Living & Breathing

Research

2015

THE PRINCE CHARLES HOSPITAL FOUNDATION

Contents

If you think research is expensive, try disease!

CHAIR OF THE PRINCE CHARLES HOSPITAL RESEARCH COUNCIL

PROFESSOR JOHN FRASER

If you think research is expensive, try disease!

This is the trade-off, the fine balancing act we need to juggle. How much do we invest into medical research and how much do we invest into the care and treatment for those with chronic disease?

It is this question that we look to answer every day here at The Prince Charles Hospital and why I am so proud to be part of a research community that is working on both sides of that equation.

Our Doctors, Nurses, allied health workers and scientists have the attitude that if we see an opportunity to make things better, both in the short to medium term for our patients, and more broadly developing long term solutions that have global impacts, then we will find a way to do it. We want to deliver the best care today but at the same time we are making things better for tomorrow.

To do this we need a number of things to occur. We need brilliant, passionate and determined staff. We need the support of the Hospitals executive, we need to reduce red tape, we need the support of the community to fund this work and most importantly we need the input and support of our brave patients.

In the past few years we have been battling red tape and the never-ending search for financial support. These are the two most limiting factors to our work. We are fortunate to have the support of The Prince Charles Hospital Foundation that is working hard to champion this cause, and to inspire the general public to contribute to this life-saving work.

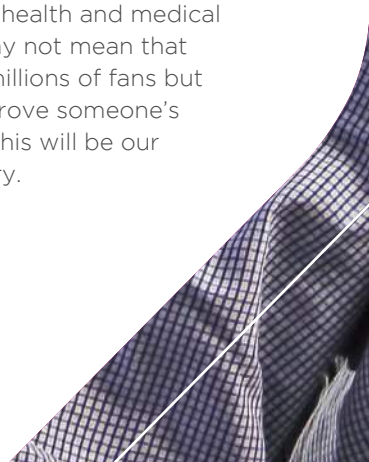
The red tape is a continual frustration but I am delighted that the administration of both The Prince Charles Hospital and the Metro North Hospital and Health Service is now firmly in place, and there is growing optimism around how this will make the delivery of medical research more efficient and remove the barriers to success.

In the past year this relatively small campus has punched above its weight in not only delivering important research but also establishing careers in this field. It is my dream that every doctor, nurse, allied health worker, wardie and administrator asks the question "How can I make things better?" and seriously considers undertaking research. To challenge the status quo, to not accept defeat and to put in the effort will result in something truly special, and something we are all passionate about, to save and improve lives.

In 2015 in the national rugby league grand finals we saw how one man, Jonathan Thurston, captured the imagination of not only a nation but received international coverage. On a stage with millions watching this proud indigenous man stepped up to save the game for his team and in extra time kicked a field goal which won the match. One man with the highest expectations on himself who had practiced for this moment all his life was able to deliver. This man, this game, transcended sport – it gave hope to a region and inspired those who have no interest in rugby league.

This moment happened in an instant, but it took many thousands of hours of practice, over many years to perfect the skills and prepare the mind. This dedication, this preparation is what research requires. The success is not immediate, we will suffer our share of defeats but this preparation, this dogged determination, will pay off one day.

This example is one that I hope can be reflected by those who will undertake health and medical research. It may not mean that you will gain millions of fans but you could improve someone's life... forever. This will be our greatest victory.



Professor John Fraser, Chair TPCH Research Council

THE PRINCE CHARLES HOSPITAL FOUNDATION

Patients at the core of research

THE PRINCE CHARLES HOSPITAL EXECUTIVE DIRECTOR

ANTHONY WILLIAMS

Research is imperative to the excellent patient-centred health care provided at The Prince Charles Hospital. Since commencing in my role as Executive Director earlier this year, I have been impressed and inspired by the enthusiasm and dedication of research teams in their ventures to challenge current health care practices and thoughts with new ideas and methods that aim to address local patient care issues here at TPCH, as well as broader health concerns impacting people across the globe.

The Prince Charles Hospital is strongly committed to keeping research at the forefront of our core daily business. I would like to acknowledge all those who support and participate in research at this hospital, in particular the staff from across all disciplines and programs who dedicate their time to this area. I would also like to thank TPCH Research Council for their role in driving initiatives to enable research; the Research, Ethics and Governance team for their ongoing leadership, advice and support to researchers; and TPCH Foundation for their tireless efforts in funding and promoting TPCH based research.

As we look to the future, we will continue to foster the success of our current research program through ongoing collaboration with our major health providers, universities and academic partners, as well as other leading health centres both throughout Australia and internationally.

I look forward to embracing new opportunities that enable current and future research activities to flourish, and ultimately lead to improved health outcomes for our patients.

Anthony Williams, Executive Director, The Prince Charles Hospital

People powering medical research

THE PRINCE CHARLES HOSPITAL FOUNDATION CEO

MICHAEL HORNBY

Health and medical research is a mystery to everyday people.

Most people understand the need to find a cure to the diseases that affect us, that claim lives too soon. They know of the fundraising that is taking place to support the myriad of institutions that are tackling cancers, heart disease, Alzheimer's and mental health.

But the actual understanding of how research occurs, how it in itself can survive, who does it, and what it takes is not on the public's radar. There are assumptions that the Government foots the bill, that single major benefactors provide funding, pharmaceutical companies sponsor or that a major fundraising event provides support.

The harsh reality is that health and medical research is largely unsustainable. It is estimated that less than 10% of research will receive Government funding, less than 5% will attract commercial support and that the majority of research projects survive on a year to year basis depending on their success in applying for assistance.

This makes their work all the more extraordinary, why their devotion to finding cures is inspiring. Not only are they driven to improving the quantity and quality of life but in order to do this, their own financial survival is always at risk.

Since I commenced as the CEO of The Prince Charles Hospital Foundation it was impressed upon me by our Board that we had to do more. We have to find better ways to sustain this lifesaving research.

This year we launched a movement called The Common Good. Its purpose is to engage everyday people to support the research programs that matter most to them. If you are concerned about heart disease, for example, you can connect directly with a specific heart disease project and become a backer, become personally involved with that team. This deep connection with the researcher and the health area we hope will inspire people to stay involved, and make that work sustainable – taking it to the conclusion that we all seek.

We also know that for $44 we can fund an hour of research, that's our unique opportunity. Every hour gets us closer to an answer and our donors can see just how tangible their support is.

In this Research Report you will get an indication of the amount of work that is going on here at The Prince Charles Hospital. It is ground-breaking, of global significance, and may help someone we love one day. The researchers are truly amazing, they will make the world better, but it is up to people like you and me to give them the chance... for The Common Good.

Michael Hornby, CEO The Prince Charles Hospital Foundation

THE PRINCE CHARLES
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Cystic Fibrosis Research Group

RESEARCH HEAD

PROFESSOR SCOTT BELL
AND
ASSOCIATE PROFESSOR
DAVID REID

The Cystic Fibrosis Research Group aims to improve the health and wellbeing of people with cystic fibrosis (CF) and suppurative lung diseases (including bronchiectasis) by translating basic science discoveries from their laboratories into clinical outcomes.

Our Group is focused on improved understanding of infection and inflammation of CF lung disease leading to better diagnosis and treatments using molecular tools. We aim to improve our understanding of the pathophysiology of the condition bronchiectasis, which is under-researched.

We aim to deliver new therapies that are evidence based for people with CF and bronchiectasis through a clinical trial program. This includes pharmaceutical sponsored and investigator initiated studies.

Through their research the group is translating new evidence for treatments into clinical care. This was seen in 2014 when the group's research lead to the establishment of The Prince Charles Hospital's new Adult Cystic Fibrosis Ward, which offers patients single room accommodation to minimise cross-infection.

The group is also working hard to better understand the emerging complications of CF as the adult population rapidly grows in numbers and increases in age. By improving their understanding of the mechanism of antibiotic resistance, the team can determine how to best prevent and treat multidrug resistant infections.

They provide their patients with the opportunity for novel CF trial treatments and actively participate in policy development for the care of patients with CF and bronchiectasis through development of standards of care and guidelines, based on the evidence provided by research.

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PRESENTATIONS

HIGHLIGHTS

As a group of full-time clinicians in one of the largest adult CF services in Australia, we have established a multidisciplinary team of researchers. Our team is involved in a range of research activities including, clinical impact of shared Pseudomonas strains, enhanced diagnostic testing, geospatial studies and mechanisms of infection acquisition and persistence.

In 2014 our research directly led to changes in clinical practice by the demonstration of "shared strains" of Pseudomonas and the aerosolisation of viable bacteria during coughing; changes in scientific consensus on organism spread and infection control; changes in policy by participation in developing the 'Standards of Care for CF' (endorsed by the RACP and all Specialist Societies), which are currently under revision.

Their members have also provided leadership in the development of guidelines for CF in Europe and for bronchiectasis in Australia and New Zealand.

GRANTS

The CF group have been awarded over $3.6 million in funding since 2012. In 2014 the group were awarded over $100,000 in new grant funding. A range of funding institutions are supporting CF research at TPCH including, QIMR Berghofer, NHMRC and The Prince Charles Hospital Foundation.

PUBLICATIONS AND PRESENTATIONS

The group published 21 papers in 2014 and gave 12 conference presentations. This included an international presentation at the 37th European Cystic Fibrosis Conference in Sweden.

> "The group's research has lead to the establishment of The Prince Charles Hospital's new Adult Cystic Fibrosis Ward"

AWARDS

Staff within the CF Research Group received four prestigious awards in 2014. Professor Scott Bell received a Research Medal from Thoracic Society of Australia and New Zealand for research excellence. Timothy Kidd received Best Publication for 2013 paper from The Prince Charles Hospital as well as two prestigious four-year fellowships from NHMRC and the European Commission and European Respiratory Society. Anna Tai successfully received a Travel Grant to attend the TSANZ Annual Scientific Conference..

RESEARCH STUDENTS

In 2014 the Cystic Fibrosis Research Group had three PhD students and two Master of Philosophy students.

EDITORIAL POSITIONS

Professor Scott Bell is Editor-in-Chief of the Journal of Cystic Fibrosis.

RESEARCH COLLABORATIONS

The group has significant collaborative partners locally, nationally and internationally.

Locally their collaborators include Dr Ruth Hodson and Dr Stephanie Yerkovich. State-wide their collaborators are Prof Claire Wainwright and Prof Peter Sly from the University of Queensland and Lady Cilento Children's Hospital, Prof Keith Grimwood, Professor of Infectious Diseases, Griffith University. Professor Greg Anderson, Deputy Director, QIMR-Berghofer Institute of Medical Research, Brisbane. Professor Grant Ramm, Hepatic Fibrosis Research Group, QIMR-Berghofer Institute of Medical Research, Brisbane. A/Prof Scott Beatson, Senior Lecturer in Genomics and Bioinformatics at the School of Chemistry & Molecular Biosciences, University of Queensland, Brisbane. A/Prof John Miles, QIMR Berghofer Medical Research Institute. Prof Peter O'Rourke, QIMR Berghofer Medical Research Institute.

Dr Colleen Lau, QCMRI and University of Queensland. Dr Luke Knibbs, School of Population Health, University of Queensland. Prof Lidia Morawska, IHBI, QU.

Their national collaborations include, Prof Ian Paulsen, Director, Biomolecular Frontiers Research Centre, Macquarie University, Sydney. Prof Bart Currie, Director, RHD Australia; Team Leader, Tropical and Emerging Infectious Diseases, Menzies Institute, Darwin.

Internationally the team work with Prof Stuart Elborn, Dean, School of Medicine, Dentistry and Biomedical Sciences Queens University of Belfast. Prof Roger Levesque, Director IBIS, Laval University, Quebec. And Prof Pierre-Regis Burgel, Université René, Paris, France. Prof. Iain Lamont University of Otago, Dunedin, New Zealand.

Glenn Serna, Registered Nurse, ICU

THE PRINCE CHARLES
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Core Thoracic Research Group

RESEARCH HEAD
ASSOCIATE PROFESSOR PHILIP MASEL

The Core Thoracic Research Group's aim is to explore new diagnostic tests, mechanisms and treatments in a diverse range of thoracic diseases with a particular focus on bronchiectasis and chronic obstructive pulmonary disease (COPD).

Their research addresses a diverse range of respiratory diseases and includes investigating new and better therapies for COPD and bronchiectasis. They also explore allied health interventions for COPD and pneumonia, interventions for Pneumothorax and review rare lung diseases including alveolar proteinosis and pulmonary AVM's.

The group is involved in studies which explore the benefits of various new therapies in a diverse range of lung diseases and examine characteristics and outcomes of various lung diseases. This work is helping advance knowledge of interventions and mechanisms in a range of lung diseases.

HIGHLIGHTS
The group attended the 2014 Transplantation Society of Australia and New Zealand (TSANZ) Annual Scientific meeting in Adelaide. The team gave seven presentations and were also keen participants in poster discussions and oral presentations.

PRESENTATIONS
The Core Thoracic Research Group made seven presentations at TSANZ in Adelaide in 2014.

COLLABORATIONS
The Core Thoracic Research Group collaborated with a range of key people across Queensland and Australia in 2014. The team partnered with Royal Brisbane Women's Hospital on CHERISH: Collaborative for Hospital the Impact of Stays in Hospital. Associate Professor Masel also collaborated with George Tay on a Review of Pulmonary Alveloar Proteinosis. Nationally, the group took part in a Multicentre Randomised Control Trial of Intercostal Catheter Intervention in Patients with Large Spontaneous Pneumothoraces.

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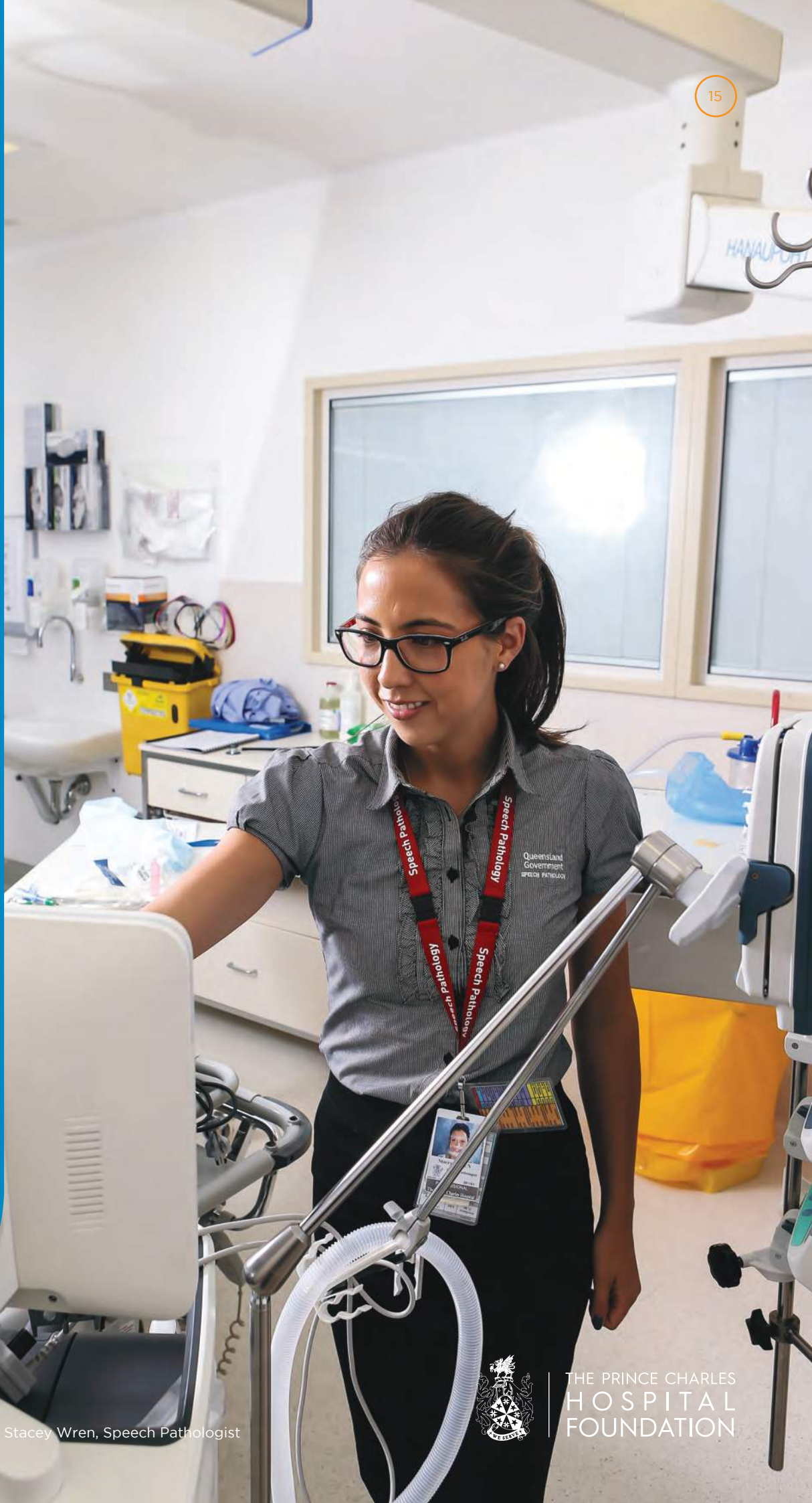
PRESENTATIONS



Stacey Wren, Speech Pathologist

THE PRINCE CHARLES HOSPITAL FOUNDATION

Queensland Lung Transplant Service

RESEARCH HEAD

ASSOCIATE PROFESSOR
DANIEL CHAMBERS

The Queensland Lung Transplant Service aims to improve outcomes of patients with incurable lung disease through innovation and basic, clinical and translational research. To bring clinicians and scientists together so that laboratory findings can be rapidly translated to improved outcomes for patients.

Post-lung transplant outcomes Advanced lung disease including idiopathic pulmonary fibrosis and pulmonary hypertension Our research aims to understand both the biology of lung disease and to trial potential new therapies in conditions for which there are no or few therapeutic options available.

As our research program is embedded in the clinical program, our research has direct clinical benefit for our patients.

The clinical trial program investigates new therapies to stop the progression of advanced lung disease, with many patients having positive results.

The clinical trial program within the group directly tests new therapies for the direct benefit of patients. For IPF, our centre is one of the largest in the world. In our laboratory we have developed tests which allow the more accurate diagnosis of infection and rejection in lung transplant patients. These laboratory results are directly translated in to the clinical management of the patient, saving lives.

HIGHLIGHTS

We continue to be recognised as a world leader in our field, publishing 18 original studies during the year and were one of the top contributors at The International Society of Heart and Lung Transplantation Annual Scientific Meeting.

We have emerged as the world's largest centre for stem cell therapies for lung disease, having completed world first trials of stem cell therapy for chronic lung allograft dysfunction, idiopathic pulmonary fibrosis and pulmonary hypertension.

We are the lead-site for a world-first trial of autologous T cell therapy for refractory viral infection.

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PUBLICATIONS

We established an Australian-first model of ex-vivo lung perfusion. Our innovative, world-first, human model of pulmonary hypertension has led to the successful commencement of a phase 1 trial in humans.

Our PhD student Kenneth Sinclair won the School of Medicine 3 minute thesis (3MT) competition for the School of Medicine.

GRANTS

The Queensland Lung Transplant Service received over $3.6 million in grants including three awarded by NHMRC and five through The Prince Charles Hospital Foundation.

PUBLICATIONS AND PRESENTATIONS

Associate Professor Daniel Chambers is an Editorial Board Member of the European Respiratory Journal.

Queensland Lung Transplant Service contributed to 18 publications.

The group made 13 presentations, including seven internationally at the International Society of Heart and Lung Transplantation Annual Scientific Meeting, European Respiratory Society ASM and the International Society for Cellular Therapy.

AWARDS

Mr Kenneth Sinclair was the UQ School of Medicine 3MT Competition Winner awarded from the UQ School of Medicine.

RESEARCH STUDENTS

The group supervised one MBBS Hons student, two MPhil students and four PHD candidates.

RESEARCH COLLABORATIONS

Queensland Lung Transplant Service collaborates throughout the country with the Australian Centre for Ecogenomics, Griffith University, the University of Queensland, QIMR Berghofer, Department of Nephrology PAH, Cell and Tissue Therapies WA, Royal Perth Hospital and Monash University.

Internationally the group works with United Therapeutics, North Carolina and the University of Vermont.

Sleep Disorders Centre Research Group

RESEARCH HEAD

DR DEANNE CURTIN
AND
GREG JORGENSEN

The Sleep Disorders Centre Research Group aims to encourage and support research to provide evidence for best clinical practice in the management of sleep and related disorders. We also aim to identify how sleep disorders impact the quality of life of patients and investigate the significance of sleep health in associated conditions and disease.

Some of our major research areas in 2014 included asking whether concomitant treatment of Insomnia and Obstructive Sleep Apnoea Syndrome improves outcomes in both disorders. We also looked at whether the treatment of OSA with CPAP improves cardiovascular outcomes, and whether portable non-invasive ventilation of increasing respiratory failure in patients with neuromuscular disease improves patient quality of life and that of their carers. Lastly, we explored the best metrics to measure sleep in hospitalised patients, and how prevalent sleep disruption is in hospitalised patients.

Our research is highly important, as insomnia occurs in approximately 30% of patients with OSA Syndrome. The aim of the study is whether the addition of CPAP therapy to standard cardiovascular risk factor management lowers the incidence of new cardiovascular events in patients with established cardiovascular disease and moderate to severe OSA syndrome. This will give us insights into several things, including whether mouth-piece ventilation adds to a patient's quality of life, and whether there are other ways to manage sleep disturbance for inpatients.

If the treatment of sleep disordered breathing demonstrates an improvement in the quality of life in patients with BOS, investigation and treatment sleep disorders breathing may become a part of standard care. Also, sleep is a fundamental ingredient for optimal health and tissue repair. Recognizing and improving poor sleep quality in hospitalised patients may improve outcomes.

Lastly, an understanding of the reasons for using ABGs or VBGS may lead to a change in practice, better patient outcomes and elimination of the doubling up of procedures.

HIGHLIGHTS

In our 2014 calendar year, we received an NHMRC funded project grant for a Co-Morbid Insomnia and Sleep Apnoea (CoMISA) study, and completed the recruitment phase of the research. We also continued with the quality of life study, examining the impact of mouth-piece intervention in patients with neuromuscular diseases and the impact on their carers. The group completed and published the Sleep Assessment of Hospitalised Patients study, before commencing the BOS Study.

RESEARCH COLLABORATIONS

The Sleep Disorders Centre Research Group has significant collaborations with Medical Imaging Department TPCH, Lung Transplant TPCH, Emergency Department TPCH, CARRS-Q, Queensland University of Technology, Institute for Breathing and Sleep Victoria, Adelaide Institute for Sleep Health and Flinders University.

> "Sleep is a fundamental ingredient for optimal health and tissue repair."

University of Queensland Thoracic Research Centre

RESEARCH HEAD

PROFESSOR KWUN FONG, PROFESSOR IAN YANG, AND ASSOCIATE PROFESSOR RAYLEEN BOWMAN

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PUBLICATIONS

The University of Queensland Thoracic Research Centre at TPCH focuses on clinical, translational and scientific research to improve the health of people at risk of and with lung conditions. It undertakes research to prevent, diagnose and treat lung diseases including lung cancer, mesothelioma, chronic lung diseases such as asthma and Chronic Obstructive Pulmonary Disease (COPD).

Our focus is on preventative health care such as addressing lung diseases linked to smoking and the environment, early detection of diseases, and cost effectiveness of innovative health technologies in the light of the ever increasing costs of health care.

Our airways disease research aims to find better ways to diagnose lung cancer and other respiratory diseases, as early as possible. Early diagnosis can often result in a broader range of treatment options and improved patient prognosis. Our biomarker research program aims to identify biomarkers in the human genome that may lead to personalised targeted treatments that are better able to combat diseases.

These research findings and outcomes are used as evidence to support the development of evidence based clinical pathways and guidelines, diagnostic methods and therapies for use within the daily clinical practice at the TPCH, and to support recommendations made across the thoracic medicine field.

Our research is embedded into clinical programs, ensuring state-of-the-art care, and research questions that are highly relevant. We can also rapidly translate what we find in the laboratory into improved outcomes for patients. Bringing consumers, clinicians and scientists together to benefit everyone, invigorate our clinical program, and ensure Queenslanders will always have access to world class care.

HIGHLIGHTS

We've had a range of publications on primary studies and reviews on clinical and research topics in respiratory medicine and sciences, in lung cancer, mesothelioma, COPD, asthma, air pollution and other conditions.

We've gained new collaborations with National and International partners e.g. The Cancer Genome Atlas Study with the NIH. In 2014 we applied for and achieved new research grants from competitive schemes, including TPCH Foundation grant, UQ near-miss cancer research grant and success with an AusHSI grant studying using Telehealth for respiratory medicine and Ian Yang's project. Supervision of PhD, MPhil & Honours (MBBS &BSc) students.

The Lung Tissue Biobank at TPCH now has over 1,500 fresh frozen tumours and bronchoscopy samples from patients to understand the clinical role of state of the art navigation bronchoscopy systems for the evaluation of lung lesions.

GRANTS

The University of Queensland Thoracic Research Centre Group received approximately $659,000 in research grant funding from local and national competitive grant agencies. Including NHMRC, Lung Foundation Australia, University of Queensland, The Prince Charles Hospital Foundation and AusSHI.

> "To find better ways to diagnose lung cancer and other respiratory diseases, as early as possible."

PUBLICATIONS AND PRESENTATIONS

Our staff and students continue to deliver presentations at national and international meetings.

The group published 23 journal articles in 2014. They also gave 10 presentations locally and internationally, which included presentations at TSANZ Annual Scientific Meeting, the Australian Lung Cancer Conference and American Academy of Allergy, Asthma and Immunology Meeting in California, USA.

AWARDS

Dr Ian Yang was awarded with an Australia Day Award for clinical research from the Metro North HHS and a Certificate of Appreciation for National Volunteer Week from the Asthma Foundation Queensland.

RESEARCH STUDENTS

As a University of Queensland School Research Centre, UQTRC is proud to have a strong education program. Students are trained from high school, undergraduate, postgraduate and junior Faculty levels. UQTRC has nine PhD Students, two MPhil Students, one BSC (Hons) Student and four MBBS (Hons) Students.

RESEARCH COLLABORATIONS

The UQTRC has research collaborations locally, nationally and internationally. Locally, we work with Asthma Research Centre; Royal Children's Hospital; Queensland Institute of Medical Research; Berghofer; Royal Brisbane & Women's Hospital; Lung & Allergy Research Centre UQ; International Air Quality Laboratory, QUT; Australian Centre for Ecogenomics, UQ; Princess Alexandra Hospital; Mater Medical Research Institute; and UQ Diamantina Institute.

Nationally the group collaborates with John Hunter Hospital; Children's Cancer Institute Australia; Lung Foundation Australia; Royal Adelaide Hospital; University of Melbourne; Princess Margaret, King Edward Memorial & Royal Perth Hospitals.

The group also have several international research collaborators including Brock Uni, Canada; University of British Columbia; University of Melbourne; Royal Melbourne Hospital; Chulabhorn Hospital, Bangkok Thailand; Lowy Cancer Research Centre UNSW; Sir Charles Gairdner Hospital; University of Hong Kong; CSIRO, Canberra; Asthma Genetics Laboratory, University of Southampton, UK; University of Texas; Howard Hughes Medical Institute; The Cancer Genome Atlas Project (NIH NCI USA).

Kenneth Sinclair, Research Scientist

Anaesthesia Research Group

RESEARCH HEAD
DR USHA GURUNATHAN

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PUBLICATIONS

The Anaesthesia Research Group initiates and is involved in projects that help optimise patient management along their peri-operative pathway, thereby ensuring the provision of a high quality of health care.

The emphasis of all the major research projects that our group has been involved in so far has been focused on patient related outcomes, such as; effective pain control following surgery, safety of analgesic drugs and anaesthetic management throughout the surgery and factors such as increased body weight that can relate to poor outcomes following surgery. We expect that the results of these projects can provide us with the evidence that can greatly influence anaesthetic practice.

Through their research the group aim to improve postoperative pain management, improve the quality of immediate postoperative recovery and long term outcomes, reduce postoperative morbidity, enhance intra-operative anaesthetic care and find ways to minimise unnecessary transfusion using latest technology, postoperative adverse outcomes in obese population.

Clinically, The Anaesthesia Research Group's involvement in these large-scale projects aims to improve patient assessment, management and outcomes.

HIGHLIGHTS

In 2014 the group successfully completed five investigator initiated trials that were conducted in 2013. As a part of multicentre international RELIEF study, Dr Gurunathan began leading a sub study to be completed in 2016, on the association of obesity and surgical site infection.

Ongoing the group is collaborating with researchers from Canada and several Australian hospitals and successfully running METS and iron NOF trials.

They've also commenced a new single centre trial on the benefit of using visual aid on the success of positioning for spinal anaesthesia and a nationwide survey facilitated by the ANZCA, on the research interests among anaesthetists.

GRANTS

ANZCA project grant was awarded to Dr.Usha Gurunathan and Dr. Ivan Rapchuk to investigate 'Obesity and the risk of septic complications following major abdominal surgery'.

PUBLICATIONS AND PRESENTATIONS

The group has contributed to six publications including two book chapters.

RESEARCH COLLABORATIONS

The Anaesthesia Group has local collaborations with Princess Alexandra Hospital, Redcliffe Hospital, Nambour Hospital, QIMR, University of Queensland, and Queensland University of Technology.

Nationally and internationally the group works with the Alfred Hospital, Fremantle, Royal Perth Hospital, Auckland Hospital and St Michaels Hospital, Toronto.

> "These projects can provide us with the evidence that can greatly influence anaesthetic practice."

Emergency Medicine Research Group

RESEARCH HEAD

DR FRANCES KINNEAR, DIRECTOR OF RESEARCH, EMRG, EMCS

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PRESENTATIONS

Emergency Medicine & Children's Services (EMCS) is a relatively new department that continues to expand exceedingly rapidly (threefold plus growth in 5 years to current 78 000 presentations per annum, being the second busiest in QLD). Naturally, development of clinical pathways and training programs took precedence until recently. With formation of Emergency Medicine Research Group (EMRG) and funding for 3 years of a full time research co-ordinator position attention to the third pillar of academic excellence, namely research, has now commenced as per our strategic plan.

In line with our position as the access point for hospital-based care, EMRG studies span the age spectrum plus a wide range of conditions but with an emergency-specific focus. All of our studies are aimed at improving the quality of care but we approach this from a number of different angles depending on the condition.

HIGHLIGHTS

The efforts of EMRG are just beginning to result in tangible outcomes with respect to both output and reputation. With projects in all phases of development and ongoing development of partnerships this should provide a solid foundation for future growth in line with our strategic plan. Flow-related research may not seem beneficial to the individual but it does in fact have an impact via improved overall function, particularly in the current climate of bed-block or emergency department overcrowding.

GRANTS

In 2014 the group was awarded over $300,000 in grants. This included three New Investigator Grants from The Prince Charles Hospital Foundation, as well as project grants from SEED Innovation Fund, AusHSI and the University of Western Australia.

PUBLICATIONS AND PRESENTATIONS

The group made seven presentations in 2014, including one at the International Conference on Emergency Medicine in Hong Kong.

RESEARCH STUDENTS

The Emergency Medicine Research Group supervised one PhD student in 2014.

RESEARCH COLLABORATIONS

The group collaborates with Queensland Emergency Research Collaborative (QERC), the Joseph Epstein Centre for Emergency Medicine Research, VIC, and internationally with the London School of Hygiene and Tropical Medicine, UK.

> "The group was awarded over $300,000 in grants."

Research by design

In the early 90s, the average life expectancy for a person with cystic fibrosis (CF) was about 25 years. In 2015, that number is nearing closer to 40 years, and Dr Scott Bell and his clinical care and research teams hope to keep that number rising!

Research into CF at The Prince Charles Hospital began right back in the late 90s, looking into some of the major causes for flare-ups and better ways to treat patients with the rare disease. Through decades of important studies, the team based at The Prince Charles Hospital discovered several crucial things about CF. Firstly, they found that CF patients were cross-infecting one another with different bacterial strains when they came into direct contact. Secondly, they discovered that bacteria in a session of coughing can travel up to four metres, not just the one metre that had originally been estimated. They also found that bacteria could remain viable (alive) for up to 45 minutes.

Through these important discoveries, the team began to design a specialty ward for adult CF patients at The Prince Charles Hospital, which was officially opened in October 2014.

Where previously patients were crammed four to a room, they now have their own comfortable, private suites for treatment to allow a full recovery. They have access to a relaxing outdoor area, a full kitchen and a gym that can be booked out (one patient at a time). Each room even has its own exercise equipment thanks to fundraising efforts from ambassadors including the TPCH Foundation, Aspley Lions, 65 Roses Inc and the many of the patients attending the Centre led by the Patient Advisory Committee.

The new ward was especially designed for patients to undergo their regular treatments, while protecting them against cross-infection and making them feel right at home. This personal care and comfortable facilities are especially important for those patients travelling a long way from home for treatment; the one-of-a-kind ward has patients travelling from as far south as Port Macquarie in New South Wales, and as far north as Cape York of Queensland.

It's a triumph that should be celebrated, and as Dr Bell highlights, "we have this tsunami of adults with CF – you don't die with CF as a child anymore."

In fact, thanks to his team's clinical care and research efforts and help from The Prince Charles Hospital, CF patients can now go on to grow up and even have children of their own; something that wasn't a reality twenty years ago.

Professor Scott Bell

Critical Care Research Group

RESEARCH HEAD

PROFESSOR
JOHN FRASER

The Prince Charles Hospital Critical Care Research Group (CCRG) is the largest multidisciplinary critical care research team in Australasia specialising in translational research relevant to the care of the critically ill patient.

Together the Critical Care Research Group translates new knowledge about critical illness into new or improved treatment modalities.

The group aims to educate and inform medical and other health professionals of the results of their research through publications in peer reviewed medical and other professional journals; presentations at professional meetings and conferences; and development of high quality in-house education tools, including high-end simulation, animal models and video productions.

Through their research the team have enhanced the quality and significance of their research to become a nationally and internationally recognised research centre. They also facilitate inter-departmental collaboration between all specialties involved in acute care medicine. Through this work, they are helping achieve better outcomes in patients with acute illness –whether medical or surgical in origin.

Sadly, the mortality in the critically unwell is unacceptably high. These patients depend on a multitude of specialities – both medical and non medical – to survive. Our research group mirrors the large interdisciplinary team that works with the patient to achieve the best outcomes. This is why the research team works in a silo free manner to achieve best research outcomes that aim to translate into better patient outcomes.

Their patients have access to the best and brightest clinical researchers, and thus are some of the first to benefit from new, evidence based findings. The CCRG is seen as one of the world's leading critical care research collaboratives. Thus, we integrate with all the major work groups and our patients benefit from these collaborations through immediate access to cutting edge findings from key clinicians and researchers across our world network.

The group have collaborations with almost every discipline and each discipline is involved in creating the next research question. To achieve this, they must be up-to-date with what is "best practice" and already available. This ensures our team members are at the peak of clinical knowledge, which allows patients the benefit before any research has even begun.

The group is also involved in writing and defining global position statements for best practice. This means their work practices are leading clinical practice around the world.

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STUDENTS

Innovative Cardiovascular Engineering and Technology Laboratory

RESEARCH GROUP LEAD

DR SHAUN GREGORY AND
PROFESSOR JOHN FRASER

The ICETLAB is a very successful sub-group of the CCRG. It is the largest cardiovascular engineering research laboratory in Australia and focuses on the diagnosis, surgical intervention and treatment of cardiovascular disease including long-term mechanical circulatory support.

The lab combats cardiovascular disease by serving as a bridge between the engineering department and clinic. The team develops novel solutions for diagnosis, surgical intervention and treatment of cardiovascular disease translating new knowledge about cardiovascular disease into new or improved treatment modalities.

They also help to educate and inform medical, engineering and other health professionals of the results of their research through publications in peer reviewed medical and other professional journals; presentations at professional meetings and conferences; and the development of high quality in-house education tools, including high-end simulation and animal models.

The ICET LAB's work is reducing postoperative complications with mechanical circulatory support by:

- Improved clinical understanding of the operation and control of ventricular assist devices;
- Characterisation of the operating characteristics when using a left ventricular assist device to support the right ventricle;
- Determination of the mechanisms of right heart failure after left ventricular assist device implantation;
- Evaluation of flow dynamics in the native circulatory system and the interaction with mechanical circulatory support;
- Improved understanding of the blood-device interaction with mechanical circulatory support to reduce postoperative complications;
- Optimising mechanical circulatory support implantation by:
  - Carrying out simulations of the different implantation sites on a patient-by-patient basis
  - Developing novel devices and techniques for simple, rapid implantation of devices without the need for cardiopulmonary bypass
- Validating clinically available techniques of measuring cardiac output by:
  - Development and validation of a mechanical representation of the human heart and circulatory system
- Evaluating standard techniques against gold-standard flow sensors in simulation.

CENTRE FOR RESEARCH EXCELLENCE

In 2014 the team were awarded in excess of $10M in grants. This included the highly prestigious National Health and Medical Research (NHMRC) 'Centre for Research Excellence' (CRE) for their work in mechanical assist devices. This CRE was the first ever to be awarded in the field of mechanical cardio-respiratory support and one of a small handful ever awarded to a Hospital.

The CRE has evolved into a multi-national collaborative extending across Australia, Singapore, Japan, Malaysia, China, Taiwan and Korea. This has now attracted PhD scholarships from the world's best mechanical support hospitals including Belfast, Toronto, the Alfred, and Pitié-Salpêtrière Hospital who have all joined the CCRG team.

GRANTS

In total the CCRG, including the ICET LAB, were awarded over $13.9 million in grant funding in 2014. This support came from a range of funding bodies including, NHMRC, The Prince Charles Hospital Foundation as well as international support from the Cardiac Society of Australia and New Zealand.

PUBLICATIONS AND PRESENTATIONS

CCRG researchers were invited to present more than 40 lectures and presentations in Australia and across the world. Researchers from the ICET LAB gave 15 presentations, both locally and internationally.

The group also published 52 peer reviewed papers in 2014, whilst Professor John Fraser held two journal editorial positions.

AWARDS

Amy Spooner received Best Safety Paper from ANZICS. Dr Elissa Milford was awarded a Best CICM Trainee Grant from the College of Intensive Care Medicine. Charles McDonald received Best Basic Science Paper and Dr Kiran Shekar received Best Paper at The Prince Charles Hospital's 2014 Annual Research Forum.

RESEARCH STUDENTS

The Critical Care Research Group supervised 22 higher research degree students in 2014.

During 2014 the ICET LAB supervised 25 students and staff including Postdoctoral, PhD, Masters, Honours, Internship, and Research Assistants.

RESEARCH COLLABORATIONS

CCRG collaborates locally with Metro North HHS, The Royal Brisbane & Women's Hospital, Queensland University of Technology, The University of Queensland, Griffith University, The Gold Coast University Hospital, The Princess Alexandra Hospital, Lady Cilento Hospital, St Vincent's Hospital, Nambour General Hospital.

They also have collaboratives partners across Australia including, The Australian Red Cross Blood Service, HeartWare International Inc, Novalung GmbH, N. Stenning & Co Pty. Ltd., Mallinckrodt Pharmaceuticals (formerly IKARIA Inc.), The Baird Institute for Applied Heart and Lung Surgical Research, Alfred Health, Royal Prince Alfred Hospital, Monash University, University of New South Wales.

Internationally the group works with The Kenya Medical Research Institute (KEMRI) Welcome Trust, Fisher & Paykel Healthcare Limited, University of Malaya, London Imperial College, Malmo University Hospital, National Heart Hospital, Malaysia, University of Texas, Texas Heart Institute, Columbia Presbyterian, Toronto, Danny McAuley – Queen's University, Belfast, Pitié-Salpêtrière Hospital, Regensburg, Nu Hospital Korea, Kaohsiung.

Researchers in the ICET LAB work with intensivists, surgeons, cardiologists, nurses, rheologists, engineers (medical, mechanical, electrical), industrial designers, biologists, histologists, pre-clinical trial coordinators and patients to deliver the best devices possible to improve patient outcomes.

The ICET LAB collaborates locally with, The Royal Brisbane & Women's Hospital, Queensland University of Technology, University of Queensland, Griffith University, The Princess Alexandra Hospital, Nambour General Hospital and Redcliffe Hospital.

The ICET LAB also has collaborative partners across Australia such as, The Australian Red Cross Blood Service, HeartWare International Inc, N. Stenning & Co Pty. Ltd., Royal Prince Alfred Hospital, Monash University, University of New South Wales and CSIRO.

Internationally the group works with the Texas Heart Institute (USA), University of Dammam (Saudi Arabia), University of Franche-Comte (France), University of Applied Sciences (Germany), Helmholtz Institute (Germany), Ibaraki University (Japan), University of Malaya (Malaysia) and Universita Degli Studi Di Roma La Sapienza (Italy).

Adult Congenital Heart Unit

RESEARCH HEAD

ASSOCIATE PROFESSOR
DOROTHY RADFORD

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PUBLICATIONS

The Adult Congenital Heart Unit research aims to better understand this unique group of patients and to elucidate factors which will help in the management of these patients.

Through their research they are assessing multiple medical concerns in the Fontan group of patients, including psychological factors troubling their patients and means to resolve them.

The READY program (Resilience for Adults every Day) is giving their patients practical helpful techniques for coping. The Australia and New Zealand wide Fontan study is elucidating many clinical facts, as well as educating and socialising the patients

Through this research, the groups is helping teenagers with congenital heart disease to make the transition from paediatric to adult care. Helping them understand their own heart problem and to start taking care of their own health.

HIGHLIGHTS

In 2014, the major highlights for the Adult Congenital Heart Unit Team included a range of publications in international journals.

Theresa Malpas, clinical nurse consultant in ACHD, was first author on a psychology paper. Other publications focused on clinically related aspects of congenital heart disease and cardiology.

The group has also continued their ongoing Fontan Partnership Project in Australia and New Zealand, which is financed through a NHMRC grant.

The READY program for psychological coping continues to give patients practical helpful techniques. Fontan patients have become more familiar with their condition and have received the opportunity to socialise with others.

GRANTS

The Unit is part of a research collaboration which received an NHMRC Partnership Program Grant of $1,250,000 over five years. The project looks at giving an adult life after Fontan surgery to those with most severe congenital heart conditions.

PUBLICATIONS

The group had six peer reviewed papers published in 2014.

RESEARCH STUDENTS

The Adult Congenital Heart Unit has two PhD candidates.

RESEARCH COLLABORATIONS

The Adult Congenital Heart Unit collaborates with the Metro North HHS psychology department, the University of Queensland, Queensland University of Technology, Royal Children's Hospital Melbourne, and the ANZ Fontan Study.

> "Helping teenagers with congenital heart disease to make the transition from paediatric to adult care."

Helping People – It's Personal

There is no doubt that people who undertake medical research are passionate about making the world better. They don't do it for the money (goodness knows they deserve more than they actually receive), they don't do it for the publicity (often recognised only by their peers), and they certainly don't do it for the glamour.

It is this tireless and often unrecognised dedication that inspires those of us who have the privilege of knowing them. No one embodies this level of commitment, passion and self-sacrifice more than Margaret Morton.

Margie, as she is known, is a non-assuming gentle soul who has quietly built a reputation as one of the most respected and loved people at The Prince Charles Hospital.

For over 40 years Margie has cared for thousands of patients in her various nursing roles. A deep appreciation of charity is also evident, influenced by her father, Walter Morton, who helped establish The Prince Charles Hospital Foundation in 1986 and would give from his weekly wage to fund research.

Margie has been known to work through her holidays, volunteers her time to speak to community groups and usually pays her own way to attend health conferences. You see, this is not a job for Margie – this is her life.

And helping to one day find a cure for dementia is Margie's mission.

Dementia is Australia's second biggest killer, and Margie is at the coalface trialling treatments to improve the quality of life of dementia sufferers, as well as working on a new project that seeks to identify the presence of the disease in the earlier stages. This is important research for the 350,000 Australians and their families who are affected by incurable dementia every year.

Sparked by a deep-seated passion for quality aged care, Margie goes through a personal journey with every patient and family member that takes part in these trials and research projects. On top of her long work days and effort above and beyond in the work place, she still makes the effort to bake homemade biscuits and write up birthday and Christmas cards for her patients, who she considers as family.

Everything she does is from the heart, and anyone who comes into contact her can immediately feel that passion radiate.

It's this passion that earlier this year inspired Richard Bettles to complete a 170km trail run to raise money for Alzheimer's research. The ultra-marathon runner completed the Ultra Trail Du Mont Blanc in 37 hours and 19 minutes, raising nearly $50,000 for dementia research in the process. When interviewed about the incredible feat, he commented that he does it 'for people like Margie'.

Margie is just one example of the fantastic team who have helped The Prince Charles Hospital to get to where it is today, with its forward-thinking and standout results. Without this dedication to research that extends beyond the lab and into the homes of patients, we wouldn't have such a passionate team of doctors, nurses, allied health professionals and patients, carrying the torch for continued medical research.

Margie Morton, Senior Clinical Research Coordinator

Echocardiography Research Unit

RESEARCH HEAD
DR DARRYL BURSTOW

The Echocardiography Research Unit aims to advance echocardiography procedures and enhance patient care. The unit hopes to improve echocardiography and to further the understanding of new and conventional echocardiographic parameters to improve patient care.

We cover various areas of study, looking to address a variety of health issues in patients. These health issues include contrast echo in adult congenital heart disease, 3D TOE for guiding percutaneous stenting of pulmonary vein stenosis, global longitudinal strain for TAVI patients, diastolic strain, alternation of transmural layers of strain in myocardial ischaemia during dobutamine stress echo and TR pre and post contrast.

Our research will also aim to study the sensitivity and specificity of modern-era Echocardiography for diagnosis of left-sided native and prosthetic valve infective endocarditis, comparison of AVC timing between PW Doppler and EchoPAC automated algorithm, ePLAR, contrast echo in sarcoid cardiomyopathy and single beat 3D LV volumes - novice vs expert.

HIGHLIGHTS

2014 was a successful year for the echocardiography research group. We had plenty of milestones, including the MitraClip (quantitation of regurgitant volumes by TTX&CMR), developing contrast Echocardiography in acutely unwell patients, the Lump in the Heart, infected PFO, using 3D assessment for infective endocarditis, 3D TOE guiding percutanous stenting of pulmonary vein stenosis Obstructive mechanical valve thrombosis (and improving utility of 3D TOE).

We were also able to look at the feasibility of clinical utility of microsphere contrast-enhanced TTX echo in ACHD, the validation of AVC timing by EchoPAC AFI algorithm (compared to conventional PWDoppler assessment), 3Dspeckle tracking analysis of LV multi-directional strain in severe AS with preserved EF, the short-term effects of transcatheter AV implantation on LV transmural mechanics using multi-layer speckle tracking echo and the Profile of infective endocarditis in a peripheral Australian hospital.

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PRESENTATIONS

Dr Darryl Burstow also had a book chapter published in "Advanced Echo ASE Edition 2" about prosthetic valves MV & AV. Burstow D. All of these highlights brought us closer towards our goals of improving patient care and exploring leading and new techniques to improve the accurate diagnosis of heart disease. We hope to continue improving the accuracy of echocardiography in our research.

PUBLICATIONS AND PRESENTATIONS

It was a busy year for the Echocardiography Research Unit in 2014. First of all, Ms Natalie Kelly held an editorial position on the publication 'Sound Effects' ran by the Australian Sonography Association.

The group also made nine presentations in 2014, including seven presentations at the World Congress Cardiology and one international presentation at the European Society of Cardiology Congress in Barcelona.

RESEARCH COLLABORATIONS

In 2014 Echocardiography Research Unit collaborated with two major companies. The first was local business Heart Care Partners, one of Queensland's largest providers of cardiac care. The second group was the Mayo Clinic in the United States of America, an international leader in healthcare research.

> "To continue improving the accuracy of echocardiography in our research."

Advanced Heart Failure and Cardiac Transplant Unit

RESEARCH HEAD

ASSOCIATE PROFESSOR
DOROTHY RADFORD

The Advanced Heart Failure and Cardiac Transplant Unit is a clinical service with an active program encouraging research into aspects of the unit's clinical care provision, namely advanced heart failure and cardiac transplant.

Through their research program The Advanced Heart Failure and Cardiac Transplant Unit aim to improve outcomes in heart failure and heart transplant patients.

They participate in multi-site industry sponsored studies to; develop new devices for the management of heart failure; develop new medicines for the management of heart failure and heart transplant recipients; Clinical implementation of mechanical circulatory support devices.

They also actively participate in multi-site government and privately funded studies to improve outcomes in heart transplant and heart failure patients.

This includes studies to optimise; patient selection for cardiac transplant or mechanical circulatory support devices; patient recovery after cardiac transplant or mechanical circulatory devices; the management of mechanical circulatory devices; and Telemedicine and remote Tele-monitoring and its application and implementation in the care of heart failure and cardiac transplant patients.

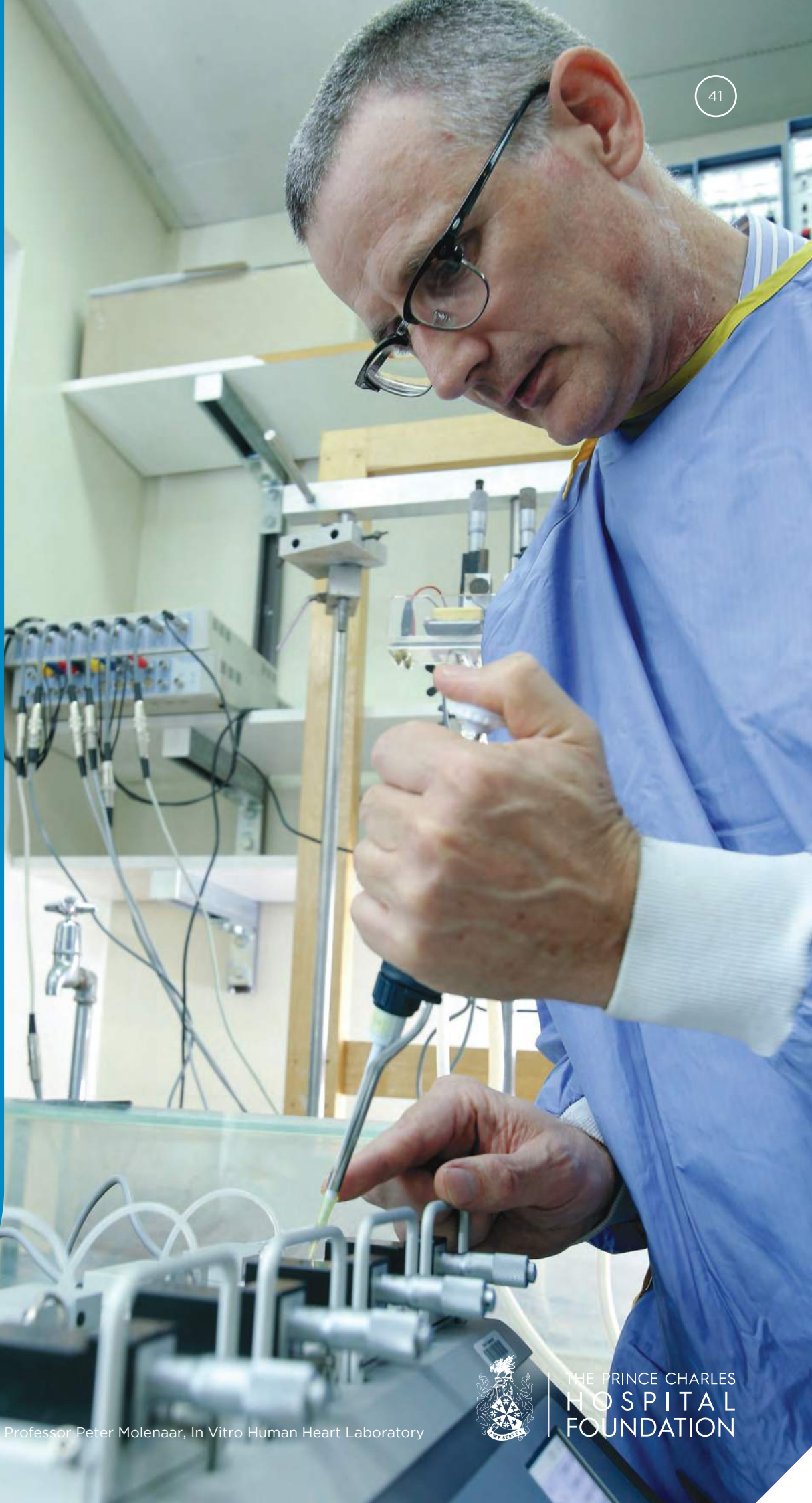
Through this research they are also helping to deliver care to patients in regional, rural and remote areas in their local communities.

HIGHLIGHTS

The group had three abstracts accepted for World Congress of Cardiology 2014. They also commenced the REDUCE-LAP-HF study (subsequently the equal biggest recruiting site in the world).

RESEARCH COLLABORATIONS

The team collaborate with a variety of national and international groups including, The University of Queensland, University of Southern Queensland, QIMR, CSIRO and International Society of Heart and Lung Transplant.



Professor Peter Molenaar, In Vitro Human Heart Laboratory

University of Queensland Cardiovascular Research Unit

RESEARCH HEAD

PROFESSOR MALCOLM WEST

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PUBLICATIONS

We are focused on identifying mechanisms that might be influenced to benefit patients at risk as well as instituting demonstrated preventative measures.

Aortic aneurysm disease and the associated conditions affect young to middle aged adults. It is a silent but life threatening condition. The risk of death is high in untreated aneurysm and surgical repair is the only effective treatment. Despite extensive studies of aortic aneurysm the cause of aortic aneurysm is not known.

The research may assist in finding novel treatment and prevention of aortic aneurysm and the identification of genetic and environmental risk factors.

The University Cardiovascular Research Unit aims to identify factors that underlie development of aortic aneurysm disease and to understand the relationship between ischaemic heart disease and chronic renal disease.

The group's research addresses the diagnosis and treatment of thoracic and abdominal aortic aneurysm disease, Marfan syndrome and other causes of aortic aneurysm disease. As well as risk factors for myocardial infarction, management strategies for treatment of chronic renal disease in the presence of ischaemic heart disease and cardiovascular risk associated with periodontal disease.

Their research aims to improve diagnosis and management of patients with Marfan Syndrome and aneurysm disease. This includes identifying specific causes and biomarkers for risk of myocardial infarction and potential benefits of erythropoietion for ischaemic heart disease and chronic renal disease.

This research is helping provide identifiable risk factors for the development of aortic aneurysm disease, evidence that lipid lowering drugs reduces incidence of acute coronary syndromes. It also shows the benefit of erythropoietin in chronic renal disease and provides evidence that triclosan containing toothpaste prevents periodontal disease.

HIGHLIGHTS AND PUBLICATIONS

The University of Queensland Cardiovascular Research Unit had eight peer-reviewed journal article published in 2014.

The group's 2014 highlights included publication of papers showing long-term risk of elevated s. troponin I and other biomarkers in patients with ischaemic heart disease, publication of results showing benefits of erythropoietin in chronic renal disease and ischaemic heart disease, Tricloclosan toothpaste as beneficial treatment for chronic periodontal disease and publication of genetic factors involved in risk of aortic aneurysm disease.

HIGHLIGHTS

The UQ Cardiovascular Research Unit has extensive collaborations across Queensland, Australia and internationally, including collaborations with TPCH Department of Cardiothoracic Surgery, The Royal Women's Hospital Department of Vascular Surgery, Marfan Association, Queensland Dental Health, Diamantina Institute.

Nationally and internationally the group work with Centenary Institute, University of Sydney, Sydney Baker Research Institute, The Alfred Hospital Melbourne, University of Hamburg Germany, Hang Tuah University Indonesia.

> "Identifying specific causes and biomarkers for risk of myocardial infarction."

Cardiovascular Research Unit – In Vitro Human Heart Laboratory

RESEARCH HEAD

PROGRAM:
PROFESSOR
MALCOLM WEST

GROUP:
ASSOCIATE PROFESSOR
PETER MOLENAAR

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PRESENTATIONS

The unit aims to use explanted human heart samples in vitro to identify and investigate novel pathways to manage and prevent heart disease. The in vitro human heart laboratory provides a unique laboratory in close proximity to The Prince Charles Hospital heart surgical program to research effects and mechanisms of endogenous compounds, enzymes and medicines directly in human heart. It is equipped with a 20-channel digitised recording system for measuring contractile events. The unit is investigating specific enzymes, phosphodiesterases that could protect patients from potentially dangerous ventricular arrhythmias. These enzymes could therefore provide a therapeutic target for medicines.

The program addresses an urgent need to identify new targets for medicines to manage and treat heart disease.

HIGHLIGHTS

1 Discovering chronic administration of the beta-blocker carvedilol to patients with heart failure causes selective reductions in adrenoceptor mediated responses in human heart

2 The enzyme phosphodiesterase 3 but not phosphodiesterase 4 controls beta1 – and beta2 –adrenoceptor mediated increases in contractility

3 Chronic administration of carvedilol increases the activity of phosphodiesterase 3 in human heart

4 Carvedilol may provide protection against both beta1- and beta2-adrenoceptor mediated human ventricular arrhythmias by blocking beta1- and beta2-adrenoceptors and by increasing phosphodiesterase activity.

GRANTS

Associate Professor Peter Molenaar was awarded a project grant from The Prince Charles Hospital Foundation for 'Phosphodiesterase 2, 3 and 4 control of arrhythmias in the human heart'.

PUBLICATIONS AND PRESENTATIONS

The Cardiovascular Research Unit – In Vitro Human Heart Laboratory published in two journal articles in 2014.

Associate Professor Peter Molenaar made five presentations, both here in Australia and internationally, including at the World Congress of Pharmacology.

RESEARCH STUDENTS

Associate Professor Peter Molenaar supervised one PhD candidate in 2014.

RESEARCH COLLABORATIONS

Along with extensive collaborations amongst the TPCH campus the Cardiovascular Research Unit – In Vitro Human Heart Laboratory collaborated with the University of Queensland, University of Newcastle, University of Canberra, Victor Chang Research Institute.

The group also worked internationally with Alberto Kaumann University of Murcia in Spain.

Brisbane Today, Tomorrow the World

It started out with a $10,000 grant, and now the project Anna-Liisa Sutt began years ago as a New Investigator has projected her into the international spotlight for patient care in the ICU. The Estonian-born speech pathologist started working at The Prince Charles Hospital in 2011, with ICU patients on breathing devices as a big part of her caseload.

She found that many of these patients with tracheostomies (a small tube inserted into the windpipe) were finding it extremely hard to communicate with their healthcare team, family and friends. Speaking valves that can be used with these patients were not used at all at the time due to concerns on the impact of these valves on patients' lungs.. With her research findings Anna-Liisa has pushed this number up to 75 percent on tracheostomised patients in 2015, and says it's made a world of difference for the patients affected and the ICU team looking after them.

As Anna-Liisa explains, when using the speaking valve, "Someone told us they were lactose intolerant and to stop pushing the milk products on to them, and all along we were trying to sort out their diarrhoea... We also had a patient who had a lesion on their skin that we thought was a pressure area.

Numerous investigations were done until the patient was using a speaking valve and was able to tell us that it was psoriasis that he had had for years." A patient being able to talk during such difficult time in their lives helps both them and us looking after them. Now Anna-Liisa is focusing on having her studies published, and trying to get the word out so other hospitals can change their practice after the overwhelmingly positive results at The Prince Charles Hospital. Her efforts have attracted the interest of some of the most prestigious medical institutions around the world, including Johns Hopkins Hospital who invited her over earlier this year. She has also presented at several international conferences in the US and Europe this year.

All it took was for Anna-Liisa to ask a question and be given the support she needed to get her initial project underway. Now, not only has she changed the course of her own career, but she's changed the lives for thousands of patients now and into the future that will need to be on breathing assistance devices.

Anna Liisa Sutt, Speech Pathologist

THE PRINCE CHARLES HOSPITAL FOUNDATION

Cardiothoracic Surgery Research Group

RESEARCH HEAD

DR RISHENDRAN NAIDOO

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PUBLICATIONS

The Cardiothoracic Surgery Research Group evaluates new surgical technical and clinical strategies to enhance patient outcomes while increasing clinical program efficiency. Through their research they evaluate new technology, including informatics, relevant to supporting cardiothoracic surgery practice and research processes.

Their program also aims to leverage research to enhance clinical experience with new technology; enhance patient-centred research by increasing the use of Quality of Life and Patient Reported Outcomes Measures; facilitate research which targets clinician-generated questions and include analysis, outcomes and benchmarking research on the current practice of the cardiothoracic unit as contributing to quality assurance.

They engage interdisciplinary clinical and associated medical teams to conduct their research and involve the cardiothoracic patient group to increase research capacity, activity and output through relevant partnerships.

Patient care processes must be as efficient as possible with optimisation of resources within these constraints - assurance of effective, efficient and appropriate care through research reflecting a 'frugal innovation' strategy using technology which is targeted and tailored to individual patient need.

This helps create appropriate care pathways to ensure the patients' hospital journey is as seamless as possible, making use of new technology and fully integrating all health care professionals involved in cardiothoracic surgery.

This provides opportunities to combine research with clinical responsibilities to build a culture of quality and innovation, increasing uptake of new knowledge and directing better outcomes.

The cardiac surgical care process is increasingly able to be tailored to individual patient needs and incorporates the patients' perspective on outcomes. This new and targeted technology helps aid patient recovery, reduce hospital admission time, and provide therapies for patients otherwise not amenable to standard procedures.

HIGHLIGHTS

In 2014 the program successfully enrolled patients in their Rapid Deployment Aortic Valve Replacement trials and continued their collaboration with Cardiology in Trans Aortic Valve Implant trial.

The group also had a PhD candidate enrolled in the Bleeding Management (Cardiac Surgery/ Critical Care/Anaesthetic programs).

The group's two research projects into analysing and identifying preoperative risk and outcomes for AVR in younger patients and in re-operative AVR for better clinical decision-making and management continued to progress well.

GRANTS

The Cardiothoracic Surgery Research Group received a grant through Metro North HHS for improving management of pre-operative anaemia in surgical patients.

PUBLICATIONS AND PRESENTATIONS

In 2014 the group had 15 peer-reviewed journal articles published and two presentations at the Australia and New Zealand Society of Cardiac and Thoracic Surgeons hosted at the Gold Coast.

AWARDS

Ms Bronwyn Pearse received two awards in 2014 the GU Post Graduate Scholarship from Griffith University and the NHMRC Centre of Research Excellence in Nursing PhD Support Award from NHMRC.

RESEARCH STUDENTS

The program has one MBBS Student through the University of Queensland.

RESEARCH COLLABORATIONS

The group has local collaborations with Metro North HHS, Critical Care Research Group, The University of Queensland, Queensland University of Technology and Griffith University.

> "Build a culture of quality and innovation."

Reducing the Pressure on Patients

When a person develops a pressure injury, it can completely disrupt everyday life. The unsightly injuries can be as deep as the bone, are extremely painful and can take years to heal fully. Sometimes, these injuries are so severe that a patient can lose a limb in the process. Luckily, the Critical Care Research Group in ICU at The Prince Charles Hospital are carrying out important research to try and reduce the number of pressure injuries that occur in the high-risk area of ICU.

The premise for the study was sparked in 2009, when John Fraser and the team had a great idea; they believed that with the help of some non-invasive imaging devices (thermal imaging, imaging and non-imaging laser Dopplers), they may be able to identify compromised perfusion of the skin before visible signs of pressure injuries before the sores became visible. The study is led by nurses from the Critical Care Research Group, Amy Spooner and Amanda Corley.

"Up until now, pressure injuries have been defined as a localised lesion that's due to sheer friction and pressure. But the definition doesn't look further and look at perfusion. So the skin needs blood to survive, and if that blood is not getting to the limbs, then the skin fails and they also develop a 'pressure' injury." – Amy Spooner
The passionate nurses are excited to discover the results of the study, which shouldn't be too far away.

Patients in the ICU are critically ill and skin perfusion may be severely compromised leading to the development of pressure injury despite optimal nursing care.

One of the most heartbreaking stories is of a young man, who after undergoing advanced therapies in ICU that lowered his blood pressure, developed a number of perfusion injuries.

Years later, he's still on severe pain medication to deal with the aftermath of that. "His only memory was the pain he experienced from that [the perfusion injuries]", Amy notes, "We may have cured him... but his quality of life was severely compromised."

If the research confirms their hypothesis, it could completely change the way that patients are cared for, especially when they're at high risk of developing pressure injuries due to poor skin and perfusion.

As Amanda notes, especially in the ICU ward, "The development of Pressure injuries goes beyond nursing care, we need to look at the critical illness of the patient and the impact their illness has on skin perfusion when developing appropriate pressure injury preventative strategies."

By making this differentiation and changing the way people think about pressure injuries, The Prince Charles Hospital and other hospitals around the world can optimise their ICU care, and hopefully stop these injuries from impacting so many patients.

Amy Spooner & Amanda Corley, Clinical Nurse Researchers

Allied Health Research Collaborative

RESEARCH HEAD

ASSOCIATE PROFESSOR
PETREA CORNWELL

Allied Health Research Collaborative's vision is to drive research excellence in the Allied Health disciplines in order to create and translate research evidence-based practice and improved patient outcomes.

The program has five streams of research each led by an Academic Research Fellow. These are Cardiothoracic, Ageing, Neurorehabilitation, Foot Disease, and Health and Well- being.

Within each of these five research streams, the aim is to use research to improve health outcomes for patients through the evaluation of screening programs, best practice interventions, prevention or reduction of long-term disability, and maximising life participation.

The Collaborative comprises researchers across the allied health disciplines including: occupational therapy, physiotherapy, psychology, speech pathology, social work, nutrition and dietetics, podiatry and psychology.

Broadly speaking allied health research seeks to "change the lives" of people living within our community. A number of our research streams focus on improving rehabilitation processes and outcomes for survivors of stroke; optimising the recovery and functioning of the frail, aged patient; and early identification and management of vestibular dysfunction (i.e. people who are dizzy, or fall) to prevent hospitalisation and increase life participation.

Other research streams are focused on early identification and management of foot disease (i.e. foot ulcers and infections) to prevent avoidable hospitalisation and leg amputations; examining the role of exercise in improving health outcomes for heart and lung patients; and maximising patients quality of life through considering the impact of chronic health conditions on varied aspects of everyday living such as mood, communication, eating and drinking, memory, and participation in basic life activities.

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RESEARCHERS

There are a variety of clinical benefits from this research including: early identification/ screening of health status in order to minimise long-term disability; providing patients with best practice treatment programs to facilitate recovery from surgery, including heart and lung transplant; ensuring treatment programs and models of care in rehabilitation maximise patient recovery; prevention of hospital admissions and re-admissions in a range of clinical groups, including the older patient through best practice treatment and support.

Research conducted by the Allied Health Research Collaborative occurs at "the coal-face" of health care. The patients are our research participants and so they are part of the research evidence as it evolves. The research conducted by the group seeks to improve in assessment techniques and treatment options available to our patients.

It also enables us to identify the most appropriate management for each patient group, with a focus on right patient, right place, and right time. The research can also ensure patients receive the most appropriate clinical management for their condition; that evidence based and cost effective treatment options are available; and that the staff treating them continue to question their practice and improve the service quality in a rigorous and systematic way.

HIGHLIGHTS

Two clinical members of the Allied Health Research Collaborative were awarded their PhDs in 2014. Dr R. Nicole Bellet from Griffith University and Dr Jack Bell from The University of Queensland.

The national and international profile of the group and its members continues to grow as evidenced by research grant collaborations and conference presentations.

> "Focus on improving rehabilitation processes and outcomes."

Mr Peter Lazzarini, became a co-investigator on a team to be awarded funding through the Queensland Government Accelerate Fellowship Grant to examine innovating technologies to aid early detection of diabetic foot ulcers.

Dr Jack Bell is a co-investigator on a team to be awarded funding through the Technology Evaluation of the Elderly Network, Canada. The project is titled More 2 Eat: Nutrition care pathway and optimised protein supplementation for malnourished elderly patients.

GRANTS

The group was awarded more than $2.1 million grants to support a range of Allied Health research.

PUBLICATIONS AND PRESENTATIONS

Dr Suzanne Kuys presented at the World Congress of Neurorehabilitation, Istanbul and the International Society for Posture and Gait Research Work Congress, Vancouver.

AWARDS

Ms Peta McKay received a New Investigator Award from the Australian Wound Management Association. Professor Norman Morris received Best Poster from the Pulmonary Hypertension Society of Australia and

New Zealand Meeting and Dr Petrea Cornwell received an Excellence in Clinical Research Award from The Prince Charles Hospital.

RESEARCH STUDENTS

The Allied Health Research Collaborative has 30 research students. Including, three honours students, 12 PhD students, 12 MPhil, three MRe students and one Masters of Applied Science student.

RESEARCH COLLABORATIONS

The group collaborates extensively with local, state and national health services, and numerous universities nationally and internationally. The group has extensive local and state-based research collaborations, including Royal Brisbane and Women's Hospital, Metro South, Community, Indigenous and Subacute Services, Redcliffe Hospital, Centre for Innovative Psychology Practice, Education and Research.

Collaborations also exist with Queensland University of Technology, James Cook University, Griffith University, Australian Catholic University, The University of Queensland, University of Southern Queensland, University of Sunshine Coast Hospital and Health Services: Gold Coast, Sunshine Coast, Townsville, Cairns and Hinterland, Central Queensland, Central West, West Moreton, Wide Bay, Mackay, Darling Downs, North West, South West.

Their national include, Wound Clinical Research Centre, University of Western Sydney, La Trobe University, Monash University, University of Adelaide, Curtin University Health Services: Liverpool Hospital, Royal Melbourne Hospital, Bendigo Health, Peninsula Health, Queen Elizabeth Hospital, Wounds West, and Royal Darwin.

Internationally the Allied Health Research Collaborative work with the University of Arizona, USA; University of Manchester, UK; Diabetic Foot Canada, University of Ottawa, University of Toronto, Canadian Malnutrition Task Force, Canada; University of West Indies, Jamaica; and International Working Group on the Diabetic Foot, The Netherlands.

Eloise Shaw, Research Scientist

The Journey Begins

A lung cancer scientist by day and a representative paintball competitor by weekend; this isn't the usual description for a 24 year old! Currently in her first year of her PhD, Eloise was one of the lucky few to receive the first New Investigator Grants awarded by The Prince Charles Hospital Foundation. From the initial grant, she was able to carry out her own study from start to finish before she'd even finished her honours degree. This momentum shot her into what is sure to be a long, exciting career.

Working with the University of Queensland Thoracic Research Lab at The Prince Charles Hospital, her current research looks at critical areas of lung cancer research, including early markers of the disease and some hundreds of mutations that occur in lung cancer patients. It's a continuation on from her original study with the hospital, which she says "developed me as a researcher... if it hadn't been for the Foundation, I may have not continued on doing research."

Eloise is on a mission to learn more about lungs and is especially interested in personal medication; that is, personalised treatment tailored to the individual's lung cancer mutations. She's also passionate about removing some of the stigma surrounding lung cancer, as she explains lung cancer "doesn't just affect old people, it affects young people and non-smokers."

She is a prime example of how investing in our young researchers can have massive impacts, not only on the individual, but on their entire field of study.

Nursing Research and Practice Development Centre (NRPDC)

RESEARCH HEAD

PROGRAM:
PROFESSOR PAUL FULBROOK

GROUP:
PRESSURE INJURY – SANDRA MILES

FALLS INJURY – CLINICAL ASSOCIATE PROFESSOR MELANIE JESSUP

EMERGENCY CARE – PROFESSOR PAUL FULBROOK

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PRESENTATIONS

Nursing Research and Practice Development Centre (NRPDC) undertake research aligned with TPCH Nursing Strategic Plan and The National Safety and Quality Health Service Standards.

This research aims to impact on the quality of care and outcomes; enhance the nurse-led research culture within the hospital; provide mentorship and facilitate research development, data collection, data analysis, and dissemination; provide research ethics and governance guidance; provide information regarding funding sources, and advise and collaborate with research grant applications; support and co-write research articles for local, national and international conferences and peer reviewed journal publications; facilitate clinicians in obtaining adequate funds to provide time away from their substantive roles to engage in research projects; support nurses to undertake higher degree by research; provide HDR students with supervision, a research community, office space and facilities from which to undertake their research.

NRPDC's research also aims to improve patient outcomes including; to prevent hospitalised patients developing pressure injuries; to reduce the incidence and harm associated with patient falls; to evaluate and improve emergency department patient experiences; by aiming to reduce time spent in the emergency department, and also using the opportunistic hospital presentation as a way for screening patients and introducing early interventions.

Along with facilitating a diverse programme of research that includes: patient experience, thoracic/cardiac care, emergency department care and system flow, and mental health care.

The focus on the areas of pressure injury and falls prevention is a hospital wide initiative and is linked to the National Safety and Quality Health Service accreditation standards. Reducing the impact of these two adverse events will improve patient and hospital outcomes, in terms of pain, extra treatment, increased hospital length of stay, and the financial and personal costs associated with these events.

The group's work is helping patients through:

- Reducing pressure injuries: review interventions for immobile ICU patients, compare wound products' ability to prevent wounds and promote healing, exploring nurses knowledge of skin management, assessing the incidence of pressure injuries via the emergency department (ED).
- Improving patient experience and outcomes by: exploring culturally appropriate care for Indigenous patients, exploring patient experience of bronchoscopy with cautious sedation, examining staff perceptions of their transition from adult to paediatric ED, expediting timely delivery of patient care by investigating the role of the nurse 'navigator',

> "Enhance the nurse-led research culture within the hospital."

- Reducing patient falls: investigating the effect of confidence on falls, investigating health professionals' knowledge of falls, investigating a nurse-led ED pathway for community based support;

examining waist circumference relationship with post- operative adverse outcomes;

- Improving mental health by: evaluation of screening and brief interventions.

HIGHLIGHTS

In recognition of her important research contribution to the NRPDC, the honorary academic title of Clinical Associate Professor was conferred by ACU to Dr Melanie Jessup, who is one of our research fellows.

Publication output from the Nursing Research and Practice Development Centre has been excellent with many colleagues contributing to peer-reviewed publications in high quality journals.

Research undertaken under the auspices of the Nursing Research and Practice Development Centre has been presented internationally, nationally and locally.

Whilst competition for research grants is tough, we have been successful in securing a good amount of funds, which have been instrumental in ensuring that nurses are provided adequate time to undertake rigorous research projects; The Nursing Research and Practice Development Centre also facilitates ACU higher research students, of which a majority is nursing staff employed within the hospital.

GRANTS

NRPDC was awarded over $120,000 in grant including a $74,000 grant from the Australian Centre for Health Services Innovation and $22,503 in project grants from the Prince Charles Hospital Foundation.

NRPDC also received a grant from Australian Catholic University's Faculty of Health Sciences for a pilot study into the presence of pressure injury in patients admitted to the emergency department via ambulance.

PUBLICATIONS AND PRESENTATIONS

In 2014 NRPDC contributed to 11 journals and made 13 presentations.

RESEARCH STUDENTS

The NRPDC supervised six PhD students, one Mphil student and one MNursRes student in 2014.

RESEARCH COLLABORATIONS

The group had numerous collaborations on the TPCH campus, along with these significant collaborations further abroad: Professor Linda Shields, James Cook University; Professor Nerida White, Australian Catholic University; Associate Professor Kerrianne Watt, James Cook University; Associate Professor Shawn Somerset, Australian Catholic University; Dr Aaron Conway, Queensland University of Technology; Dr Justin Boyle, CSIRO; Professor David Thompson, Australian Catholic University; Professor Rose Chapman, Australian Catholic University and Associate Professor Liz McInnes, Nursing Research Institute, St Vincent's Hospital. Internationally we work with Professor Maureen Coombs, Victoria University, Wellington, NZ.

Sara Diab, Research Scientist

Gastroenterology Research Program

RESEARCH HEAD

PROFESSOR TONY RAHMAN AND DR JOHN CROESE

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PUBLICATIONS

The Gastroenterology Research Program aims to maintain high quality auditing of processes and clinical product in relation to the provision of endoscopy services. From this, we've been lucky enough to be involved in a number of exciting projects in 2014.

One of our major goals in the future involves several trials; firstly, a randomised clinical trial testing if hookworm infection will restore gluten tolerance in coeliac disease. Other studies will include evaluating the immunobiology of hookworm infection, and a detailed evaluation of the impact of hookworm infection on the mucosal innate and adaptive responses to discrete gluten peptides.

We will also aim to develop the utility of redundant mucosal tissue collected for clinical reasons from patients with coeliac disease to evaluate novel candidate therapies, and undertake a parallel pilot studies evaluating the impact of hookworm infection on steatosis in a clinical setting and in a murine model, and incorporate this with an evaluation of hookworm infection on the microbiome both in a clinical setting and in a murine model.

The gastroenterology group is extremely important for patient health, at it looks at defining best practice in the field, and high quality gastrointestinal endoscopy is an ongoing need and underpins evidence based medicine. It is also looking at an alternative and safe treatment to replace a gluten-free diet in coeliac disease, as this is a huge and unmet need that will liberate 2% of affected Australians.

The Gastroenterology Research Group aims to better understand why people living in regular contact with parasites (third world conditions) have less chance of developing autoimmune and allergic diseases, and metabolic syndrome than Australians. We are in a unique situation to test hygiene related hypotheses surrounding this area of gastroenterology study.

We will also look to explore if clinical hookworm infection will contribute directly, and indirectly through an impact on the microbiome, to the management of obesity and related disorders (type-2 diabetes, cirrhosis and liver cancer), diseases that affect 60% of Australian adults, and is increasingly identified in children.

Also, the development of candidate therapies, particularly those that manipulate immune responses, that is an extremely protracted and expensive process.

An experimental model using human mucosa reliably and ethically collected ex vivo will expedite this process, allowing products with potential to be distinguished from those that might work in an animal model but not necessarily in people.

From a clinical point of view, we look to develop and validate in our unit, and communicate to the broader community some best practice processes to promote high quality gastrointestinal endoscopy.

We also look to develop an alternative and safe treatment to replace the need for a gluten-free diet in coeliac disease, a condition that affects nearly 2% of Australians.

Our auditing and reporting has and is continuing to produce improved processes in our Endoscopy Unit, an outcome that has been measured in terms of a greatly increased case load and more economical throughput, a more focused provision of service to accord with national guidelines, and a greatly increased detection and removal of premalignant colonic polyps.

Our presentations at scientific meeting are raising awareness of, and providing direction on, achieving best endoscopy. Although not yet translated into clinical practice, our research involving hookworms is providing a platform to progress what may prove game changing in our understanding and management modern epidemics.

HIGHLIGHTS

Publication of a pilot study in the Journal of Allergy and Clinical Immunology reporting the successful restoration of gluten tolerance in patients with longstanding coeliac disease, with the subsequent notification our manuscript recorded the second highest media interest of the thousands of papers that have been published by the Journal since starting this post publication activity measure.

The Gastroenterology Research Program produced the first reporting of the impact of clinical hookworm infection on the microbiome.

PUBLICATIONS AND PRESENTATIONS

Preparation and presentation of 8 abstracts relating to endoscopy service at national and international meetings.

AWARDS

Our Unit won the Queensland Health Annual Award for excellence, a reflection of service provision documented through documentation and presentations at national and international scientific meetings.

RESEARCH COLLABORATIONS

The Gastroenterology Research Program collaborates with The Prince Charles Department of Gastroenterology and Hepatology, The Australian Institute of Tropical Health and Medicine and James Cook University - The Centres for Biodiscovery & Molecular Development of Therapeutics.

Orthopaedic Research and Data Management Unit

RESEARCH HEAD

PROFESSOR ROSS CRAWFORD

The Orthopaedic Research and Data Management Unit aims to improve the quality of life of patients with osteoarthritis in need of joint replacement through improved surgical outcomes and prevention of disease progression.

Significant progress has been made in understanding the pathways post hip fracture and post joint replacement surgery.

The group is looking at slowing the progression of osteoarthritis by identifying modifiable factors for disease progression

HIGHLIGHTS

2014 Highlights for the grv oup included, The Prince Charles Hospital Foundation funded a project looking at the progression of osteoarthritis and obesity in mice.

Along with the unit's collaboration with the National Hip Fracture database the group aims to positively impact patients by identifying the optimal treatment for hip fractures.

RESEARCH COLLABORATIONS

The group collaborated locally with the Royal Brisbane and Women's Hospital, Queensland University of Technology and Ipswich Hospital. Nationally with Australian Orthopaedic Association National Joint Replacement Registry, Adelaide and St Vincent's Hospital, Melbourne.

We also have a significant international collaboration with Princess Elizabeth Orthopaedic Centre, Royal Devon & Exeter Hospital, Exeter, UK.

Medical Imaging Research Program including Cardiac Imaging Research Group

RESEARCH HEAD
MS WENDY STRUGNELL

The Medical Imaging Research Program offers Australia's largest Cardiac MRI service, encompassing both clinical and research activities within the Richard Slaughter Centre of Excellence in Cardiovascular MRI.

The group aims to undertake clinical research to progress the development of MRI as a diagnostic tool for congenital and acquired heart disease, including exploring the application of novel MRI technologies. We also look at 'Work-in-progress' sequences available to us through Research Collaborations Agreements in order to improve image quality, acquisition speed and accuracy of measurements.

Ultimately, this will help to guide clinical management in the future. The group also aims to continue improving patient safety through the optimization of acquisition protocols and radiation reduction in patients undergoing cardiac CT.

Patient care is also looked at by examining some of the major health issues that are addressed. This included insuring accurate MRI measurements of cardiac function for patients with congenital heart disease, ischaemic heart disease, cardiomyopathies and aortic disease. It also involves better understanding right heart function at rest and stress in pulmonary hypertension and normal controls, and understanding the impact of exercise training on right and left heart function in pulmonary hypertension, as well as early detection of myocardial fibrosis in hypertension.

A lot of the group's research is focused on reducing cost and length-of-stay through the investigation of Cardiac CT in the Emergency Department, including use of advanced computational fluid dynamics (CFD).The group aims to do this by focusing on accuracy and reproducibility of measurements of the left and right heart and of quantitation of valvular function, myocardial scar, and fibrosis, as well as developing

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PUBLICATIONS

normative data on right and left heart function during exercise stress and faster imaging of ventricular function to improve patient compliance and tolerance.

HIGHLIGHTS

This year the group was lucky enough to receive several awards and grants. This included the "New Technology Award", awarded at the Pulmonary Hypertension Society ANZ Conference for the report Exercise-Related Changes in Right Ventricular Function in Pulmonary Hypertension as Measured Using Cardiac MRI: Preliminary Data by Morris N, Seale H, Strugnell W, Hall K, Hamilton-Craig C , Kermeen F.

Lastly, we received a fantastic grant from CAESIE: Connecting Australian European Science & Innovation Excellence, The Priming Grant 2014. This was awarded to Thoralf Niendorf (Berlin Ultra High Field Facility) & Graham Galloway, Ian Brereton, Mark Strudwick, Christian Hamilton-Craig (UQ). CAESIE is a bilateral partnership initiative program between the European Union and Australia. It is specifically targeted to establish science and technology collaboration and partnership between small to medium enterprises (SMEs) businesses and researchers (in Europe and Australia)

> "To improve image quality, acquisition speed and accuracy of measurements."

The second major award was receiving the "Richard Slaughter Best Clinical Research Project" at TPCH Research Forum, for our study "Radial and Circumferential Strain using tissue tracking from CV- Sparse Imaging at rest and with MRI Exercise Ergometry".

GRANTS

Dr Christian Hamilton-Craig was awarded a $60,000 Academic Title Research Grant from the University of Queensland.

PUBLICATIONS AND PRESENTATIONS

The Medical Imaging Research Group published eight papers in 2014.

AWARDS

Dr Norman Morris received the New Technology Award at the Pulmonary Hypertension Society ANZ Conference. Dr Christian Hamilton-Craig was awarded Richard Slaughter Best Clinical Research Project at the TPCH Research Forum.

RESEARCH STUDENTS

The Medical Imaging Research Program supervised one PhD student from the UQ School of Medicine.

RESEARCH COLLABORATIONS

The group collaborated locally with the Cardiology Program, TPCH Critical Care Research Group, TPCH Queensland Lung Transplant Service, TPCH Department of Physiotherapy, Professor Graham Galloway and the Centre for Advanced Imaging at University of Queensland and Professor Norman Morris, School of Allied Health Sciences at Griffith University.

Along with collaborations with Dr Andre LaGerche, St Vincent's Hospital, Melbourne; University of Melbourne; Siemens Healthcare, Erlangan, Germany; Cardiology and Radiology Programs at the University of Washington, Seattle USA.

EDITORIAL POSITIONS

Dr Christian Hamilton-Craig was an invited reviewer for eight journals and an Editorial Board Member for the World Journal of Cardiology.

Dr Eamonn Eeles, Geriatrician & Dementia Researcher

Getting a Wriggle On

Would you turn down retirement to work on breakthrough research? Dr John Croese has done just that, and decided to delay hooking worms on a rod, to work with hookworms in a lab. Collaborating with a team at James Cook University, he's swapped fishing days for a clinical trial that's the first of its kind.

After working in gastroenterology for most of his career, Dr Croese stumbled across a special hookworm that has the chance to stop symptoms for people with coeliac disease. The original trial in 2014 attracted a huge amount of public interest; after being published in tier-one journal JACI, the team were also featured on major news sites such as the ABC.

And it's no wonder why: the 2% of the population diagnosed as being coeliac have a lot to gain. The effects don't just include physical symptoms such as gastrointestinal issues, fatigue and joint pain. Sticking to a gluten-free diet can cost up to twice as much as buying regular groceries, and make it difficult to partake in everyday activities such as eating out or enjoying a meal at a friend's house.

Now that the initial trial has been a huge success (both in the lab, and in the public eye), it's time to get down to business and really drive this study home. The unbiased clinical study will take place over the next few years, and confirm whether initial results were a good indication of this little hookworm's abilities.

From the initial trial, it looks as if treatment may be as easy as a small patch of these parasites being placed on the skin just once a year. Not only would it change the lives for many coeliac sufferers, but it is also virtually free and doesn't have the nasty side effects of strong drugs often used to control serious symptoms.

As Professor Tony Rahman (the head of gastroenterology at The Prince Charles Hospital) notes, "That's why getting funding for this thing is quite difficult, because it's not something that someone can make loads of money from.

That's why The Prince Charles Hospital Foundation grant is really very well received, because they can see the bigger picture, and it's really more about the common good."

Dr John Croese is thankful they've had generous funding and a huge amount of public interest in the topic. He hopes the study will eliminate the stigma surrounding using parasites to treat people with diseases, and help medical institutions around the world adopt new processes for treating coeliac disease.

Dr John Croese & Professor Tony Rahman

THE PRINCE CHARLES HOSPITAL FOUNDATION

Internal Medicine Services

RESEARCH HEAD

DR EAMONN EELES, IMS RESEARCH AND DR. CHRYS PULLE, IMDRU, NOFEAR

Internal Medicine Services is made up of the Internal Medicine and Dementia Research Group (IMDRU) and NOFEAR (Ortho Geriatrics; Neck of Femur Education and Research)

The interdisciplinary research group has a track record of generating and fostering a research culture along with creating and testing innovative alternatives for better patient care.

Diverse research interests range from; collaborations to test new diagnostic modalities, inception and development of better screening tools in delirium, use of pragmatic action research cycle, translational research into standard treatment, rollout of tried and tested models of care across the HHS whilst providing trials of new potentially disease modifying therapies.

The research groups are overseen by IMS Research Committee which aims to provide a centre of research excellence driving clinical improvement.

The committee provides leadership & support to enable research and provides governance of research undertaken within the program wards to balance burden of research with clinical activity.

The committee aims to provide peer review to researchers to optimise study proposals available for all interdisciplinary clinicians.

Internal Medicine research addresses numerous health facets for the diverse patient cohort to which the program serves.

Specifically areas of health research include:

- Delirium e.g. development of key indicators in delirium
- Dementia e.g. RCT of Recreational therapy in dementia
- Falls Patient flow and Pathways e.g. The 4F pathway
- Hip Fracture e.g. pragmatic nutritional intervention in hip fracture
- Oncology and Cancer care e.g. RCT of novel therapies in mesothelioma
- Frailty including goal setting, capacity/decision making, pain and pressure injuries

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PRESENTATIONS

- Stroke and other acquired brain injury studies focused on patients returning to driving, mobility outcomes, presence of anaemia, community re-integration, continence and mood disorders.
- Functional impairment and treatment outcomes

Our goal is to make clinical care better. Interdisciplinary clinically based research is a driver for the continuation of contemporary evidenced based clinical practice. Empowering clinician involvement in research is also an enabler for personal and professional skill development and continuation of quality improvement cycles.

Research undertaken in the IMDRU assists in the improvement of a diagnosis, the assessment of risks & the opportunity for patients to trial possible new treatments in the area of cognitive decline & Alzheimer's disease. Research initiatives & outcomes benefit the patient journey & experience to ensure all patients have equitable access to diagnostics, treatments, interventions and follow-up. Further research projects have demonstrated how pragmatically focused action research studies provide a platform for identifying, implementing, evaluating and publishing improvements to clinical care within the scope of routine clinical practice.

HIGHLIGHTS

In 2014 IMDRU Highlights included a Program Grant PRO2014-10 Predicting cholinesterase inhibitor response in patients with dementia to Dr Stella Lin.

Whilst 'Screening in delirium: Simple Query for Easy Evaluation of Consciousness (SQeeC).' won the RM Gibson award at national conference (ANZSGM).

Dr Donna Pinsker received an IMS Bursary Award from Internal Medicine Services for 'diagnostic accuracy in dementia' - Ongoing International Clinical Drug Trials for Alzheimer Disease.

Research undertaken in Internal Medicine and NOFEAR assists in the search for a cure, diagnosis, assessment of risks and the opportunity for patients to trial possible new treatments in the area of cognitive decline, Alzheimer's disease, Clostridium Difficile and Fractured Neck of Femurs. Research initiatives and outcomes benefit the patient journey and experience to ensure that all patients have equitable access to diagnostics, treatments, interventions and follow-up.

PUBLICATIONS AND PRESENTATIONS

The group gave 32 oral and poster presentations along with 11 new publications in 2014 and three book chapters.

This included six advanced trainees presenting at national conference level and Tik Chan presenting 'The Effect of Anaemia on the functional outcomes of the stroke patients' at the 9th World Stroke Congress in Istanbul, Turkey.

AWARDS

Kevin Clark and Sarah Sullivan were awarded Best Oral Presentation at the Health Round Table presentation "DUIT in a Day – the Redesign Processes".

Dr Stella Lin received an award for Best Oral Presentation at ANZSGM ASM.

Dr Donna Pinsker received an IMS Bursary Award from Internal Medicine Services for 'diagnostic accuracy in dementia' – Ongoing International Clinical Drug Trials for Alzheimer Disease.

RESEARCH COLLABORATIONS

The group collaborates with Critical Care at The Prince Charles Hospital, Queensland Brain Institute and CSIRO, along with The University of Melbourne.

The group also has a significant international collaboration with The University of Edinburgh.

Oncology Services Research

RESEARCH HEAD
DR BRETT HUGHES

We foster an ethos to undertake clinical trials which will improve treatments and treatment outcomes for our patients. This has been reflected in major changes to the treatment regimes our patients now receive. During 2014 we actively recruited to seven pharmaceutical sponsored and collaborative group studies and followed patients in two studies which have closed to recruitment.

The unit is highly active in the participation of studies focusing on new therapies in the different stages of lung cancer. Studies include the various stages of lung cancer treatment (adjuvant through to metastatic disease) and mesothelioma.

The program is involved in international studies that investigate novel therapies. These therapies have changed outcomes for patients, such as the Accalia, study which included Alectinib for participants with ALK mutation positive lung cancer. The program is also a leading collaborator with the ALTG.

The studies undertaken in the program often involve treatments that are less invasive as compared to standard treatments, which can impact on the quality of life for the participants. The investigational drugs are often well tolerated, and the participants experience less side effects, and to a lesser extent. The treatments potentially increase the participant's survival.

HIGHLIGHTS

Some of the highlights for the program include the group relocating to a new unit, located centrally with all of the Cancer Care Services team along with looking forward to gaining more staff.

RESEARCH COLLABORATIONS

The Oncology services Research Group collaborated with the Australasian Lung Cancer Trials Group (ALTG) in New South Wales and the National Cancer Institute of Canada (NCIC).

Going Global

It's a bionic heart unlike anything we've seen before, a remarkable mix of engineering, medical research and sheer bloody mindedness that emerged from Brisbane's northern suburbs.

How will this bionic heart change lives?

Its developers prefer you ask a patient. Someone who has walked that most anguished of paths – waiting for a heart transplant while their life hangs in the balance.

Madison Annibale did that seven years ago, arming herself with a ventricular assist device that kept her ailing heart beating while a donor heart was found.

If the battery on that device faltered, Madison would be close to death.

It was a devastating reality for a Cairns teenager who had thought she was a healthy teenager. That was until a sick day from her job in a supermarket turned into a dash from Cairns to Brisbane to fix a heart that was functioning at only 18 per cent.

"I really didn't leave the house much while I was waiting for that heart to be found," Madison, now 25, recalls.

"I went to the shops twice, I think, because I just didn't want to be far from home in case something went wrong. My mum had to learn to hand-pump the device in case the battery failed.

And I was lucky because I had a heart transplant about 60-something days after I was first diagnosed with heart failure.

There are so many people who are not as lucky as that."

That agonising wait will end for patients if Professor John Fraser's team can deliver on their goal - to improve bionic hearts and lungs and give life back to patients like Madison.

Professor Fraser has assembled, in his words, a football team from across the world to develop this idea from Brisbane's north.

It all started a few suburbs away from The Prince Charles Hospital with engineer

Daniel Timms – the son of a Brisbane plumber who was carrying a terminal heart condition.

Dr Timms and his father Gary messed around with products bought from a hardware store as they developed their working model of a bionic heart.

Dr Timms left QUT to join Prof Fraser's Critical Care Research Group at The Prince Charles Hospital – an engineer mixing with the medical experts.

In those early years, The Prince Charles Hospital Foundation played a critical role in funding the research.

The team has grown as Prof Fraser and Dr Timms have sought input from across the world including the United States, Germany, Ireland, France, Italy, Taiwan, China, Malaysia, Singapore and Korea.

Seven hospitals and universities from Australia are now also playing a role in the research.

"Dan's brilliant BiVACOR device was assisted by a whole pile of brilliant people here - but we just couldn't get the funding to continue in Australia. He and the majority of the remaining work had to go to the US to find the funding that was impossible to find in Australia.

However - we learned a huge deal from trying to advance this science through BiVACOR and bring a better life to people like Madison.

We realised more and more that we needed a committed team who would work day and night, with or without funding.

We also realised that we needed to get the best minds in the business to pitch in their brilliance to achieve the unimaginable - bionic hearts and lungs."

Prof Fraser, a lifelong Celtic fan from Glasgow in Scotland, says all research can be boiled down to football.

"You can't have a team of 11 strikers and you can't have a team of 11 goalkeepers. You need a mix and we've got that," Prof Fraser said.

"This is silo-free research. It's the engineers mixing in with the scientists and the clinicians. This gets the teamwork going and it ensures that the patient is not forgotten. And the patient is the most important person.

My old boss Dr McCarthy said: 'You will always learn more from the patient than you will teach the patient'. It's easy to forget this.

We're at a point now where bionic hearts and lungs are closer than people think."

In 2014, Prof Fraser's team gained one of the nation's most prized funding sources – a Centre for Research Excellence grant of $2.5million over five years. The project's working title is ACTIONS: Advanced Cardio-respiratory Therapies Improving Organ Support.

But research of this size takes more than that. So The Prince Charles Hospital Foundation launched The Common Good initiative to help this research and other areas that will improve lives across the globe.

"It's going really well and it's easily the largest research project ever at Prince Charles Hospital," Prof Fraser said.

"We want to become the centrepoint for developing bionic hearts and lungs across Asia. People from all over the world are coming here to be part of it.

The last year has been one of building. We've done the training and we're about to start the race. We've built it bigger than I thought we could."

They have successfully leveraged their funding to more than $9 million, with PhDs and scientists coming from all across Australia, Asia, USA and Europe to join the juggernaut at TPCH.

"So, we have the funding to make people's lives better but it can be so easy to drop the ball. This is people's money and it's a big responsibility," Prof Fraser said.

"If no patient has an improved outcome over five years then we've failed."

The biggest breakthrough in bionic hearts was made late last year when a device was implanted into a sheep at The Prince Charles Hospital.

The fist-sized heart, refined in the US over the last two years, has no pulse – it works on a loop like a pool pump.

And the sheep was fine – awake and eating six hours later and only a few suburbs from where this idea was first spawned.

Gary Timms didn't live to see the bionic heart that he helped to kick-start with his knowledge of plumbing. He died in 2006.

While Madison Annibale was lucky enough to survive her heart transplant, she knows the importance of research in helping to make lives better.

"It's just invaluable. We need that funding to keep making the possibilities better and better," she said.

Madison hopes to factor in the work the team is doing in bionic hearts and lungs into a new project she's planning.

She has studied gaming and interactive entertainment at university and wants to use that knowledge to develop a program that helps young patients through heart transplants.

"I want it to include a doctor simulation exercise that enables the patient to try doing their own heart transplant. That will help them learn what is about to happen," Madison said.

"I'm just so glad to hear about the new research. It's exciting."

Madison was asked to open this year's annual ICETLAB day symposium, telling her story to a group of professors, doctors, engineers and scientists

"It's appropriate that she opens this meeting." Prof Fraser said. "The bravery people like Madison show on a daily basis makes all the work worthwhile."

Maria Martins, Scientist and Research Lab Manager & Janet Shaw, Research Scientist

Grants

Project Title	Chief Investigator	TPCH Investigator	Granting Agency	Total Funding Awarded	Funding received for 2014-15	Years of Funding	Grant Type
Defining Right Ventricular during exercise in pulmonary hypertension.	Norm Morris	Norm Moriss, Fiona Kermeen	Actelion Pharmaceuti-cals Investiga-tor Initiated	$75,500.00	25,000.00	2014-17	Unrestricted Education Grant
Pilot study: the presence of pressure injury in patients admitted to the emergency department via ambulance	Prof Paul Fulbrook	Ms Sandra Miles and Dr Frances Kinnear	ACU Faculty of Health Sciences	$13,000.00	$13,000.00	2014-2015	Project Grant
Obesity and the risk of septic complications following major abdominal surgery	Dr Usha Gurunathan	Dr.Usha Gurunathan, Dr. Ivan Rapchuk	ANZCA	$3,000.00	$3,000.00	2014	Project Grant
Implementation, evaluation and efficacy of a Navigator Nurse with regard to supporting flow in the ED Department (NAVIGATOR)	Paul Fulbrook	Paul Fulbrook, Frances Kinnear	AusHSI	$75,000.00	$75,000.00	2014-2015	Project Grant
Improving the cancer journey and travel burden for remote patients	Doyle, Fong	Kwun Fong	AusSHI	$76,172.00	$76,172.00	2014	Project Grant
Electronic Snapshot for Outpatient Management of COPD (ESO-COPD)	Doyle, Yang	Ian Yang	AusSHI	$8,589.42	$8,589.42	2014	Project Grant
A survey-based approach to the assessment of health, physical function, self-efficacy and falls risk in stroke survivors and their carers.	Nancy Low Choy	Nancy Low Choy	Australian Catholic University Faculty	$16,000.00	$16,000.00	2014-2015	Project Grant
Implementation and evaluation of an emergency department 'Navigator' role to improve timely delivery of patient care	Prof Paul Fulbrook	Dr Frances Kinnear and Dr Melanie Jessup	Australian Centre for Health Services Innovation	$74,000.00	$74,00.00	2014-2015	Project Grant
Disease tolerance and transplant tolerance – two sides of the same coin?	Daniel Chambers	Daniel Chambers, Stephanie Yerkowich	Australian Respiratory Council	$47,743.00	$47,743.00	2014	Project Grant
SANITY study (Silent and Apparent Neurological Injury in Transcatheter Aortic Valve Implantation).	Jonathon Fanning		Cardiac Society of Australia and New Zealand	$45,000.00	$45,000.00	2014 - 2015	Scholarship
Airborne transmission of microorganisms among person with cystic fibrosis	Scott Bell	Scott Bell	CF Foundation (USA) Therapeutics Inc	US$216,000.00	US$108,000.00	2015-2017	Project Grant

Project Title	Chief Investigator	TPCH Investigator	Granting Agency	Total Funding Awarded	Funding received for 2014-15	Years of Funding	Grant Type
PREDICT study (Predictive equations for estimating resting energy Demand in Critically ill Patients	A. Marshall	E. Robins	GCH Private Practice Funding	$50,000.00	$50,000.00	2014-15	Project Grant
Functional outcomes for patients at 6 and 18 weeks follow up after fractured neck of femur: a randomised control trail	Ferrier, R.	Ferrier, R.	Health Practitioner Grant	$19,565.00		2014-2015	Project Grant
Evaluation of health care utilisation benefits following pulmonary rehabilitation across twenty programs throughout QLD	Walsh, J.	Walsh, J.	Health Practitioner Grant	$26,242.00		2014-15	Project Grant
Predicting who is at risk of worsening lung disease in Cystic Fibrosis	Peter Wark	Scott Bell	Hunter Medical Research Institute	$50,000.00	$25,000.00	2015-2017	Project Grant
How transmissible is influenza by the airborne route?	Graham Johnson	Scott Bell	Institute of Health and Biomedical Innovation	$30,000.00	$15,000.00	2013-2014	Project Grant
The Endothelial Glycocalyx in Acute Traumatic Coagulopathy.	Elissa Milford	John Fraser	Intensive Care Foundation	$3,400.00	$3,400.00	2015	Intensive Care Foundation
PhD Scholarship in Lung Cancer - Lung Foundation of the Australia	Ian Yang, Rayleen Bowman and Kwun Fong	Ian Yang, Rayleen Bowman and Kwun Fong	Lung Foundation of Australia	$45,000.00	$15,000.00	2014-2017	Scholarship
Children's Oxygenation Administration Strategies Trial (COAST)	Kathryn Maitland	Nikki Blackwell John Fraser	Medical Research Council, United Kingdom	$4,3M	$4.3M	2014	Medical Research Council, United Kingdom
Improve care of older non-elective orthopaedic surgery patients across MNHSSD by sharing, diffusing and strengthening successful innovative models developed within the district	A. Mudge	Jack Bell	Metro North HHS	$96,000.00	$96,000.00	8 months	Project Grant
Improving Management of Pre-Operative Anaemia in Surgical Patients	B Pearse	B Pearse	Metro North HHS	$79,745.00	$79,745.00	2014-15	Project Grant: SEED Funding
Centre for Research Excellence in advanced cardio-respiratory therapies improving organ support (ACTIONS)	John Fraser	Shaun Gregory	National Health and Medical Research Council	$2,491,450.00	$701,731.00	2014-2019	Centre of Research Excellence

Project Title	Chief Investigator	TPCH Investigator	Granting Agency	Total Funding Awarded	Funding received for 2014-15	Years of Funding	Grant Type
Giving an adult life after Fontan surgery to those with the most severe congenital heart conditions	Yves d'Udekem	Dorothy Radford	National Health and Medical Research Council	$1,250,181.00			
High flow cannula therapy in bronchiolitis, a randomised controlled trial	Andreas Schibler	John Fraser	National Health and Medical Research Council	$1,242,929.00	$414,309.67	2015-2017	Project Grant
Transfusion Triggers in Cardiac Surgery Australia trial (TRICS-III)	Alistair Royse	John Fraser	National Health and Medical Research Council	$1,379,436.00	$459,812.00	2015-2017	Project Grant
The role of iron in promoting lung infection in people with cystic fibrosis	Daniel Smith	Daniel Smith	National Health and Medical Research Council	$82,144.00	$25,000.00	2012-2014	Scholarship
Practitioner Fellowship	David Reid	David Reid	National Health and Medical Research Council	$300,000.00	$60,000.00	2010-2015	Fellowship
Mutations in the haemochromatosis gene.	David Reid	Scott Bell, Daniel Smith.	National Health and Medical Research Council	$629,661.00		2015-2017	Project Grant
Identification of the mechanisms of liver fibrogenesis and the detection and prediction of clinical outcomes in paediatric cholestatic liver disease.	Grant Ramm	David Reid	National Health and Medical Research Council	$602,878.00	$200,000.00	2012-2015	Project Grant
Identification of Progressive Disease in Idiopathic Pulmonary	Corte T	Hopkins P	National Health and Medical Research Council	$655,210.00		2014-2016	Project Grant
Combining immune monitoring and immunotherapy to tackle cytomegalovirus infections in solid organ transplant patients	Khanna R	Daniel Chambers	National Health and Medical Research Council	$778,168.00		2014-2016	Project Grant
Protracted bacterial bronchitis: long term outcomes, systemic and airway predictors of recurrence.	Chang, A	Stephanie Yerkovich	National Health and Medical Research Council	$777,376.76		2013-2016	Project Grant
Effect of augmenting a home exercise program with insole biofeedback on balance and gait parameters of stroke survivors	Candice West	Nancy Low Choy	National Stroke Foundation Honours Grant	$3,000.00	$3,000.00	2014	Project Grant

Project Title	Chief Investigator	TPCH Investigator	Granting Agency	Total Funding Awarded	Funding received for 2014-15	Years of Funding	Grant Type
Investigation of suppurative lung diseases	Scott Bell	Scott Bell	Office of Health and Medical Research	$750,000.00	$150,000.00	2011-2016	Fellowship
Airborne transmission of microorganisms in lung disease	Scott Bell	Scott Bell	Perpetual Philanthropy	$47,000.00	$19,000.00	2015-2017	Scholarship
Capacity Building Fund	Frances Kinnear	Frances Kinnear	QEMRF	190,000.00	$90,000.00	2011-2015	Capacity Building Grant
Identifying and overcoming barriers to nutritional care in hip fracture	Jack Bell	Jack Bell	QH Tas	$23,817.00	$23,817.00	2014-15	Project Grant
QIMR-Clinician Research Collaboration Award	John Miles	Scott Bell, Rachel Thomson	QIMR Berghofer	$50,000.00	$30,000.00	2013-2014	Project Grant
Clinical Research Fellowship	David Reid	David Reid	Queensland Government	$750,000	$150,000.00	2011-2016	Fellowship
Checking Pathology results in an Emergency Department: An integrated IT solution to ensure patient safety	Peter Rizzo	Peter Rizzo, Michael Watson, Anthony Nguyen	Queensland Health - SEED Innovation Fund	$83,004.05 SEED $54,784.00 CSIRO TOTAL: $137,788.00	$83,004.05 SEED $54784.00 CSIRO TOTAL: $137,788.00	2014-2015	Project Grant
Cognitive Behavioural Therapy (CBT) for patients with chronic lung disease undergoing pulmonary rehabilitation	Marsus Pumar	Marsus Pumar, Ian Yang, James Walsh, Tricia Rolls	Queensland Health - SEED Innovation Program 2014	$15,710.00		2014-2015	Project Grant
Cognitive Behavioural Therapy (CBT) for patients with chronic lung disease undergoing pulmonary rehabilitation	Marsus Pumar	Marsus Pumar, Ian Yang, James Walsh, Tricia Rolls	Queensland Health - SEED Innovation Program 2014	$15,710.00		2014-2015	Project Grant
Health Research Fellowship	Daniel Chambers		Queensland Health (Office of Health and Medical Research)	$750,000.00	$125,000.00	2011-2015	Fellowship
Understanding the impact of abnormal iron homeostasis in the CF lung	David Reid	David Reid	Rebecca Cooper Foundation	$21,728.00	$21,728.00	2014-2015	Project Grant
Evaluation of a silicone gel adhesive hydrocellular foam dressings for the prevention of sacral pressure injuries in hospitalised elderly patients	Prof Paul Fulbrook	Mr Damian Williams	Smith and Nephew	$12,141.00	12,141.00	2014-2015	Industry Sponsor
Reducing Pressure Injuries, to improve Patient outcomes and Reduce Health Care Costs.	John Fraser	Amy Spooner	The Metro North Hospital and Health Service Executive Group	$123,254.00	$123,254.00	2014	Project Grant

Project Title	Chief Investigator	TPCH Investigator	Granting Agency	Total Funding Awarded	Funding received for 2014-15	Years of Funding	Grant Type
High Flow Nasal Cannula (HFNC) Treatment for Viral Bronchiolitis: A randomised control trial to investigate the effect on carbon dioxide (CO2) Levels.	Michelle Davison	Michelle Davison, Frances Kinnear, Michael Watson	TPCH Foundation	$9,950.00	$9,950.00	2015-2016	New Investigator Project Grant
Does the implementation of a potty decrease the time to collection of a urine specimen in non toilet trained paediatric patients in the Emergency Department?	Jeanette Probyn	Jeanette Probyn, Julie Craig, Andrea Meade, Michelle Davison, Michael Watson	TPCH Foundation	$3,894.00	$3,894.00	2015-2016	New Investigator Project Grant
Assessing Risk in Sepsis using Tissue Oxygen Saturations (ARISTOS) study	Hanh Pham	Hanh Pham, Frances Kinnear, Michael Watson	TPCH Foundation	$10,000.00	$10,000.00	2015-2016	New Investigator Project Grant
Endothelial Glycocalyx Breakdown Products in the Blood – Biomarkers of organ quality in lung donors?	Sladden , T	Sladden , T	TPCH Foundation	$9,932.00	$9,932.00	2014	New Investigator Project Grant
Tackling Pulmonary Antibody-Mediated Rejection by Targeting Circulating Donor Specific B Cells (DSB)	Daniel Chambers	Daniel Chambers, Stephanie Yerkovich	TPCH Foundation	$99,524.00	$99,524.00	2015	Project Grant
Protecting the glycocalyx to improve lung transplant outcomes	Daniel Chambers	Chambers, Hopkins P, Yerkovich S, Wall D, Hunt B, Smith I	TPCH Foundation	$195,609.80	$195,609.80	2014-2016	Program Grant
The 'Normal Pulmonary Flora' – Fact or Fiction?	Daniel Chambers	Daniel Chambers, Stephanie Yerkovich	TPCH Foundation	$87,861.03	$87,861.03	2014	Project Grant
Phosphodiesterase 2,3 and 4 control of arrhythmias in the human heart	Peter Molenaar		TPCH Foundation	$99,313.00	$99,313.00	2014-15	Project Grant
The lung microbiome in coexisting COPD and bronchiectasis	Ian Yang	Yang, Reid, AIs Bruke, Smith, Chambers, Krause, Masel, Reddy, Fong, Bowman	TPCH Foundation	$99,288.00	$99,288.00	2015	Project Grant
Translational Value of Sequencing the Mesothelioma Genome		Bowman, Relan, Fong	TPCH Foundation	$99,288.00	$99,288.00	2015	Project Grant
The lung's response and defence to the environment and ageing.		Annalicia Vaughan	TPCH Foundation	$76,176.00	$76,176.00	2015	Scholarship

Project Title	Chief Investigator	TPCH Investigator	Granting Agency	Total Funding Awarded	Funding received for 2014-15	Years of Funding	Grant Type
Blood-platelet-endothelial interactions in varying widths of microvasculature following transfusion with stored platelets	Monica Narula	John Fraser (Mentor)	TPCH Foundation	$10,000.00	$10,000.00	2014	New Investigator Project Grant
Design and validation of a compliant, banded outflow cannula for decreasing the after-load sensitivity of rotary right ventricular assist devices	Emma Schummy	Shaun Gregory (Mentor)	TPCH Foundation	$9,967.37	$9,967.37	2014	New Investigator Project Grant
Design and validation of a mock circulation loop for particle image velocimetry evaluation of prosthetic heart valves	Arianna Di Nucci	Shaun Gregory (Mentor)	TPCH Foundation	$9,989.22	$9,989.22	2015	New Investigator Project Grant
Developing a novel methodology to interrogate transcriptomic changes in a sheep model of sepsis: towards improved understanding of pathophysiology, effects of therapy, and outcomes	Nihal Kumta	John Fraser (Mentor)	TPCH Foundation	$9,910.50	$9,910.50	2014-2015	New Investigator Project Grant
Developing a permanent tissue integration of a suture-less inflow cannula using melt electrospinning technology	Sam Liao	Shaun Gregory (Mentor)	TPCH Foundation	$9,995.12	$9,995.12	2014	New Investigator Project Grant
Development and characterisation of ovine platelet units for comparison with human platelets in order to expand research in the field of transfusion medicine.	Sara Diab	Kirn Shekar (Mentor)	TPCH Foundation	$9,993.30	$9,993.30	2014	New Investigator Project Grant
Development if a device for the securement of ECMO Cannulas	Cliona O'Sullivan	Kimble Dunster (Mentor)	TPCH Foundation	$9,462.48	$9,462.48	2015	New Investigator Project Grant
Development of a Less-Invasive Cannulation System for Right Ventricular Assist Devices	Kai Gromann	Shaun Gregory (Mentor)	TPCH Foundation	$9,998.19	$9,998.19	2015	New Investigator Project Grant
Development of a Novel Third Generation Biventricular Assist Device	Yunhui Chen	John Fraser (Mentor)	TPCH Foundation	$9,900.00	$9,900.00	2014	New Investigator Project Grant

Project Title	Chief Investigator	TPCH Investigator	Granting Agency	Total Funding Awarded	Funding received for 2014-15	Years of Funding	Grant Type
Evaluation of Ventricular Flow Dynamics with Rotary Blood Pumps Using Particle Image Velocimetry	Eleonore Bolle	Shaun Gregory (Mentor)	TPCH Foundation	$9,729.22	$9,729.22	2015	New Investigator Project Grant
Flow characteristics of adult aortic cardio-pulmonary bypass cannulae as determined by particle image velocimetry	Camille Ribolzi	Shaun Gregory (Mentor)	TPCH Foundation	$9,976.77	$9,976.77	2014	New Investigator Project Grant
Understanding immune dysregulation in sepsis: Investigating immunological changes in cells of the innate and adaptive immune systems in an ovine model of sepsis and their response to different resuscitation therapies	Kavita Bisht	Colleen Olive (Mentor)	TPCH Foundation	$9,991.00	$9,991.00	2014-2015	New Investigator Project Grant
Design and validation of a compliant, banded outflow cannula for decreasing the after-load sensitivity of rotary right ventricular assist devices	Emma Schummy	Shaun Gregory (Mentor)	TPCH Foundation	$9,967.37	$9,967.37	2014	New Investigator Project Grant
Design and validation of a mock circulation loop for particle image velocimetry evaluation of prosthetic heart valves	Arianna Di Nucci	Shaun Gregory (Mentor)	TPCH Foundation	$9,989.22	$9,989.22	2015	New Investigator Project Grant
Developing a permanent tissue integration of a suture-less inflow cannula using melt electrospinning technology	Sam Liao	Shaun Gregory (Mentor)	TPCH Foundation	$9,995.12	$9,995.12	2014	New Investigator Project Grant
Development of a Less-Invasive Cannulation System for Right Ventricular Assist Devices	Kai Gromann	Shaun Gregory (Mentor)	TPCH Foundation	$9,998.19	$9,998.19	2015	New Investigator Project Grant
Development of a Novel Third Generation Biventricular Assist Device	Yunhui Chen	John Fraser (Mentor)	TPCH Foundation	$9,900.00	$9,900.00	2014	New Investigator Project Grant
Flow characteristics of adult aortic cardio-pulmonary bypass cannulae as determined by particle image velocimetry	Camille Ribolzi	Shaun Gregory (Mentor)	TPCH Foundation	$9,976.77	$9,976.77	2014	New Investigator Project Grant

Project Title	Chief Investigator	TPCH Investigator	Granting Agency	Total Funding Awarded	Funding received for 2014-15	Years of Funding	Grant Type
Transcatheter Aortic valve intervention: In vitro phantom study of paravalvular leaks.	Maureen Ross	Christian Hamilton-Craig (Mentor)	TPCH Foundation	$9,520.23	$9,520.23	2015	New Investigator Project Grant
Pulmonary Rehabilitation in Chronic Obstructive Pulmonary Disease: the relationship between anxiety and depression and physical activity	Peasey M	Peasey M, Morris N, Walsh J	TPCH Foundation	$9,741.68		2014-2016	New Investigator Project Grant
Towards an improved understanding of the effect of a speaking valve on lung volumes and communication in the critically ill tracheostomised patient	Anna-Lisa Sutt		TPCH Foundation	$76,176.00	$76,176.00	2015-2017	Phd Scholarship
Advanced Cardio-respiratory Therapies Improving Organ Support (ACTIONS)	John Fraser	Shaun Gregory, Kiran Shekar, Colleen Olive, David Platts, Bruce Thomson, Taressa Bull	TPCH Foundation	$600,000.00	$200,000.00	2015-2017	Program Grant
A retrospective analysis of the effect of transfusion trigger and age of transfusion on patient outcomes in 250,000 Queensland inpatients receiving over 500,000 blood transfusions between 2007-2013 Queensland inpatients receiving over 500,000 blood transfusions between 2007-2013	John Fraser	Kiran Shekar Matthew Tunbridge Beatrice Sim John-Paul Tung Hayley Thompson	TPCH Foundation	$88,376.40	$88,376.40	2015	Project Grant - Experienced Researcher
ASAP ECMO: Antibiotic, Sedative and Analgesic Pharmcokinetics during ExtraCorporeal Membrane Oxygenation: a multi-centre study to optimise drug therapy during ECMO.	Kiran Shekar	John Fraser	TPCH Foundation	$99,620.94	$99,620.94	2015	Project Grant - Experienced Researcher
Development and in-vivo evaluation of a novel biventricular assist device	Shaun Gregory	John Fraser	TPCH Foundation	$79,644.82	$79,644.82	2015	Project Grant - Experienced Researcher
Development and in-vivo evaluation of a novel biventricular assist device	Shaun Gregory	John Fraser	TPCH Foundation	$79,644.82	$79,644.82	2015	Project Grant - Experienced Researcher
165 litre liquid nitrogen storage unit (LS 6000) complete with six racks	Margaret Passmore		TPCH Foundation	$5,000.00	$5,000.00	2014	Equipment Grant

Project Title	Chief Investigator	TPCH Investigator	Granting Agency	Total Funding Awarded	Funding received for 2014-15	Years of Funding	Grant Type
Falls knowledge survey	Keith Skelton	Melanie Jessup	TPCH Foundation	$5,000.00	$5,000.00	2014-2015	Project Grant
High risk respiratory patients' experiences of bronchospy with 'cautious' sedation and analgesia: a qualitative study	Cathy Saxon	Paul Fulbrook	TPCH Foundation	$9,940.00	9,940.00	2014-2015	Project grant
Nursing work in relation to falls: time for change?	Claire Burl	Melanie Jessup	TPCH Foundation	$7,563.00	$7,563.00	2014-2015	Project Grant
Aerosols in chronic lung infection: their extent and how to prevent?	Scott Bell	Scott Bell	TPCH Foundation	$99,576.00	$45,000.00	2015-2017	Project Grant
Characterisation of abnormal lung iron homeostasis in CF and the impact of coexisting	David Reid	Scott Bell	TPCH Foundation	$88,399.00	$88,399.00	2014-2015	Project Grant
The link between osteoarthritis and metabolic syndrome	R. Crawford	J. Bell	TPCH Foundation	$549,547.00		2014-17	Program Grant
Tele-rehabilitation: a novel approach to the provision of heart failure rehabilitation programs	Bruning, J.	Bruning, J.	TPCH Foundation	$9,969.32		2014-2015	Project Grant
Maximising balance, mobility and community participation of people after surgery following fractured neck of femur	Ferrier, R.	Ferrier, R.	TPCH Foundation	$9,982.92		2014-2015	Project Grant
Does obesity post heart transplant relate to patient activity levels?	Francis, R.	Francis, R.	TPCH Foundation	$9,498.64		2014-2015	Project Grant
Role of the mouthpiece non-invasive ventilation in neuromuscular disease	Meden, K.	Meden, K.	TPCH Foundation	$9,626.88		2014-2015	Project Grant
Inflammatory markers and physical activity capacity In adult cystic fibrosis population following an acute exacerbation requiring hospitalisation	Myslinski, K.	Myslinski, K.	TPCH Foundation	$9,962.14		2014-2015	Project Grant
Intra-strain diversity of Pseudomonas aeruginosa in the lungs of patients with CF and their role in exacerbation	Scott Bell	Scott Bell, Timonthy Kidd	TPCH Foundation	$94,797.00	$45,000.00	2013-2015	Project Grant

Project Title	Chief Investigator	TPCH Investigator	Granting Agency	Total Funding Awarded	Funding received for 2014-15	Years of Funding	Grant Type
Do laboratory and clinical measures of balance and mobility predict falls and their context in the first month after discharge home following stroke rehabilitation?	Paim, T.	Paim, T.	TPCH Foundation	$9,849.32		2014-2015	Project Grant
Validation of a Vestibular Screening Tool in the acute hospital setting, in detecting vestibular dysfunction to facilitate referral of patients to Physiotherapy Vestibular Clinic	V Stewart	V Stewart	TPCH Foundation	$9,646.00		2014-2015	Project Grant
Longer term outcomes from immediate and delayed (wait-list) service models to inform best practice for the Vestibular Rehabilitation Service at TPCH	V Stewart	V Stewart	TPCH Foundation	$2,000.00		2014-2015	Project Grant
Pulmonary Rehabilitation in Chronic Obstructive Pulmonary Disease: the relationship between anxiety and depression and physical activity	Maureen Peasey	Maureen Peasey, Norm Morris, James Walsh	TPCH Foundation	$9,741.68		2014-16	New Investigator – Project Grant
Next generation sequencing analysis of thoracic malignancies optimisation of bioinformatics for somatic variant identification and validation strategies towards personalised therapy	Chee (Kelly) Ms Tain Mun	Chee (Kelly) Ms Tain Mun	TPCH Foundation	$76,176.00	$25,392.00	2014-17	PhD Scholarship
More 2 Eat: Nutrition care pathway and optimized protein supplementation for malnourished elderly patients	H Keller	J.Bell	TVN, Canada	$899,963.00		2014-16	Project Grant
A randomised controlled trial of interventional versus conservative management treatment of primary spontaneous pneumothorax (PSPx)		Frances Kinnear	Uni. WA	$50,000.00	$35,000.00	2013-2014	Project Grant
Academic Title Research Grant	Christian Hamilton-Craig	Christian Hamilton-Craig	University of Queensland	$60,000.00	$40,000.00	2015-2016	Fellowship

Project Title	Chief Investigator	TPCH Investigator	Granting Agency	Total Funding Awarded	Funding received for 2014-15	Years of Funding	Grant Type
Imaging the Microcirculation in Critical Care Research	John Fraser	Kiran Shekar	University of Queensland - Major Equipment and Infrastructure Scheme & NHMRC Equipment Grant	$39,415.00	$39,415.00	2014	Equipment Grant
Optimising organ function during ex-vivo lung perfusion – role of the endothelial glycocalyx	Daniel Chambers		University of Queensland (Academic Title Holder Research Fund)	$37,078.00	$18,539.00	2014-2015	Project Grant
Optimal Evaluation of Small Nodules	Kwun Fong	Kwun Fong	University of Queensland MBS Near Miss Cancer Research	$97,490.00	$97,490.00	2015	Project Grant
Equip for - Precision Molecular Diagnosis for lung cancer	Kwun Fong	Kwun Fong, Rayleen Bowman, Ian Yang	UQ major Equip and infrastructure grants(MEI) & 2013 NHMRC Equipment grants	$81,702.03	$81,702.03	2014	Equipment. From NHMRC and UQ
Genomic analysis of two prevalent Pseudomonas aeruginosa strains in patients with cystic fibrosis in Queensland	Scott Bell	Scott Bell	UQ-QIMR Berghofer (AID Grant Initiative)	$50,000.00	$30,000.00	2015-2016	Project Grant

Higher Research Degree Students

Name	Higher Degree	Research Project Title	University Affiliation	Primary Supervisor	TPCH Supervisor/s (if different)
Sarah Mattin	PhD	Readiness for discharge from hospital to home in community: physiotherapist, family/ caregiver and patient perspectives.	Australian Catholic University	Nancy Low Choy	Suzanne Kuys
Vicky Stewart	PhD	Validation of a Vestibular Screening Tool & effectiveness of a Physiotherapy Vestibular Service in a Hospital Setting.	Australian Catholic University	Nancy Low Choy	
Ian Parker	PhD	A comparison of clinical and cost effectiveness between the Physiotherapist-led Royal Brisbane and Women's Hospital Vestibular Screening and Rehabilitation Service and the Audiologist-led Logan-Mater Hospitals Vestibular Dysfunction Screening Service.	Australian Catholic University	Nancy Low Choy	
Sandra Miles	PhD	Able-Bodied Children: Development and Education	Australian Catholic University	Paul Fulbrook	
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	
Vainess Mbuzi	PhD	Indigenous people's experience of acute cardiac care	Australian Catholic University	Paul Fulbrook	
Alison Peeler	PhD	Evaluation of a paediatric emergency department	Australian Catholic University	Paul Fulbrook	Fran Kinnear
Kodchanipa Phonpruk	PhD	Discharge information provided to parents whose child has attended the paediatric emergency department	Australian Catholic University	Karen Flowers	Paul Fulbrook
Lynn Hoey	PhD	Sleep quality in acute hospitalised patients	Australian Catholic University	Paul Fulbrook	James Douglas
Catherine Saxon	PhD	Patient care during bronchoscopy	Australian Catholic University, McAuley campus	QUT supervisors	Kwun Fong
Alison Peeler	PhD	Provision of a new paediatric service: An investigation of staff and ED attendees perceptions and experience of the transition from an adult emergency department	Australian Catholic University	Paul Fulbrook	Fran Kinnear
Susan Pizzutto	PhD	Characterisation of non cystic fibrosis chronic lung disease in Northern Territory children	Charles Darwin University	Anne Chang	Stephanie Yerkovich
Ronelle Hewetson	PhD	Community integration post right hemisphere stroke: impact of cognitive-communication profiles on communication based participation.	Griffith University	Petrea Cornwell	

Name	Higher Degree	Research Project Title	University Affiliation	Primary Supervisor	TPCH Supervisor/s (if different)
R. Nicole Bellet	PhD	Outcomes in Cardiac Rehabilitation: Use of the 6MWT, TUGT and the effects of Frequency of Program Delivery	Griffith University	Norm Morris	
Matthias Kleinheyer	PhD	Investigation and improvement of inherent pump design characteristics to enhance physiologic pulsatility with rapid rotary blood pump speed modulation	Griffith University	Geoff Tansley	John Fraser
Jo Philipp Pauls	PhD	Development of a passive control system for ventricular assist devices.	Griffith University	Geoff Tansley	John Fraser
Malindu Fernando	PhD	Investigating the gait and plantar pressure characteristics of people with diabetic foot ulcers	James Cook University	Jon Golledge	Peter Lazzarini
Peter Lazzarini	PhD	Foot Disease in Inpatients Study	Queensland University of Technology	Lloyd Reed	Suzanne Kuys
Katie Gillette-Browne	PhD	B-adrenoceptor determinants of contractility in the human heart: the role of phosphodiestease enzymes	Queensland University of Technology	Peter Molenaar	
Bronwyn Steele	PhD	A Preliminary Evaluation of the READY Program for Adult Congenital Heart Patients	The University of Queensland	James Kirby and Kenneth Pakenham	Tricia Rolls and Dorothy Radford
Niruthuka Mahendran	PhD	Ambulation Recovery after stroke.	The University of Queensland	Sandra Brauer	Suzanne Kuys
James Walsh	PhD	Predictive Factors of Success in Pulmonary Rehabilitation	The University of Queensland	Jenny Paratz	
Jack Bell	PhD	Identifying and overcoming barriers to nutritional care in hip fracture	The University of Queensland	J. Bauer	Chrys Pulle
Lee Pryor	PhD	Critical care interventions: Implications for speech, swallowing and tracheostomy management	The University of Queensland	Liz Ward	Petrea Cornwell
Santosh Adiraji	PhD	In vivo Phenotyping of five major cytochrome P450 (CYP) enzymes during cardiopulmonary bypass operations.	The University of Queensland	Sussan Ghassabian	Kiran Shekar
Judith Bellapart-Rubrio	PhD	Cerebral microcirculation after head injury in ovine models. Cerebral microcirculation after head injury in bovine models	The University of Queensland	John Fraser	
Jonathon Fanning	PhD	Characterisation of neurological injury in cardiovascular interventions.	The University of Queensland	John Fraser, Darren Walters David Platts	
Donna Franklin	PhD	High flow nasal cannula respiratory support in infants.	The University of Queensland	John Fraser	
Charles McDonald	PhD	Trace elements, oxidative stress and the cardiac patient	The University of Queensland	Lin Fung	John Fraser
Elissa Milford	PhD	Effects of commonly used and emerging resuscitation fluids on end organ function in severe trauma.	The University of Queensland	John Fraser	

Name	Higher Degree	Research Project Title	University Affiliation	Primary Supervisor	TPCH Supervisor/s (if different)
Frank Nestler	PhD	Improving the physiological response of rotary total artificial hearts.	The University of Queensland	Andrew Bradley	John Fraser
Monica Ng	PhD	The effects of blood storage duration at the blood-endothelial interface	The University of Queensland	John Fraser	
David Platts	PhD	Expansion of the application or perflutren microsphere contrast echocardiography: novel clinical indications and the interaction with mechanical circulatory support devices.	The University of Queensland	John Fraser	Malcolm West Darryl Burstow
Kiran Shekar	PhD	Characterisation of Pharmacokinetics of Commonly Used Sedatives, Analgesics, Broad Spectrum Antibiotics and their Clinically Relevant Metabolites During ECMO Using Simulated Circuits, Clinical Studies and an Ovine Model.	The University of Queensland	John Fraser	
Michael Stevens	PhD	Physiological control of dual left ventricular assist devices.	The University of Queensland	Steven Wilson	John Fraser
Anna-Liisa Sutt	PhD	Towards and improved understanding of the effect of a speaking valve on lung volumes and communication in the critically ill tracheostomised patient.	The University of Queensland	John Fraser	
Daniel Smith	PhD	Investigating the host and bacterial factors in cystic fibrosis that promote persistence of infection in the lung	The University of Queensland	David Reid	
Anna Tai	PhD	Heterogeneity within P. aeruginosa shared strains in cystic fibrosis: the development and spread of antimicrobial resistance	The University of Queensland	Scott Bell	
Kay Ramsay	PhD	Phenotypic and genotypic characterisation of Pseudomonas aeruginosa to determine the differences between adaptation, adherence and transmission amongst strains isolated from the environment and patients with cystic fibrosis	The University of Queensland	Scott Bell	
Kenneth Sinclair	PhD	Lung mesenchymal stromal cells	The University of Queensland	Daniel Chambers	Stephanie Yerkovich
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
Danielle Wurzel	PhD	Protracted bacterial bronchitis (PBB) in children – natural history, innate immunity, infection and obstructive sleep disorders	The University of Queensland	Anne Chang	Stephanie Yerkovich
Sushil Luis	PhD	MultiModality imaging in cardiac disease	The University of Queensland School of Medicine	Chris Raffel	C Hamilton-Craig
Anna-Liisa Sutt	PhD	Towards an improved understanding of the effect of a speaking valve on lung volumes and communication in the critically ill tracheostomised patient	The University of Queensland, Griffith University	John Fraser	Petrea Cornwell

Name	Higher Degree	Research Project Title	University Affiliation	Primary Supervisor	TPCH Supervisor/s (if different)
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, School of Medicine	Rayleen Bowman; with Kwun Fong; Ian Yang	
Eloise Shaw	PhD	Tissue microarrays for lung cancer	The University of Queensland, School of Medicine	Kwun Fong; with Ian Yang; Rayleen Bowman; Sunil Lakhani	
Barbara Page	PhD	Rural journey for lung cancer patients	The University of Queensland, School of Medicine	Kwun Fong; with Ian Yang; Rayleen Bowman; Sunil Lakhani	
Annette Dent	PhD	Lung cancer; Diagnostic potential of VOCs in respiratory disease; Exhaled breath volatile organic compounds in lung disease.	The University of Queensland, School of Medicine	Kwun Fong; with Ian Yang; Rayleen Bowman; Sunil Lakhani	
Janet Shaw	PhD	Lung microbiome in COPD	The University of Queensland, School of Medicine	Kwun Fong; with Ian Yang; Rayleen Bowman; Sunil Lakhani	
Henry Marshall	PhD	Lung cancer screening; Screening for lung cancer by low-dose computerised tomography in Australia	The University of Queensland, School of Medicine	Kwun Fong; with Ian Yang; Rayleen Bowman; Sunil Lakhani	
Marissa Daniels	PhD	Lung cancer; Molecular diagnosis and characterisation of lung cancer (Genomic and epigenomic changes in lung malignancy); Genomic and epigenomic changes in lung malignancy	The University of Queensland, School of Medicine	Kwun Fong; with Ian Yang; Rayleen Bowman; Sunil Lakhani	
Annalicia Vaughan	PhD	Diesel exposure to bronchial epithelial cells	The University of Queensland, School of Medicine	Rayleen Bowman; with Kwun Fong; Prof Yang	
James Edelman	PhD	Inflammation and cardiac surgery.	University of New South Wales	Michael Vallely	John Fraser
Ellie Newman	D Psych	Crises of the Heart: An Exploration of Adjustment in Adult Congenital Heart disease	Queensland University of Technology	Esben Strodl	Tricia Rolls and Dorothy Radford
Kai Gromann	Masters	Development of a less invasive cannulation system for RVADs	Aachen University	Ulrich Steinseifer	Shaun Gregory
Eleonore Bolle	Masters	Particle image velocimetry evaluation of left ventricular assist device inflow cannulae	Germany		Shaun Gregory
Ariana Di Nucci	Masters	An anatomically correct model for flow dynamics evaluation of heart valves	Italy		Shaun Gregory
Johan Lipman	Masters	Development and evaluation of a novel drug delivery system	The University of Queensland	John Fraser	Shaun Gregory
Eric Wu	Masters	A physiological control system relating ventricular and pump work	The University of Queensland	Surya Singh	Shaun Gregory

Name	Higher Degree	Research Project Title	University Affiliation	Primary Supervisor	TPCH Supervisor/s (if different)
Anne Li	Master of Applied Science (Research)	Managing Parenthood and Cystic Fibrosis: the challenges of parenting with a chronic life limiting medical condition	Queensland University of Technology	Michele Clark	David Reid
Amanda Corley	MAdv-Practice (Healthcare Research)	Cochrane Systematic Review: High Flow Nasal Cannula for Respiratory Support in Adult Intensive Care Patients	Griffith University	Claire Rickard	David Reid
Adrian Singh	MRes	Social determinants of diabetic foot ulcers	Queensland University of Technology	Gavin Turrell	David Reid
Damien Clark	MRes	Can diabetic foot ulceration be accurately diagnosed by transmitting mobile phone images?	Queensland University of Technology	Lloyd Reed	John Fraser
Cathy Saxon	MNursRes	Patients with chronic respiratory disease: experiences of bronchospy	Australian Catholic University	Paul Fulbrook	Peter Lazzarini
Rebecca Ferrier	MPhil	Functional and Mobility Outcomes following Hip Fracture Surgery: Impact of inpatient and community physiotherapy	Australian Catholic University	Nancy Low Choy	Peter Lazzarini
Stephanie Gettens	MPhil	Psychosocial implications of sustaining a fall while in hospital	Australian Catholic University	Paul Fulbrook	Kwun Fong
Phil Abery	MPhil	Investigating the translation of the clinical guidelines for stroke into practice within a private hospital setting	Australian Catholic University	Nancy Low Choy	
Troy Ditton	MPhil	Survey related to the longer-term effects of using walking aids with clinical / laboratory studies related to adaptive changes with long term use of four wheel walker use: implications for prescription and management	Australian Catholic University	Nancy Low Choy	Nancy Low Choy and Melanie Jessup
Praline Choolun	MPhil	Tracking changes in scapular position in acute post-stroke hemiplegic patients	Griffith University	Leanne Bisset	
Maureen Peasey	MPhil	Physical activity and pulmonary rehabilitation in COPD: the impact of individualisation and function	Griffith University	Norm Morris	
Rebecca Kelly	MPhil	What factors predict daily physical activity levels post heart transplantation?	Griffith University	Norm Morris	Suzanne Kuys
Maureen Peasey	MPhil	Physical activity and pulmonary rehabilitation in COPD: the impact of individualisation and function	Griffith University	Norm Morris	James Walsh
Rebecca Kelly	MPhil	What factors predict daily physical activity levels post heart transplantation?	Griffith University	Norm Morris	James Walsh
Janelle Gesch	MPhil	Development, validation, reliability and predictive capacity of motor recovery of the Acquired Brain Injury Physiotherapy Assessment (ABIPA): A tool for physiotherapists during early management of people following traumatic brain injury	Griffith University	Suzanne Kuys	James Walsh

Name	Higher Degree	Research Project Title	University Affiliation	Primary Supervisor	TPCH Supervisor/s (if different)
Urszula Dolecka	MPhil	Spaced retrieval, errorless learning and vanishing cues in retraining of sit to stand in people with dementia	Griffith University	Suzanne Kuys	James Walsh
Kate Burton	MPhil	Inflammatory markers, physical activity and exercise tolerance in the adult cystic fibrosis population.	Griffith University	Suzanne Kuys	
Anne Li	MPhil	Managing parenthood and cystic fibrosis	Queensland University of Technology	Michele Clark	
Heather Batten	MPhil	Functional outcomes of lower limb amputees	The University of Queensland	Allison Mandruisak	Suzanne Kuys
Katrina Williams	MPhil	An investigation of balance & mobility across the Disease States of Multiple Sclerosis – impact of interventions	The University of Queensland	Prof Sandra Brauer	Prof Nancy Low Choy
Rylan Hayes	MPhil	Does hyperoxaemia in a extracorporeal membrane oxygenation circuit activate platelets and increase thrombotic risks?	The University of Queensland	John Fraser	
Daniel Kilburn	MPhil	An investigation into kidney injury induce by extracorporeal membrane oxygenation.	The University of Queensland	John Fraser	Kiran Shekar
Beatrice Sim	MPhil	Risk of Nosocomial Infections with Age of Blood: A Retrospective Study.	The University of Queensland	John Fraser	
Matthew Tunbridge	MPhil	A longitudinal study of the triggers for transfusion at The Prince Charles Hospital	The University of Queensland	John Fraser	
Ryan Watts	MPhil	The Implications of brain death in donor lung injury: Investigation and blockade of the endothelin axis.	The University of Queensland	John Fraser	
Paul Wiemers	MPhil	Cardiac surgery in indigenous Australians: How wide is the gap?	The University of Queensland	John Fraser	
Erin Stanley	MPhil	Investigating the impact a Saturday rehabilitation physiotherapy service has on patient outcomes and length of stay	The University of Queensland	Sandra Brauer	Suzanne Kuys
Jeffery Overington	MPhil	Electronic snapshot for COPD	The University of Queensland, School of Medicine	Rayleen Bowman; with Kwun Fong; Prof Yang	
Marsus Pumar	MPhil	Treatment of anxiety and depression in patients with respiratory disease	The University of Queensland, School of Medicine	Rayleen Bowman; with Kwun Fong; Prof Yang	
Claire Stewart	MPhil	Increasing the amount of practice completed by stroke inpatients.	University of Sydney	Annie McCluskey	Suzanne Kuys
Marina Tan	MBBS student	Determinants of survival and morbidity following redo aortic valve surgery	The University of Queensland	Rishen Naidoo	
Ricky Nelles	MBBS Honours	Does microbiome concordance and M2 macrophage predominance reduce the risk of chronic lung transplant rejection?	The University of Queensland	Daniel Chambers	Stephanie Yerkovich

Name	Higher Degree	Research Project Title	University Affiliation	Primary Supervisor	TPCH Supervisor/s (if different)
Dianna Luong	MBBS Honours	Lung cancer; Exhaled breath condensate collection in lung cancer and COPD; Exhaled breath condensate measurement	The University of Queensland, School of Medicine	Rayleen Bowman; with Kwun Fong; Prof Yang	
Wen Lee	MBBS Honours	COPD; Prediction of post-operative lung function from CT emphysema scores (Prediction of post-operative lung function in lung cancer surgery); Digital tomosynthesis	The University of Queensland, School of Medicine	Rayleen Bowman; with Kwun Fong; Prof Yang	
Jacques Eastment	MBBS Honours	Mesothelioma; Cochrane review protocol: XRT for prevention of port site metastases in mesothelioma (Cochrane review: Prophylactic radiotherapy to prevent port site metastasis in mesothelioma); Cochrane review: prophylactic radiotherapy to present tract metastasis in mesothelioma	The University of Queensland, School of Medicine	Rayleen Bowman; with Kwun Fong; Prof Yang	
Joseph Bourke	MBBS Honours	COPD; Cochrane review protocol: Glycopyrronium for COPD; Cochrane review: glycopyrronium for COPD	The University of Queensland, School of Medicine	Ian Yang; with Kwun Fong; Rayleen Bowman	
William Kirby	Honours	Measurement of physical activity with In-Patient patients following amputation: Self report compared to ActivPal	Australian Catholic University	Nancy Low Choy	
Rosemary Parker	Honours	Do measures of walking predict the context of a fall of stroke survivors in the follow-up period after discharge from out-patient rehabilitation	Australian Catholic University	Nancy Low Choy	
Lawrence Grant	Honours	Are clinical measures of functional balance and mobility sensitive to change in health status and function when patients are admitted to an acute medical ward setting?	Australian Catholic University	Nancy Low Choy	
Edward Grainger	Honours	Development of a less-invasive right ventricular assist device implantation tool	Griffith University	Geoff Tansley	Shaun Gregory
Daniel Maloney	Honours	A modular mock circulation loop for particle image velocimetry	Griffith University	Geoff Tansley	Shaun Gregory
Cael Degnian	Honours	Development of an implantable compliant outflow cannula for RBPs	Queensland University of Technology	Mark Pearcy	Shaun Gregory
Dwayne McColl	Honours	Development of a preload sensitive left ventricular assist device	Queensland University of Technology	Wim Dekkers	Shaun Gregory
Maureen Ross	Honours	Particle image velocimetry assessment of a novel artificial mitral valve	Queensland University of Technology	Mark Pearcy	Shaun Gregory
Brielle Parris	BSC Honours	Detection of clinically relevant mutations in non-small cell lung cancer	The University of Queensland, School of Medicine	Rayleen Bowman; with Kwun Fong; Prof Yang	

Publications

Abramson M, F. P., Yang IA, McDonald C, Hancock K, Jenkins S, McDonald V, Zwar, N, Maguire, G, Halcomb, E, Polak Scowcroft, C. (2014) "COPD-X Concise Guide for Primary Care. ." Lung Foundation Australia. .

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Bell, S. C. and D. W. Reid (2014). "Challenges of the care of adults with cystic fibrosis." European Respiratory Monograph 64: 287-304.

Bielby, L., C. Akers, J. Perillo, N. Sieradzki, C. Pollock, F. Nasra, C. Polack, S. McGregor, K. Bastin and B. Pearse (2014). "Patient blood management initiatives in the perioperative setting." ACORN: The Journal of Perioperative Nursing in Australia 27(4): 8-14.

Bilton, D., G. Tino, A. F. Barker, D. C. Chambers, A. De Soyza, L. J. Dupont, C. O'Dochartaigh, E. H. van Haren, L. O. Vidal, T. Welte, H. G. Fox, J. Wu and B. Charlton (2014). "Inhaled mannitol for non-cystic fibrosis bronchiectasis: a randomised, controlled trial." Thorax 69(12): 1073-1079.

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Journal Editorial Positions

PROFESSOR KWUN FONG

Co-Editor, Lung Cancer Cochrane group; Deputy Editor-in-Chief, Journal of Thoracic Disease; Reviewer of various scientific and medical journals (Australian and International).

PROFESSOR IAN YANG

Reviewer, Chest, Clinical and Experimental Allergy, Cochrane Collaboration (Airways Group), Environment International, European Respiratory Journal, International Journal of COPD, Expert Opinion On Pharmacotherapy, Medical Journal of Australia, Respirology, Thorax; Deputy Editor, Respirology; Editorial Board Member, International Respiratory Journal; Senior Associate Editor and Editorial Board Member, International Allergy Journal; Editor and Editorial Board Member, Chochrane Airways Group.

DR SUSANNE DOYLE

Reviewer, Journal of Experimental Aging Research; Reviewer, Journal of Elder Abuse & Neglect

DR SUZANNE KUYS

Guest Editor, Special Edition Brain Impairment

DR PETREA CORNWELL

Editorial Board Member, Brain Impairment

PROFESSOR JOHN FRASER

Editor, Intensive Care Medicine experimental (ICMx); Editorial Board Member, Burns

PROFESSOR SCOTT BELL

Editor-in-Chief, Journal of Cystic Fibrosis

MS NATALIE KELLY

Reviewer, Sound Effects - Australian Sonography Association

DR CHRISTIAN HAMILTON-CRAIG

Reviewer, Circulation: Cardiovascular Imaging; Reviewer, JACC: Cardiovascular Imaging; Reviewer, Journal of the American College of Cardiology (JACC); Reviewer, European Heart Journal; Reviewer, European Heart Journal Cardiovascular Imaging; Reviewer, Journal of Cardiovascular Computed Tomography; Reviewer, Internal Medicine Journal; Reviewer, Heart Lung & Circulation; Editorial Board Member, World Journal of Cardiology

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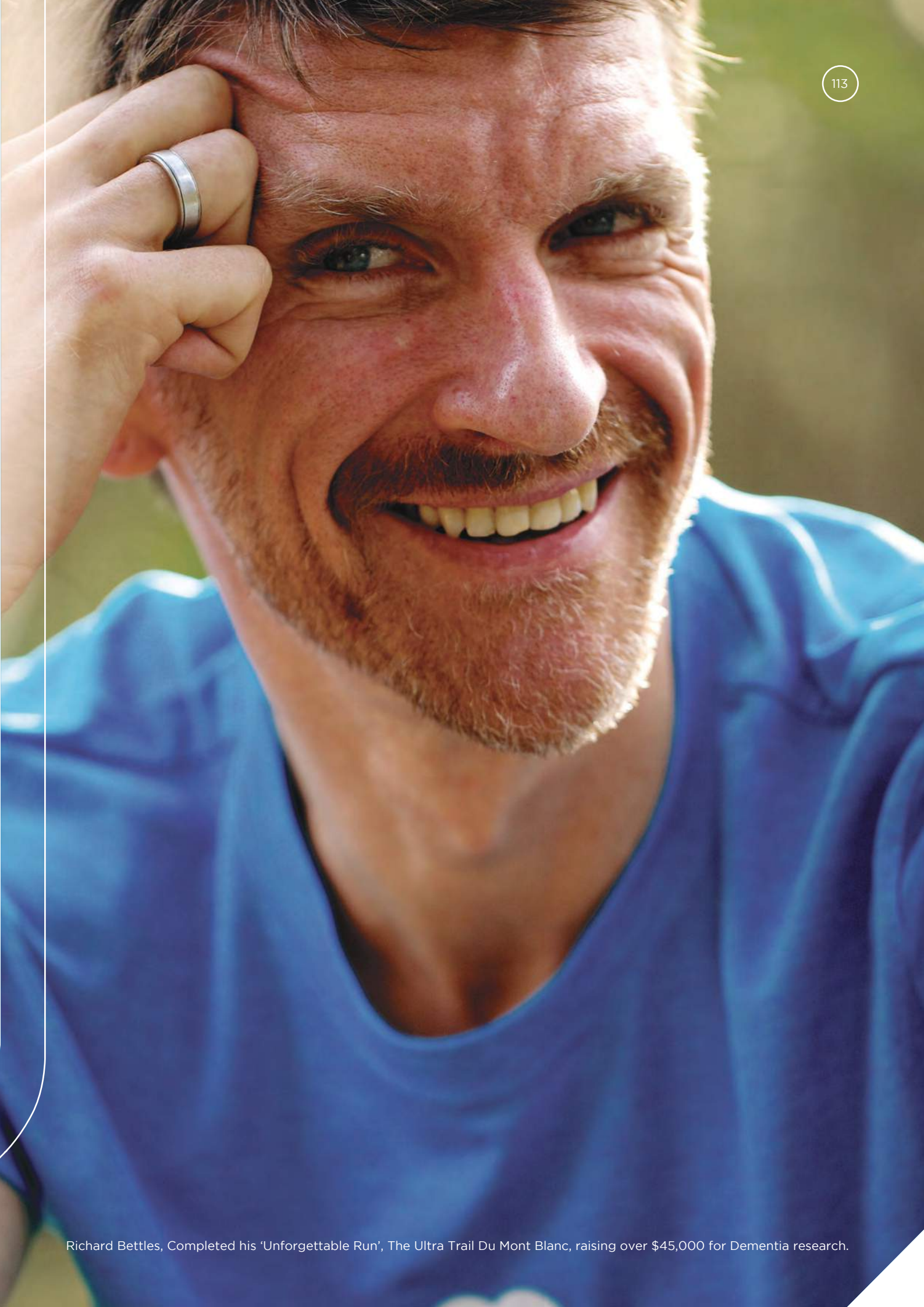

Richard Bettles, Completed his ‘Unforgettable Run’, The Ultra Trail Du Mont Blanc, raising over $45,000 for Dementia research.

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