Sciences and Engineering (ATSE)	Commercialization and Clinical Translation of Bone Biomaterials	2017	$7,000	$7,000	Project Grant
Crawford	NHMRC	Engineering an Osteochondral Tissue for Cartilage Defect Repair	2017	$211,724	$211,724	Project Grant
Crawford	NHMRC Project Grant	Coupling an injectable gel and MSC microtissues to enhance cartilage repair	2017	$219,344	$219,344	Project Grant
Crawford	TPCH Foundation	Donation for Chair in Orthopaedic Research	2017	$384,111	$384,111	Project Grant
Crawford	TPCH Foundation	miRNAs as a Therapeutic Target for Osteoarthritis	2017	$99,353	$99,353	Project Grant
Crawford	TPCH Foundation	Hypercholestermia as a Risk Factor for OA	2014-2017	$450,824	$450,824	Project Grant

CHIEF INVESTIGATORS	GRANTING AGENCY	PROJECT TITLE	YEARS OF FUNDING	TOTAL FUNDING AWARDED	FUNDING RECEIVED FOR 2017	GRANT TYPE
Critical Care Research Group	TPCH Foundation	Bench, bedside, and beyond: a translational research programme to improve outcomes for patients suffering critical illness	2017-2020	$600,000	$100,000	Project Grant
Cruikshank, M., Bellet, N	MNHHS QLD Health	Physiotherapy Defined Scope of Practice (Prescribing)	2017	$81,084	$81,084	Project Grant
Davison	TPCH Foundation	High flow nasal cannula (HFNC) treatment for viral bronchiolitis: a randomised control trial to investigate the effect of carbon dioxide (CO2) levels.	2015-2018	$6,494	$6,494	Project Grant
Delpra, G.	TPCH Foundation	Improving Motor Learning and Motor Performance in the Intensive Care Setting Using Action Observation	2017-2018	$9,938	$9,938	New Investigator Grant
Donnelly, T; Tronstad, O; Fraser, J	Extracorpreal Life Support Organisation	ECMO and Diaphragm Atrophy	2016-2017	$5,000	$5,000	Project Grant
d'Udekem, Radford	NHMRC	Giving an adult life after Fontan surgery to those with the most severe congenital heart conditions	2013-2018	$1,250,181	$1,250,181	Partnership Grant
Eeles, Chan, Sanson-Fisher, Boyes, Mansfield, Reis, Deeming, Henskens, Holliday, Attia, Coda	NMHRC Dementia Boost Grant	A multi-component web based intervention to improve the wellbeing of people with dementia and their carers: a randomised controlled trial	2017-2019	$1,312,455	$400,000	Project Grant
Fanning	Heart Foundation	Determining the rheology of cardiogenic emboli through collaboration with USyd and Texas Heart	2017	$5,000	$5,000	Travel Grant
Featherston J, Lazzarini PA, Canning K	Sunshine Coast Health Foundation	Monitoring foot skin temperatures in people with a history of diabetic foot complications	2016-2017	$9,488	$9,488	Project Grant
Ferrier, R., Lamont, A. Bellet, N	Allied Health office, QLD Health	Post-Orthopaedic Surgical Review clinics – primary contact physiotherapy service in fractured neck of femur and total hip replacement	2017-2019	$154,769		Project Grant
Fong	NHMRC	NHMRC Practitioner Fellowship	2012-2017	$404,250	$80,850	Fellowship
Fong, Bowman, Marshall, Al Yang	NHMRC	Project - optimising screening for lung cancer	2016-2021	$3,032,884	$600,000	Project

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Fong, Bowman, Marshall, Yang	ACRF	Equipment and Infrastructure	2016-2017	$1,000,000	$1,000,000	Equipment Grant
Fong, Bowman, Marshall, Yang	UQ	Equipment and Infrastructure	2016-2017	$250,000	$250,000	Equipment Grant
Fong, Bowman, Moeller, Hughes, Goh, Yang, Larsen, Godbolt	TPCH Foundation	Clinical trial validation of a blood exosome-prognosticator in lung cancer	2017	$95,811	$95,811	Project
Franks	TPCH Foundation	Comparing the physical characteristics of positive expriatory pressure devices	2017-2018	$9,979	$9,979	New Investigator Grant
Fraser	MNHHS	Post-Doctoral Scientist Funding	2017	$120,000	$120,000	Fellowship
Fraser	TPCH Foundation	Nitric oxide scavenging in extracorporeal membrane oxygenation (ECMO): How ECMO induced haemolysis can result in vasoconstriction	2017	$9,995	$9,995	Project Grant
Fraser, Gregory	NHMRC	Centre for Research Excellence in advanced cardio-respiratory therapies improving organ support (ACTIONS)	2014-2019	$2,491,450	$500,000	Project Grant
Fraser, Gregory, Shekar, Olive, Platts, Thomson, Bull	TPCH Foundation	Advanced Cardio-respiratory Therapies Improving OrgaN Support (ACTIONS)	2014 - 2017	$600,000	$200,000	Project Grant
Fulbrook, Jessup, Kinnear	Queensland Health: SEED	Ambulance retrieval: What factors are involved in the decision to transport an emergency patient to hospital	2016-2017	$23,349	$23,349	Project Grant
Garrick	TPCH Foundation	Optimisation and adaptation of a suture-less cannula for rapid implantation of biventricular assist devices	2017-2018	$10,000	$10,000	New Investigator Grant
Garrick	TPCH Foundation	Suture-less cannula design for rapid implantation of rotary blood pumps	2017-2020	$80,052	$26,684	Phd Scholarship
Gibson	NHMRC CRE	National Clinical Centre of Research Excellence in Severe Asthma	2016-2020	$2,498,171	$0	Cre
Goldsmith	TPCH Foundation	A Qualitative Study of Lung Cancer Risk Perceptions and Smoking Beliefs Among Participants in the International Lung Screening Trial	2017	$9,760	$9,760	New Investigator Grant
Green, Colebourne, Kearney, Thompson	LINK Innovation	BISCUT: Better Individualised Stroke Care Using Technology	2017-2018	$170,125	$0	Link Innovation

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Gregory	Advance QLD	Decreasing complications with mechanical hearts through improved implantation techniques	2017-2019	$180,000	$60,000	Fellowship
Gregory	TPCH Foundation	Partnership support for Advanced Queensland Research Fellowship for decreasing complications with mechanical hearts through improved implantation techniques	2017-2019	$75,000	$25,000	Fellowship
Gupta	TPCH Foundation	-86°C Ultra-Low Temperature Chest Freezer	2017	$11,990	$11,990	Equipment
Gupta	TPCH Foundation	Establishment of a clinical hepatology database and serum bank to study factors associated with chronic liver disease and hepatic encephalopathy	2017-2018	$53,368	$53,368	Phd Scholarship
Hall, K., Bellet, N., Roll, M., Cobb, R., Bell, S.	QLD Health HPRS QRPN	Evaluation of the utilization of an allied health assistant within an adult Cystic Fibrosis Centre: their role and scope of practice and benefits to improved patient related physiotherapy outcomes.	2015-2017	$68,612	$68,612	Project Grant
Hewetson, Cornwell, Shum	Queensland Speech Pathology Legacy Fund	Cognitive-communicaiton impairment post right hemisphere stroke, imnpact on social participation and quality of life	2015-2017	$10,000	$10,000	Research Grant
Hickling, Hopkins, Trotter, Chambers, Bell, Walsh	CAHLRI	Use of body composition compared to standard nutritional assessments to inform lung transplant decisions and patient outcomes	2018	$9,054	$9,054	Scholarship
Hislop, A.	TPCH Foundation	Hip function in people with knee OA: A cross-sectional study	2017	$1,600	$1,600	Equipment Grant
Hodson	TPCH Foundation	Exploring the transition to home experience for people with mild stroke under two models of careis	2017	$8,820	$8,820	New Investigator Grant
Holland, A., Chambers D	NHMRC	Ambulatory oxygen for interstitial lung disease	2018	$1,503,718	$0	Project Grant
Hollis, Bell, Franz	SEED	Impact of a pre-operative VLCD weight loss program on unfavourable surgical outcomes in general surgical patients: a feasibility study	2016	$29,990	$15,000	Seed

CHIEF INVESTIGATORS	GRANTING AGENCY	PROJECT TITLE	YEARS OF FUNDING	TOTAL FUNDING AWARDED	FUNDING RECEIVED FOR 2017	GRANT TYPE
Hopcraft	TPCH Foundation	CT Assessment of Osteoporosis in a Lung Cancer Screening Cohort: Adding Value to Lung Cancer Screening	2017	$10,000	$10,000	New Investigator
Horvarth	SEED Innovation	Endocarditis Database and Biobank	2016-2017	$113,526	$113,526	Seed Innovation
IHBI Cartilage and Skeletal Biology Research Group	TPCH Foundation	Development of effective prevention and treatments for metabolic osteoarthritis	2017-2020	$300,000	$200,000	Project Grant
Innovative Cardiovascular Engineering and Technology Laboratory (ICETLAB)	TPCH Foundation	Using engineering, biology and medicine to develop the next generation of mechanical circulatory support	2017-2020	$600,000	$100,000	Project Grant
Keller, Bell	Canadian Frailty Network	More-2-Eat: Nutrition care pathway for malnourished elderly patients	2015-2017	$899,963		Canadian Government Partner
Khanna R, Chambers D, Campbell S, Smith C	NHMRC	Multipathogen adoptive immunotherapy for post-transplant virus-associated diseases	2016-2019	$725,180	$0	Project Grant
Kinnear F	TPCH Foundation	Capacity Building Grant	2012-2017	$75,000	$75,000	Project Grant
Lai, M.	Queensland Rehabilitation Physiotherapy Network (QRPN)	Does the de Morton Mobility Index (DEMMI) outcome measure show a clinically meaningful change and is ti predictive of length of stay and discharge destination when applied in the Geriatric Evaluation and Management (GEM) Unit Setting?	2016-2017	$2,000	$2,000	Project Grant
Lazzarini PA	NHMRC	The incidence and predictors of foot disease hospitalisation	2018-2022	$322,952	$322,952	Fellowship
Lazzarini PA, Clark D, Warnock J	QUT	Engaging patients with diabetic foot ulcers in their care away from the clinic	2016-2017	$6,595	$6,595	Project Grant
Lazzarini PA, Kinnear EM	Wound CRC	Establishing Diabetic Foot Australia: Phase 2	2016-2017	$359,933	$359,933	Project Grant
Liao	Deutscher Akadmeischer Austauschdients	DAAD Research Grants - Short-Term Grants 2017	2017	$7,350	$7,350	Travel Grant
Liao	TPCH Foundation	Refinement of bilayered scaffolds for a novel suture-less inflow cannula for left ventricular assist devices	2017-2018	$24,679	$24,679	Emerging Researcher Grant

CHIEF INVESTIGATORS	GRANTING AGENCY	PROJECT TITLE	YEARS OF FUNDING	TOTAL FUNDING AWARDED	FUNDING RECEIVED FOR 2017	GRANT TYPE
Love	TPCH Foundation	Development and validation of a tablet-based screening tool for right hemisphere cognitive communication deficits within an acute stroke setting.	2016 - 2017	$23,900	$23,900	Research Grant
Lovegrove	TPCH Foundation	Assessment of pressure injury risk and intervention planning for hospitalised patients: a comparison of nurses' clinical judgement with and without the use of a standardised pressure injury risk assessment tool	2017-2018	$9,796	$9,796	New Investigator Grant
Low Choy, N., Lamont, A., Williams, R., Morrison, G.	ACU	Vestibular, Balance and Mobility Research Clinics at TPCH	2013-2017	$27,340	$27,340	Project Grant
Mahero, Bell	CAHRLI	Nutrition in stroke patients	2016-2017	$10,000	$10,000	Scholarship
Mahoney	TPCH Foundation	Effects of pre-operative inspiratory muscle and physical exercise training on cardiac surgical outcomes in high risk elders	2016-2017	$9,803	$9,803	New Investigator Grant
Mapley	TPCH Foundation	A low cost bearingless drive for the OpenHeart rotary ventricular assist device	2017-2018	$9,876	$9,876	New Investigator Grant
Martins	TPCH Foundation	Ultra-Low Temperature Upright Freezer	2017	$15,000	$15,000	Equipment
McCormack	TPCH Foundation	Does percutaneous NMES application to the Quadriceps muscle in critically ill patients undergoing ECMO via femoral cannulation potentially affect vascular viability of the foot?	2015-2017	$6,949	$6,949	New Investigator Grant
McDermid, Bell, Mahero	AHPOQ	Implementation and evaluation of a Multi-site Acute Stroke Nutrition Care Pathway	2018-2019	$26,059	$26,059	Project Grant
Miles	TPCH Foundation	Fast screening of patients that present to the emergency department following a fall: a feasibility and prevalence study	2016-2018	$9,762	$9,762	New Investigator Grant
Mo	TPCH Foundation	PDE2 controls ventricular arrhythmias in heart failure patients	2017	$24,924	$24,924	Emerging Researcher Grant
Molenaar	TPCH Foundation	Stimulator and recorder to measure heart contractility	2017	$47,314	$47,314	Equipment

CHIEF INVESTIGATORS	GRANTING AGENCY	PROJECT TITLE	YEARS OF FUNDING	TOTAL FUNDING AWARDED	FUNDING RECEIVED FOR 2017	GRANT TYPE
Moore	Health Practitioner Research Scheme	Implementation and evaluation of a multi-site acute stroke nutrition care pathway	2017-2018	$26,059	$26,059	Project Grant
Morris, Seal	QLD Office for Health and Medical Research	Exercise Training in Pulmonary Hypertension (ExTra_PH): A Randomised Controlled Trial of Exercise Training in Pulmonary Hypertension	2015-2017	$247,000	$150,000	Project Grant
Morris, N.R., Walsh J., Seale, H.	TPCH Foundation	PhysioFlow Equipment for measuring cardiac outut	2017	$28,000	$28,000	Equipment Grant
Ng	TPCH Foundation	The effect of blood product storage at the blood-endothelium interface	2017	$26,684	$26,684	Phd Scholarship
O'Sullivan	TPCH Foundation	Nanoparticles to induce tolerance in human lung transplantation	2018-2020	$300,000	$50,000	Fellowship
Parris	TPCH Foundation	Prospective Clinical Profiling of Non-Small-Cell Lung Cancer Patients to guide Genotype-Tailored Treatments using NanoString Technology	2017	$24,921	$24,921	Emerging Researcher Grant
Pauls	TPCH Foundation	PIV Laser and Camera	2017	$25,000	$25,000	Equipment Grant
Prasadam	TPCH Foundation	Innovative nutraceutical approach for improved prevention and treatment of osteoarthritis disease	2017	$300,000	$100,000	Fellowship
Probyn	TPCH Foundation	Implementation and evaluation of new method of obtaining a urine specimen in non toilet-trained children in the emergency department.	2015-2018	$3,190		Project Grant
Qld Lung Transplant Research Program	TPCH Foundation	Prevention and treatment of idiopathic and post-transplant pulmonary fibrosis	2017-2020	$600,000	$200,000	Project Grant
Reid	TPCH Foundation	Genomic tracking of heart failure via cell-free RNA mapping	2017	$9,993	$9,993	New Investigator Grant
Reid DW, GJ Anderson, IL Lamont, SC Bell, DF Frazer, CE Wainwright	NHMRC	Abnormal lung iron homeostasis in Cystic Fibrosis	2014-2018	$629,661	$200,000	Project Grant
Royse, Scott, Shehata, Mazer, Fraser	NHMRC	Transfusion Triggers in Cardiac Surgery Australia trial (TRICS-III)	2015-2018	$1,379,436	$500,000	Project Grant

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Sabapathy, Morris, Balmain.	Griffith University	To the heart of the matter – Human ventricular-arterial mechanical coupling in response to an acute afterload stress.	2017	$8,100	$8,100	Project Grant
Scalia, Walters	TPCH Foundation	CATHARSIS	2017	$83,000	$83,000	Project Grant
See Hoe	Advance Queensland	Maternity Leave Funding for HTx Investigator Louise See Hoe	2017	$13,000	$13,000	Fellowship
See Hoe	TPCH Foundation	The Dead Heart Project: When is a 'dead heart' truly dead?	2017-2020	$300,000	$100,000	Fellowship
Semenzin	TPCH Foundation	Design and Validation of a Predictive Computational Fluid Dynamics Model of the OpenHeart Ventricular Assist Device	2017-2018	$10,000	$10,000	New Investigator Grant
Shaw	TPCH Foundation	Tissue Microarrays for High Throughput Screening of Immune Checkpoint Molecules	2017	$24,900	$24,900	Emerging Researcher Grant
Shaw	TPCH Foundation	CFX384 Touch™ Real-Time PCR Detection System	2017	$30,000	$30,000	Equipment
Skelton	TPCH Foundation	Falls knowledge survey	2014-2018	$5,000	$5,000	Project Grant
Suen	TPCH Foundation	Forma 906 -86C Upright Ultra-Low Temperature Freezer	2017	$16,490	$16,490	Equipment
Sultana	TPCH Foundation	Characterisation of anti-HLA class I mediated transfusion-related acute lung injury (TRALI) using an in vitro microvasculature model	2017	$10,000	$10,000	Project Grant
Sultana	TPCH Foundation	A comparative study of the mechanisms that contribute to the development of transfusion-related acute lung injury (TRALI)	2017	$26,684	$26,684	Phd Scholarship
Sutt	NHMRC	Towards an improved understanding of the effect of a speaking valve on lung volumes and communication in the critically ill tracheostomised patient	2016-2017	$45,000	$45,000	Scholarship
Sutt	TPCH Foundation	Towards an improved understanding of the effect of a speaking valve on lung volumes and communication in the critically ill tracheostomised patient	2014-2017	$76,176	$76,176	Phd Scholarship

CHIEF INVESTIGATORS	GRANTING AGENCY	PROJECT TITLE	YEARS OF FUNDING	TOTAL FUNDING AWARDED	FUNDING RECEIVED FOR 2017	GRANT TYPE
Tay G	TPCH Foundation	Evaluation of a new simple diagnostic tool for obstrucive sleep apnea	2017	$10,000	$10,000	New Investigator Grant
Tay G, D. Reid, D. Smith	Vertex	MObile Device Utilisation Lifting Adherence and Treatment Engagement in Cystic Fibrosis	2017	$74,000	$74,000	Project Grant
The Adult Cystic Fibrosis Centre Multi-disciplinary Research Team	TPCH Foundation	A multi-modality, multi-disciplinary program of research to improve disease outcomes in cystic fibrosis	2017-2020	$600,000	$200,000	Project Grant
The Prince Charles Hospital Community Gut and Liver Research Group	TPCH Foundation	Improving Gastroenterology Outcomes Through Clinical Research.	2017-2020	$300,000	$100,000	Project Grant
Thompson, Chaudhuri, Fraser	SEED Innovation	Development of a Subspeciality App	2017-2018	$53,000	$0	Seed Innovation
Tsui	TPCH Foundation	Investigation of adrenomedullin and endothelin-1 mediated cardiovascular injury in sepsis	2017	$9,830	$9,830	Project Grant
Upham, Simpson, Grainge, Gibson, Yang, Boscoe, Radford	NHMRC	Anti-viral immune dysfunction in severe asthma varies across inflammatory phenotypes	2017-2019	$997,153	$0	Project
Vaughan	TPCH Foundation	High-fibre diet and short chain fatty acids as immune regulators in COPD: a potential novel therapy	2017	$300,000	$100,000	Fellowship
Vaughan, Yang, Fong, Bowman	UQ Faculty of Medicine	-80 degree Celsius freezer with racks/trays and a liquid nitrogen tank	2017	$24,300	$24,300	Equipment Grant
Walsh	TPCH Foundation	Equipment Grant	2017	$1,705	$1,705	Equipment Grant
Wells	TPCH Foundation	Myocardial substrate utilisation and ATP dynamics in an ovine model of heart transplantation after brain stem death	2017	$9,798	$9,798	New Investigator Grant
Wilson, Rakic, Gregory	UQ	Validation of realtime emboli detection using laser feedback interferometry	2017	$38,318		Project Grant
Wu	Advance QLD	Smart' Heart Assist Device	2016-2019	$45,000	$15,000	Scholarship

CHIEF INVESTIGATORS	GRANTING AGENCY	PROJECT TITLE	YEARS OF FUNDING	TOTAL FUNDING AWARDED	FUNDING RECEIVED FOR 2017	GRANT TYPE
Wu	TPCH Foundation	Talking heart to bionic heart: Towards an intelligent rotary blood pump to improve left ventricular function	2017-2018	$24,974	$24,974	Emerging Researcher Grant
Wu	UQ	International Travel - Conference of International Society for Mechanical Circulatory Support - Tucson Arizona USA	2017	$2,000	$2,000	Travel Grant
Yang	UQ	School of Medicine Leadership Research Support	2016-2017	$100,000	$100,000	Project Grant
Yang, Bowman, Fong	TPCH Foundation	Mobile health for COPD	2016-2017	$99,540	$99,540	Project Grant
Yang, Bowman, Fong	TPCH Foundation	Detection of microbial pathogens using quantitative polymerase chain reaction (qPCR) in patients with acute exacerbations of COPD	2017	$99,958	$99,958	Project Grant
Yang, Reid, Krause	Australian Respiratory Council Harry Windsor Grant	Using the lung microbiome to predict response to continuous antibiotics in COPD	2016-2017	$49,457	$49,457	Project Grant
Yang, Reid, Simpson, Krause	NHMRC	Testing the lung microbiome to predict risk of frequent exacerbations in COPD	2017-2019	$666,052	$222,000	Project Grant
Young	AusHSI	PG000811: The SIMPLE Approach: realigning resources to reduce low value services to improve nutritional care of acute hospital patients	2016-2018	$34,000	$25,000	Aushsi Partnership Grant

HIGHER RESEARCH DEGREE STUDENTS

NAME	POST-GRADUATE COURSE	RESEARCH PROJECT TITLE	UNIVERSITY AFFILIATION	SUPERVISORS
Anas Ababneh	PhD	The effect of an educational program and self-monitoring on improving adherence for Removable Cast Walkers (RCWs) and wound healing in patients with Diabetic Foot Ulcers (DFUs)	Queensland University of Technology	Edwards H, Peter Lazzarini
Santosh Adiraju	PhD		The University of Queensland	Sussan Ghassabian, Kiran Shekar, John Fraser
Julie Adsett	PhD	Aquatic exercise for patients with stable heart failure	Griffith University	Norm Morris, Alison Mudge, Suzanne Kuys, Jenny Paratz
Davies Ainslie	PhD	Risk factors for diabetic peripheral neuropathy study	Queensland University of Technology	Reed L, Peter Lazzarini
Mohamed Alshyyab	PhD	Safety culture in the emergency department	Queensland University of Technology	Gerald FitzGerald
Ann Alverado	MRes	Biofilm in diabetic foot ulcers study	Queensland University of Technology	Huygens F, Peter Lazzarini
Ashmitha AR	Honours Dietetics	Carbohydrate counting accuracy in individuals with Cystic Fibrosis related diabetes (CFRD) in an inpatient setting.	Queensland University of Technology	Jenna Stonestreet
Amanda Baker	MPhil	Patient centered principals in goal setting practices in rehabilitation.	Griffith University	Petrea Cornwell, Norm Morris
Bryce Balmain	PhD	ThermoreGriffith University latory responses to exercise in the heat in heart failure	Griffith University	Norm Morris, Surendran Sabapathy
Eleonore Bolle	PhD	An infection-resistant driveline for ventricular assist devices	Queensland University of Technology	Tim Dargaville, Shaun Gregory
Alice Boone	PhD	Development and evaluation of an intraventricular balloon pump	Griffith University University	Geoff Tansley, Shaun Gregory
Jemima Boyd	MMR	Haemodynamic tolerance of cardiac surgical patients with inotropic dependence in upright positiong	Griffith University	James Walsh
Kate Burton	MPhil	Physical activity levels and inflammatory amongst adults with cystic fibrosis.	Griffith University	Norm Morris, Suzanne Kuys, D Smith
Dr Liam Byrne	PhD		Australian National University	John Fraser
Michael Cavaye	Hons		The University of Queensland	John Fraser, Jacky Suen
Kelly Chee	PhD	Next generation sequencing analysis of thoracic malignancies - optimisation of bioinformatics for somatic variant identification and validation strategies towards personalised therapy	The University of Queensland	Rayleen Bowman; Kwun Fong; Ian Yang

NAME	POST-GRADUATE COURSE	RESEARCH PROJECT TITLE	UNIVERSITY AFFILIATION	SUPERVISORS
Gregory Couzens	PhD	The Role of Wrist Motors in Carpal Stability	Queensland University of Technology	Ross Crawford
Dr Marissa Daniels	PhD	Molecular diagnosis and characterisation of lung cancer	The University of Queensland	Kwun Fong; Ian Yang; Rayleen Bowman; Sunil Lakhani
Leoneard de Seng	Hons	Exploring treatment adherence in diabetic foot ulcer patients in their care away from the clinic – a qualitative study	Queensland University of Technology	Peter Lazzarini, Jason Warnock
Annette Dent	PhD	Lung cancer; Diagnostic potential of VOCs in respiratory disease; Exhaled breath volatile organic compounds in lung disease.	The University of Queensland	Ian Yang; Kwun Fong; Rayleen Bowman; Sunil Lakhani
Saba Farnaghi	PhD	Role of hypercholesterolemia in osteoarthritis development	Queensland University of Technology	Ross Crawford
Malindu Fernando	PhD	Diabetic foot ulcer biomechanical study	James Cook University	Jonathan Golledge, Peter Lazzarini
Rebecca Ferrier	MPhil	Improving Function and Mobility after Hip Fracture Surgery – impact of physiotherapy within an integrated model of care	Australian Catholic University	Nancy Low Choy
Ann Finnimore	PhD	PD Check-In: Supporting people with Parkinson's Disease in self-managed maintenance of communication following intensive treatment.	University of Queensland	Anna Rumbach
Lisa Franks	PhD	Comparing the physical characteristics of positive expiratory pressure devices	Griffith University	Norm Morris, Kathleen Hall, James Walsh
Jennifer Gabriel	Postgrad	The Incidence, Perception, and Management of Post-operative Cognitive Decline in Surgical Patients	The University of Queensland	Cath Haslam, Donna Pinskey
Ashlen Garrett	Hons		The University of Queensland	John Fraser, Jacky Suen
Kristy Garrick	PhD	A suture-less cannula for biventricular assist device support	Griffith University University	Geoff Tansley, Shaun Gregory
Stephanie Gettens	Master of Philosophy	Psychological factors affecting falls	Australian Catholic University	Paul Fulbrook, Nancy Low Choy, Melanie Jessup
Kathleen Hall	PhD	Evaluation of the utilization of an allied health assistant within an adult Cystic Fibrosis Centre: their role and scope of practice and benefits to improved patient related physiotherapy outcomes.	Australian Catholic University	Suzanne Kuys
Katharine Heathcoate	PhD	Surviving traumatic physical injury: quantifying the socio-ecological factors related to health, and well-being and recovery	Griffith University	Jing Sun, Norm Morris
Ronelle Hewetson	PhD	Profiling the communication impairment arising from right hemisphere stroke: A preliminary investigation of linGriffith University istic, extra-linGriffith University istic, cognitive, and neurological correlates	Griffith University University	Petrea Cornwell

NAME	POST-GRADUATE COURSE	RESEARCH PROJECT TITLE	UNIVERSITY AFFILIATION	SUPERVISORS
Andrew Hislop	MPhil	Does targeted hip strengthening improve pain function, quality of life in people with osteoarthritis? Systematic Review	The University of Queensland	Adam Semciw
Raymond Ho	PhD	Numerical evaluation of cardiopulmonary bypass adult aorta cannulation: A neurological implication	Queensland University of Technology	Zhiyong Li, Shaun Gregory
Greta Hollis	MPhil	Investigating the feasibility of implementing a preoperative VLCD program into the general surgery model of care	The University of Queensland	J.Bauer; J. Bell
Rong Huang	PhD	The role of MSCs in immunoreGriffith University lation of macrophages during osteogenesis	Queensland University of Technology	Ross Crawford
Tracey Kaczmarek	MRes	Effects of Training Podiatrists in Motivational Interviewing	Queensland University of Technology	Peter Lazzarini, Jason Warnock
Rebecca Kelly	MPhil	Quadriceps strength predicts estimates of physical activity post-heart transplantation	Griffith University	Norm Morris, James Walsh
Pattie King	Masters Dietetics	Enteral tube feeding in hip fracture: a qualitative evaluation of patient perspectives	The University of Queensland	Jack Bell, Sally Fraser
Kimmi Ko	PhD	Using human factors to improve patient training with ventricular assist devices	University of Sydney	Cara Wrigley, Shaun Gregory
Sharon Kwiaktowski	PhD	Investigation of home-based exercise for severe COPD	Griffith University	Norm Morris, Suzanne Kuys, L Laasko
Ariel Lackoff	Honours Dietetics	Is malnutrition independently associated with adult inpatients falls at a tertiary hospital? A quality audit	Queensland University of Technology	Kat Stevenson, Jack Bell, Donna Hickling
Petra Lawrence	PhD	A randomised controlled trial of a psychosocial brief intervention for emergency department attendees with moderate psychological stress	Australian Catholic University	Paul Fulbrook
Jessica LeDunn	PhD	Designing ventricular assist device wearable components for all users	University of Sydney	Cara Wrigley, Shaun Gregory
Rui Jia Lee	Honours Dietetics	When 'healthy' becomes iatrogenic – restrictive diets in older nutritionally at risk inpatients	Queensland University of Technology	Jack Bell, Kai Elmas
Maggie Lee	Hons	Investigating the bouts of physical activity of people with diabetic foot ulcers.	Queensland University of Technology	Peter Lazzarini
Kim Leow	Hons	The national incidence of foot disease-related hospitalisation in Australia	Queensland University of Technology	Peter Lazzarini
Sam Liao	PhD	The interaction between left ventricular assist devices and intraventricular flow: an in silico evaluation	Queensland University of Technology	Mia Woodruff, Shaun Gregory
Dr Aaron Lin	PhD	Evaluation of Right Ventricular Contractile Reserve and the Impact of Exercise Training in Pulmonary Arterial Hypertension using Novel Ultra-fast Cardiac Magnetic Resonance Imaging Acquisition	Griffith University University	Norman Morris; Wendy Strugnell; Christian Hamilton-Craig

NAME	POST-GRADUATE COURSE	RESEARCH PROJECT TITLE	UNIVERSITY AFFILIATION	SUPERVISORS
Amanda Love	PhD	Development and validation of a tablet-based screening tool for right hemisphere cognitive communication deficits within an acute stroke setting.	Griffith University University	Petrea Cornwell
Josephine Lovegrove	Honours	Pressure injury risk assessment & prescription of interventions	Australian Catholic University	Paul Fulbrook; Sandra Miles
Juliette Mahero	MPhil	Are stroke inpatients engaged in their nutrition care	The University of Queensland	J.Bauer; J. Bell
Martin Mapley	PhD	A low cost magnetic drive system for rotary blood pumps	Griffith University University	Andrew Busch, Shaun Gregory
Salman Marvi	Masters	Biomechanical rationale of episiotomy for removal of uncemented femoral components.	Queensland University of Technology	Ross Crawford
Vainess Mbuzi	Doctor of Philosophy	Evaluation of Indigenous cardiac patients and their families' experiences	Australian Catholic University	Paul Fulbrook; Melanie Jessup
Michael McAuliffe	PhD	Alteration of the Coronal Plane Soft Tissues of the Knee by Osteoarthritis and Total Knee Arthroplasty and the Impact of this on Surgical Outcomes.	Queensland University of Technology	Ross Crawford
Bridie McCann	Master of Health Administration	Fast screening falls in the emergency department	Australian Catholic University	Paul Fulbrook; Sandra Miles
Sandra Miles	PhD	Sensory and motor interventions for very early school-age children: A cluster pragmatic randomised controlled trial examining effect on development, behaviour and academic learning outcomes.	Australian Catholic University	Paul Fulbrook
Dr Johnny Millar	PhD		The University of Queensland	Danny McAuley, John Fraser
Weilan Mo	PhD	b-adrenoceptor mediated contractility in human heart:- control by phosphodiesterases	Queensland University of Technology	Peter Molenaar
Emma Munro	Masters Dietetics	Is malnutrition a predictor of prevalent skin tears in hospital inpatients? A descriptive study.	The University of Queensland	Jack Bell, Donna Hickling
Dr Monica Ng	PhD		The University of Queensland	John Fraser
Wei Leng Ng	Honours Dietetics	Evaluating the concurrent validity of malnutrition risk measures in older hospital inpatients – an audit of point prevalence data	Queensland University of Technology	Jack Bell, Donna Hickling
Dr Nchafatso Obonyo	PhD		The University of Queensland	John Fraser
Lauren O'Connor	MPhil	Use of Passy-Muir Valves as an adjunct to physiotherapy in ICU.	Griffith University	Jenny Paratz, Norm Morris
Dr Jeffery Overington	MPhil	Electronic snapshot for COPD	The University of Queensland	Ian Yang; Kwun Fong; Rayleen Bowman;
Barbara Page	PhD	Telehealth in the paradigm of lung cancer multidisciplinary care	The University of Queensland	Kwun Fong; Ian Yang; Rayleen Bowman
Tatiana Paim	MPhil	An investigation of physical activity level of older adults attending outpatient rehabilitation	Australian Catholic University	Suzanne Kuys
Brielle Parris	PhD	Lung cancer genomics	The University of Queensland	Kwun Fong, Rayleen Bowman, Ian Yang

NAME	POST-GRADUATE COURSE	RESEARCH PROJECT TITLE	UNIVERSITY AFFILIATION	SUPERVISORS
Jo Pauls	PhD	Passive control of biventricular assist devices	Griffith University University	Geoff Tansley, Shaun Gregory
Maureen Peasey	MPhil	Pulmonary Rehabilitation and Physical Activity in COPD	Griffith University	Norm Morris, James Walsh
Alison Peeler	Doctor of Philosophy	Provision of a new paediatric service: an investigation of staff and emergency department attendees perceptions and experience of the transition from an adult emergency department	Australian Catholic University	Paul Fulbrook; Fran Kinnear
Kodchanipa Phonpruk	PhD	Parents' understanding of information provided during a paediatric emergency department admission	Australian Catholic University	Karen Flowers; Paul Fulbrook
Dr Marsus Pumar	MPhil	Treatment of anxiety and depression in patients with respiratory disease	The University of Queensland	Ian Yang; Kwun Fong; Rayleen Bowman; Sunil Lakhani
Kay Ramsay	PhD	Diversity of environmental and clinical Pseudomonas aeruginosa isolates	The University of Queensland	Scott Bell, Timothy Kidd, David Reid, David Whiley
Janice Reid	Hons		The University of Queensland	John Fraser, Jacky Suen
Antonia RuJia Sun	PhD	Is synovial inflammation a link between obesity and osteoarthritis?	Queensland University of Technology	Ross Crawford
Cathy Saxon	Master of Nursing Research	Patients experiences of bronchoscopy with 'cautious' sedation.	Australian Catholic University	Paul Fulbrook
Sunderajhan Sekar	PhD	Effects of dietary saturated fatty acids on the onset and progression of osteoarthritis in knee joints	Queensland University of Technology	Ross Crawford
Clayton Semenzin	PhD	Computational evaluation of rotary blood pump hydraulic design	Griffith University University	Geoff Tansley, Shaun Gregory
Eloise Shaw	PhD	Tissue microarrays for lung cancer	The University of Queensland	Prof Fong; with Prof Yang; A/Prof Rayleen Bowman; Sunil Lakhani
Janet Shaw	PhD	Lung microbiome in COPD	The University of Queensland	Ian Yang; Kwun Fong; Rayleen Bowman; Sunil Lakhani
Adrian Singh	MRes	Social determinants of diabetic foot disease study	Queensland University of Technology	Turrel G, Peter Lazzarini
Dr Timothy Sladden	PhD	The role of endothelial glycocalyx breakdown in human lung transplantation and the establishment of a porcine model to study mechanisms and evaluate therapeutic interventions	The University of Queensland	Daniel Chambers, Stephanie Yerkovich
Emily Sneath	MPhil	COPD emergency department presentations	The University of Queensland	Ian Yang, Phil Masel, Rayleen Bowman, Kwun Fong
Andrew Stephens	PhD	Development of a low-drift pressure sensor for ventricular assist devices	Griffith University University	Geoff Tansley, Shaun Gregory
Ashleigh Stevenson	Hons		The University of Queensland	John Fraser, Jacky Suen

NAME	POST-GRADUATE COURSE	RESEARCH PROJECT TITLE	UNIVERSITY AFFILIATION	SUPERVISORS
Anna-Liisa Sutt	PhD	Towards an improved understanding of the effect of a speaking valve on lung volumes and cmmmunication in the critically ill tracheostomised patient	University of Queensland	John Fraser, Petrea Cornwell
Samuel Tait	BSc Hons	Lung microbiome and gene expression in COPD	The University of Queensland	Ian Yang; Kwun Fong; Rayleen Bowman;
Sian Yan (Serene) Tan	Honours Dietetics	How does estimated energy intake compare to estimated energy rquirements in potential lung transplant candidates?	Queensland University of Technology	Donna Hickling, Emily Rameta
Fergal Temple	Hons		The University of Queensland	Monica Ng, Jacky Suen, John Fraser
Annalicia Vaughan	PhD	Diesel exposure to bronchial epithelial cells	The University of Queensland	Ian Yang; Kwun Fong; Rayleen Bowman;
Clare Villalba	PhD	Dissecting the role of sphingosine 1-Phosphate – Spgingosine 1-Phosphate Receptor 1 in inflammatory bone remodelling	Queensland University of Technology	Ross Crawford
Yansheng Wang	Master of Health Administration	Skin tear prevalence	Australian Catholic University	Paul Fulbrook; Sandra Miles
Matthew Wells	PhD		Griffith University University	John Fraser
Elizabeth World	Honours Dietetics	Prevalence of food insecurity in outpatients with chronic obstructive pulmonary disease (COPD).	Queensland University of Technology	Jack Bell
Eric Wu	PhD	Physiological control of rotary blood pumps to encourage myocardial recovery	The University of Queensland	Shaun Gregory, John Fraser, Geoff Tansley
Yuqi Zhang	PhD	Burden of diabetic foot disease and cost-effectiveness of optimal care	Queensland University of Technology	Norman R, Peter Lazzarini

PUBLICATIONS

Adsett, J., Morris, N., Kuys, S., Hwang, R., Mullins, R., Khatun, M., Paratz, J. and Mudge, A. (2017). Aquatic Exercise Training is Effective in Maintaining Exercise Performance in Trained Heart Failure Patients: A Randomised Crossover Pilot Trial. *Heart Lung Circ* 26(6): 572-579.

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Asmussen, S., Przkora, R., Maybauer, D.M., Fraser, J.F., Sanfilippo, F., Jennings, K., Adamzik, M. and Maybauer, M.O. (2017). Meta-Analysis of Electroacupuncture in Cardiac Anesthesia and Intensive Care. *J Intensive Care Med*: doi: 10.1177/0885066617708558.

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Balmain, B.N., Sabapathy, S., Jay, O., Adsett, J., Stewart, G.M., Jayasinghe, R. and Morris, N.R. (2017). Heart Failure and Thermoregulatory Control: Can Patients With Heart Failure Handle the Heat? *J Card Fail* 23(8): 621-627.

Barnett, A.G., Stewart, I., Beevers, A., Fraser, J.F. and Platts, D. (2017). Thermal clothing to reduce heart failure morbidity during winter: a randomised controlled trial. *BMJ Open* 7(10): e017592.

Beck, L., Mohamed, A.A., Strugnell, W.E., Bartlett, H., Rodriguez, V., Hamilton-Craig, C. and Slaughter, R.E. (2018). MRI measurements of the thoracic aorta and pulmonary artery. *J Med Imaging Radiat Oncol* 62(1): 64-71.

Bell, S.C. (2017). Early Intervention of Cystic Fibrosis Pulmonary Exacerbations Based on Home Monitoring. eICE through the Looking Glass. *Am J Respir Crit Care Med* 196(9): 1090-1092.

Bell, S.C., Castellani, C. and Flume, P.A. (2017). *J Cyst Fibros* 16(1): 6.

Bell, S.C., Castellani, C. and Flume, P.A. (2017). Learning's from the Editors Desk - 2017. *J Cyst Fibros* 16(6): 645-646.

Bell, S.C. and Flume, P.A. (2017). Treatment decisions for MRSA in patients with cystic fibrosis (CF): when is enough, enough? *Thorax* 72(4): 297-299.

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Buratto, E., Daley, M., Ye, X.T., Radford, D.J., Alphonso, N., Brizard, C.P., d'Udekem, Y. and Konstantinov, I.E. (2018). Propensity score matched analysis of partial atrioventricular septal defect repair in infancy. *Heart* 104(12): 1014-1018.

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Chambers, D.C., Enever, D., Lawrence, S., Sturm, M.J., Herrmann, R., Yerkovich, S., Musk, M. and Hopkins, P.M. (2017). Mesenchymal Stromal Cell Therapy for Chronic Lung Allograft Dysfunction: Results of a First-in-Man Study. *Stem Cells Transl Med* 6(4): 1152-1157.

Chambers, D.C., Yusen, R.D., Cherikh, W.S., Goldfarb, S.B., Kucheryavaya, A.Y., Khusch, K., Levvey, B.J., Lund, L.H., Meiser, B., Rossano, J.W., Stehlik, J., International Society for, H. and Lung, T. (2017). The Registry of the International Society for Heart and Lung Transplantation: Thirty-fourth Adult Lung And Heart-Lung Transplantation Report-2017; Focus Theme: Allograft ischemic time. *J Heart Lung Transplant* 36(10): 1047-1059.

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Chapman, S.J., McKavanagh, D., Burge, M.E., McPherson, I., Walpole, E. and Hollingworth, S.A. (2017). Effectiveness of bevacizumab and cetuximab in metastatic colorectal cancer across selected public hospitals in Queensland. *Asia Pac J Clin Oncol* 13(5): e253-e261.

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Cheng, Q., Lazzarini, P.A., Gibb, M., Derhy, P.H., Kinnear, E.M., Burn, E., Graves, N. and Norman, R.E. (2017). A cost-effectiveness analysis of optimal care for diabetic foot ulcers in Australia. *Int Wound J* 14(4): 616-628.

Chin, M., Aaron, S.D. and Bell, S.C. (2017). The treatment of the pulmonary and extrapulmonary manifestations of cystic fibrosis. *Presse Med* 46(6 Pt 2): e139-e164.

Chu, K.H., Howell, T.E., Keijzers, G., Furyk, J.S., Eley, R.M., Kinnear, F.B., Thom, O., Mahmoud, I. and Brown, A.F. (2017). Acute Headache Presentations to the Emergency Department: A Statewide Cross-sectional Study. *Acad Emerg Med* 24(1): 53-62.

Chu, K.H., Keijzers, G., Furyk, J.S., Eley, R.M., Kinnear, F.B., Thom, O.N., Howell, T.E., Mahmoud, I., Ting, J.Y.S. and Brown, A.F.T. (2017). Applying the Ottawa subarachnoid haemorrhage rule on a cohort of emergency department patients with headache. *Eur J Emerg Med* doi: 10.1097/MEJ.0000000000000523.

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Corley, A., Rickard, C.M., Aitken, L.M., Johnston, A., Barnett, A., Fraser, J.F., Lewis, S.R. and Smith, A.F. (2017). High-flow nasal cannulae for respiratory support in adult intensive care patients. *Cochrane Database Syst Rev* 5: CD010172.

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