

BASIL HETZEL INSTITUTE **RESEARCH REPORT 2018**

Translational health research at The Queen Elizabeth Hospital



The Institute

COLLABORATION

13 THEMES

The BHI has over the past twelve months continued to perform remarkably well.

Guy Maddern

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\$20M+ REVENUE



► Grants, clinical academic salaries, scholarships and infrastructure support



30

► Research groups



90+

► Research higher degree students



100+

► Clinical and research staff



275+

► Publications





On balance, the challenges are being met, the future looks secure and the outputs being generated are quite extraordinary.



D

espite the continuing challenges to gain competitive research funding, the BHI has over the past twelve months continued to perform remarkably well.

Overall, funding drawn in over the last financial year has risen to new record levels, the number of completed higher degree students has been maintained, a substantial number of new students have been attracted to the Basil Hetzel Institute, with a significant increase in Honours students wishing to join the research teams going into 2019. Postgraduate research scholars wishing to join the research groups have also increased substantially in numbers and new groups have expressed interest in setting up their activities in the coming year.

Researchers associated with the BHI were awarded one quarter (3 of the 11) of NHMRC Early Career Fellowships 2019 awarded to South Australians: Dr Cher-Rin Chong (Cardiology), Dr Bill Panagopoulos (Breast Cancer Research Unit), Dr Katharina Richter (Surgery).

NHMRC Project Grants 2019 were awarded to Associate Professors Sarah Vreugde and Alkis Psaltis and Dr Nicky Thomas (ENT), Professor PJ Wormald and Associate Professor Sarah Vreugde (ENT), Associate Professor Wendy Ingman (Breast Biology and Cancer Unit), Professor Catherine Hill (Rheumatology Research Group), Professors Tim Price and Peter Hewett (Medical Oncology and Surgery) and Dr Sam Costello (Inflammatory Bowel Disease Research Group), who are all part of collaborative teams.

Professor Michael Roberts (Therapeutics Research Centre) has received a US Food and Drug Administration (FDA) grant; Professor Eric Gowans, Dr Dan Wijesundara, Dr Branka Grubor-Bauk and Dr Ashish Shrestha (Virology Group) with Professor Sarah Robertson (Robinson Research Institute) received a Channel 7 Children's Research Foundation/THRF Project Grant, and Dr Branka Grubor-Bauk, Dr Dan Wijesundara and Professor Eric Gowans were successful in receiving an Adelaide Enterprise Commercial Accelerator Scheme (CAS) with matched THRF funding support.

In addition to the newly announced NHMRC project funding, BHI researchers were Chief Investigators on new 2018 NHMRC grants: 1 x Partnership grant to Professor John Beltrame (CIA) and Dr Rosanna Tavella (CIB); 1 x Centre for Research Excellence grant to Professor Bob Adams in collaboration with Flinders University researchers; 2 x Project grants to Professor Betty Sallustio and Dr Peter Zalewski. These were in addition to other grants awarded in

2018, including the \$2.53 million awarded to BHI researchers by The Hospital Research Foundation.

While considerable investment has been made along the North Terrace end of the Biomedical Precinct with the completion of the new Royal Adelaide Hospital, the buildings associated with The University of Adelaide and the University of South Australia as well as the plans for SAHMRI 2 to be commenced shortly, the BHI being only 10 minutes away from these facilities and attached to a large and busy public hospital has meant that the value of such a facility and research group has been clear to many wishing for a supportive and dynamic research environment.

The challenges going forward, however, are considerable. An increase in the critical mass of scientific researchers within the organisation is essential, reliable and consistent funding streams are required, and a commitment that research is an important part of the public hospital environment is essential in order to provide the confidence and security needed by individuals to conduct long term research endeavours.

Whether or not this situation is in existence, given the turmoil associated with the engagement of KordaMentha to review the operations of Central Adelaide Local Health Network, remains to be seen, however certainly the direction that has, at this stage, been given by Lesley Dwyer the new CEO of CALHN and the KordaMentha turnaround team suggests that a vibrant research environment is an important and essential part of the organisation going forward.

Irrespective of the challenges faced by all involved in research, not only in South Australia but also Australia, the extraordinary support of The Hospital Research Foundation has been sustained and growing. Without the underpinning of The Hospital Research Foundation for basic equipment and basic infrastructure, the Basil Hetzel Institute would find itself severely compromised in providing a stable research platform for the researchers based in and around The Queen Elizabeth Hospital.

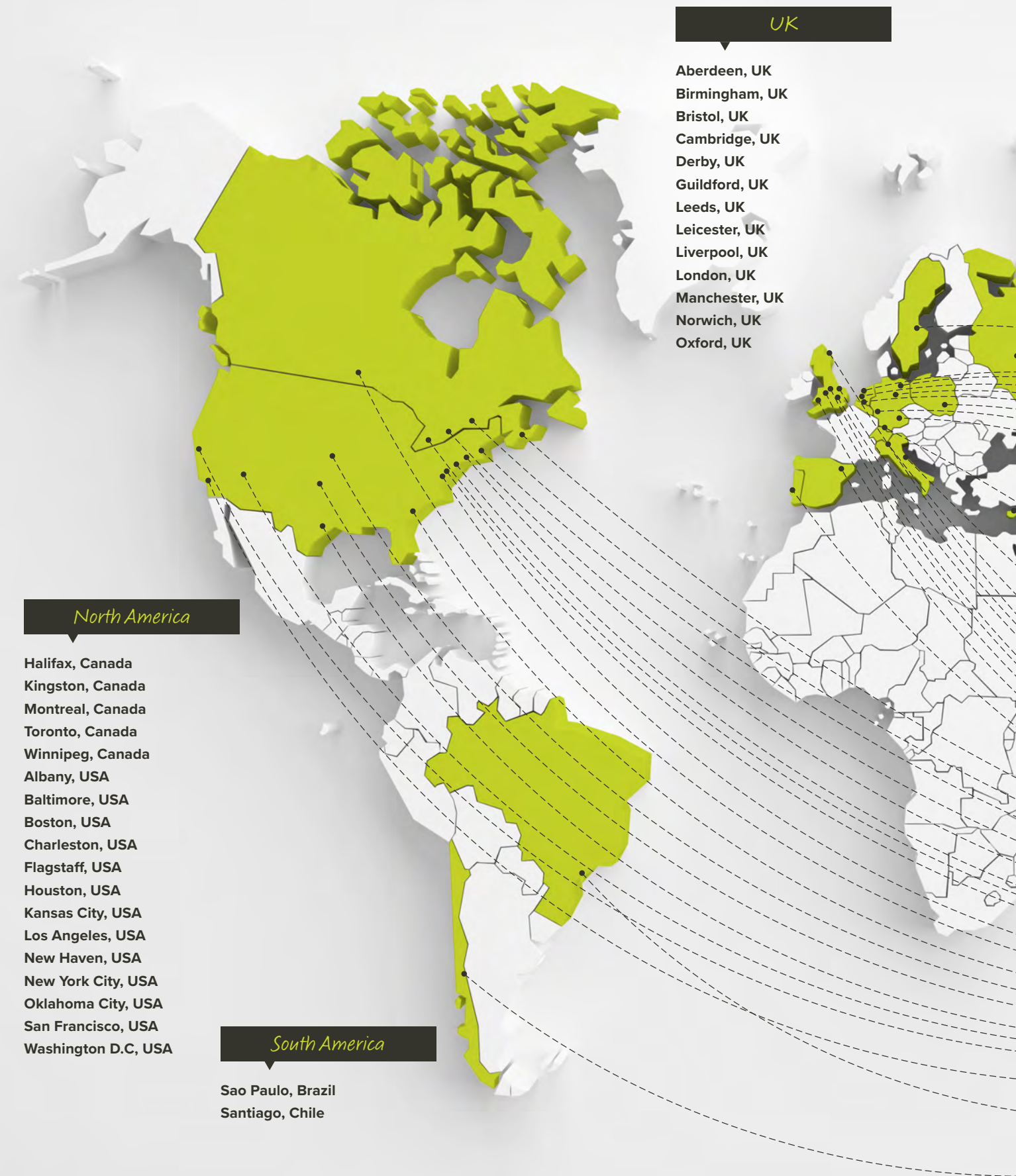
On balance, the challenges are being met, the future looks secure and the outputs being generated are quite extraordinary.

GUY MADDERN

Director of Research

December 2018

BHI NATIONAL AND INTERNATIONAL COLLABORATORS 2018



Europe

Antwerp, Belgium
Ghent, Belgium
Nicosia, Cyprus
Berlin, Germany
Frankfurt, Germany
Halle-Wittenberg, Germany
Munich, Germany
Chieti, Italy
Milan, Italy
Kraków, Poland
Lisbon, Portugal
Moscow, Russia
Lleida, Spain
Uppsala, Sweden
Zürich, Switzerland
Amsterdam, The Netherlands

24
COUNTRIES

50+
CITIES

200+
EXTERNAL
COLLABORATORS

Asia

Guangzhou, China
Hong Kong, China
Shanghai, China
Hyderabad, India
Kerala, India
Nagoya, Japan
Sapporo, Japan
Sarawak, Malaysia
Serdang, Malaysia
Kandy, Sri Lanka
Bangkok, Thailand

Oceania

Adelaide, Australia
Brisbane, Australia
Canberra, Australia
Darwin, Australia
Fremantle, Australia
Geelong, Australia
Melbourne, Australia
Newcastle, Australia
Perth, Australia
Sydney, Australia
Auckland, New Zealand
Wellington, New Zealand

SIGNIFICANT IMPACT PUBLICATIONS 2018

AGEING

► Adelaide G-TRAC Centre

Impact Factor: 4.227

Gupta AD, Wilson DH. *Med J Aust.* 2018; 208 (9): 379-381.

Botulinum toxin for spasticity: a case for change to the Pharmaceutical Benefits Scheme

This perspective paper by researchers from our group (Dr Anupam Datta Gupta and Professor David Wilson) urges policy makers and funders to make Botulinum Toxin available for treatment of lower limb spasticity just as it is currently available for upper limb spasticity. It provides a cogent basis as to why the treatment may be effective.

This paper has contributed to the discussion in Australia and Dr Gupta has also actively contributed as a participating member of the Rehabilitation Medicine Society of Australia and New Zealand Botulinum Toxin Expert Working Group to a Position Statement on the Therapeutic Use of Botulinum Toxin in Rehabilitation Medicine for spasticity and dystonia. Dr Gupta is leading an investigator initiated intervention trial focused on the use of Botulinum Toxin to treat post-stroke lower limb spasticity in an effort to address the existing research gap in the evidence base.

► <https://www.ncbi.nlm.nih.gov/pubmed/29764344>

CANCER

► Breast Biology and Cancer Unit

Impact Factor: 0.7

Hugo HJ, Zysk A, Dasari P, Britt K, Hopper JL, Stone J, Thompson EW, Ingman WV. *eCancer.* 2018 Feb 6;12:807.

InforMD: a new initiative to raise public awareness about breast density

On a mammogram, breast density is shown as white and bright regions, and is associated with reduced sensitivity in cancer detection and increased breast cancer risk. However, many Australian women are unaware of the significance of breast density as it is not routinely reported or discussed. To address this lack of knowledge, we formed the InforMD alliance (INformation FORum on Mammographic Density) together with colleagues across Australia. The alliance is working to raise awareness of breast density with the goal of improving breast cancer diagnosis and health outcomes for women. We developed a publicly accessible website ► www.informd.org.au that contains unbiased, accurate, updated information on breast density.

The website also provides summaries of major research articles in layperson language, recent news items related to breast density, links to relevant information for health professionals, events and feature articles. This is an unprecedented model of multi-disciplinary engagement to progress a complex health issue, and has resulted in reassessment of Commonwealth policy position on breast density, education of health professionals through Continuing Professional Development courses, and is cited in international health advocacy documents.

► <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5828674/>

► Breast Cancer Research Unit

Impact Factor: 3.15

Zysk A, DeNichilo M, Zinonos I, Hay S, Liapis V, Ponomarev V, Evdokiou A, Panagopoulos V. *Journal of Cancer Science & Therapy.* 2018, 10(9); 262-266. doi: 10.4172/1948-5956.1000554.

Zoledronate Enhances the Cytotoxicity of Gamma Delta T Cell Immunotherapy in an Orthotopic Mouse Model of Osteolytic Osteosarcoma

This paper has shown that the clinical utility of systemic adoptive therapy with gamma delta T cells may be limited by problems of selectively targeting large numbers of T cells to the tumour site to have an effect. These findings are central to the research activities of the Breast Cancer Research Unit which aim to identify new ways to use ex vivo expanded gamma delta T cells for increased anticancer efficacy.

► <https://bit.ly/2sHjzpZ>

► Colorectal Cancer Research Group

Impact Factor: 9.203

Stevenson ARL, Solomon MJ, Brown CSB, Lumley JW, Hewett P, Clouston AD, Gebiski VJ, Wilson K, Hague W, Simes J; Australasian Gastro-Intestinal Trials Group (AGITG) ALaCaRT investigators. *Ann Surg.* 2018 Sep 20. doi: 10.1097/SLA.0000000000003021. [Epub ahead of print]

Disease-free survival and local recurrence after laparoscopic-assisted resection or open resection for rectal cancer: The Australasian Laparoscopic Cancer of the Rectum Randomized Clinical Trial

The aim of the study was to determine the efficacy of laparoscopic rectal resection (Lap) versus open laparotomy and rectal resection (Open) for rectal cancer on locoregional recurrence (LRR) and disease-free survival (DFS) at 2 years. A randomised, multicenter noninferiority phase 3 trial of 475 patients with T1 to T3 rectal adenocarcinoma <15cm from anal verge, given Lap or Open and followed for a minimum 2 years to assess LRR, DFS, and overall survival (OS).

Laparoscopic surgery for rectal cancer did not differ significantly from open surgery in effects on 2-year recurrence or DFS and OS. However, confidence intervals included potentially clinically important differences favouring open resection, so that the combination of primary and secondary study endpoints may not support laparoscopic resection of rectal cancer as a routine standard of care. Further follow-up is required.

► <https://www.ncbi.nlm.nih.gov/pubmed/30247332>

► Solid Tumour Group

Impact Factor: 36.421

Price T. *Lancet Oncol.* 2018 May; 19(5): 587-589.

Comment on report (Xu et al. ► <https://www.ncbi.nlm.nih.gov/pubmed/29555258>) of a phase 3 trial of modified (m) XELIRI with or without bevacizumab. This schedule was reported to be well tolerated and non-inferior to FOLFIRI with or without bevacizumab in terms of overall survival, hence mXELIRI could be an alternative to FOLFIRI as a standard second-line backbone treatment for metastatic colorectal cancer, at least for Asian patient populations.

Thus, according to Price, for patients with the RAS wild-type gene, if irinotecan is preferred in the first-line setting then FOLFIRI would

SIGNIFICANT IMPACT PUBLICATIONS 2018

be the suggested regimen with an anti-EGFR antibody. If anti-EGFR therapy were used first line with FOLFOX, then second-line mXELIRI with bevacizumab would be an option as reported by Xu and colleagues.

However, for patients with the RAS mutation, the decision is less complex as a schedule of mXELIRI or CAPOX plus bevacizumab could be considered as the first-line treatment, especially when considering patients' quality of life, because these schedules overcome the need for infusion pumps and possibly port insertion.

► <https://www.ncbi.nlm.nih.gov/pubmed/29555259>

CARDIOVASCULAR DISEASE

► Cardiovascular Pathophysiology and Therapeutics Group

Impact Factor: 16.834

Horowitz JD, DeCaterina R, Heresztyn T, Alexander JH, Andersson U, Lopes RD, Steg PG, Hylek EM, Mohan P, Hanna M, Jansky P, Granger CB, Wallentin L, ARISTOTLE Investigators. *J Am Coll Cardiol*. 2018 Aug 14;72(7):721-733.

Asymmetric and symmetric dimethylarginine predicts outcomes in patients with atrial fibrillation: An ARISTOTLE Substudy

This publication provides a molecular basis for the occurrence of both thrombotic and bleeding risks in patients with chronic atrial fibrillation, ultimately showing the importance of both impaired nitric oxide production and inflammatory activation.

► <https://www.ncbi.nlm.nih.gov/pubmed/30092948>

► Translational Vascular Function Research Collaborative

Impact Factor: 4.450

Lamin V, Jaghoori A, Jakobczak R, Stafford I, Heresztyn T, Worthington M, Edwards J, Viana F, Stuklis R, Wilson DP, Beltrame JF. *J Am Heart Assoc*. 2018 Jul 9;7(14).

Mechanisms responsible for serotonin vascular reactivity sex differences in the internal mammary artery

Women undergoing heart surgery (CABG - coronary artery bypass grafting) have an increased rate of adverse cardiac events compared to men. This study investigated the potential role of biological factors to explain this, specifically, whether there are sex differences in the hyperreactivity of the internal mammary artery (IMA) - a blood vessel used in CABG surgery.

We isolated IMAs from patients undergoing CABG and compared the vasoconstriction response between men and women from serotonin and thromboxane A₂, chemicals which trigger a reaction to narrow blood vessels. The experiments showed a difference in the way the blood vessels responded – there was an increased sensitivity to serotonin but not to thromboxane A₂ in women.

For the first time, it was shown that female IMAs are more sensitive to serotonin vasoconstriction than their male counterparts. This is an important biological difference potentially contributing to the poorer outcomes observed in women undergoing heart surgery.

► <https://www.ncbi.nlm.nih.gov/pubmed/29987120>

► Vascular Surgery Research Group

Impact Factor: 3.294

Parvar SL, Fitridge R, Dawson J, Nicholls SJ. *J Vasc Surg*. 2018;68(5):1595-606.

Medical and lifestyle management of peripheral arterial disease

This paper was published in the *Journal of Vascular Surgery*, one of the highest ranked journals in Vascular Surgery with an Impact Factor of 3.294 and addresses treatment of a major clinical problem, peripheral arterial disease (PAD).

PAD is a global health issue associated with impaired functional capacity and elevated risk of adverse cardiovascular events. With changing risk factor profiles and an ageing population, the burden of disease is expected to increase.

The paper describes the current evidence for the non-invasive management of PAD and makes clinical recommendations. Smoking cessation counselling or pharmacotherapy is recommended. Whereas supervised exercise therapy is ideal, there can be barriers to implementation. More studies are required to investigate the role of intensive glycaemic, blood pressure, and dyslipidaemia control in patients with PAD. Overall, a multifactorial approach is recommended to alter the natural history of this condition.

► <https://www.ncbi.nlm.nih.gov/pubmed/30360849>

► Zinc and Cardiovascular Disease Research Group

Impact Factor: 6.202

Zalewski PD, Beltrame JF, Wawer AA, Abdo AI and Murgia C. *Crit Rev Food Sci Nutr*. 2018;1-15.

Roles for endothelial zinc homeostasis in vascular physiology and coronary artery disease

This review article encompasses recent developments in our understanding of how zinc interacts with cardiovascular signalling pathways involved in blood vessel physiology and disease. It also presents a speculative, testable model of how zinc acts with special emphasis on its roles in nitric oxide signalling and vasodilation pathways involving cyclic GMP.

We expect this review article will serve as a focal point and springboard for future studies into the role of dietary zinc in cardiovascular health and disease.

► <https://www.ncbi.nlm.nih.gov/pubmed/29999409>

CHRONIC DISEASE

► Clinical Pharmacology Research Group

Impact Factor: 3.838

Md Dom ZI, Collier JK, Carroll RP, Tuke J, McWhinney BC, Somogyi AA and Sallustio BC. *Br J Clin Pharmacol*. 2018 Oct; 84(10):2433-2442.

Mycophenolic acid concentrations in peripheral blood mononuclear cells are associated with the incidence of rejection in renal transplant recipients

This is the first report demonstrating that measuring mycophenolate concentrations within immune cells is a better predictor of rejection risk than the current practice of individualising patient doses based on monitoring plasma mycophenolate concentrations. These promising results suggest it may be possible to reduce rejection by changing our monitoring practice.

► <https://www.ncbi.nlm.nih.gov/pubmed/29974488>

► Endocrinology Unit

Impact Factor: 13.397

Meyer EJ, Gabb G, Jesudason D. *Diabetes Care* 2018; 41(4) e47-e49.

SGLT2 inhibitor-associated euglycemic diabetic ketoacidosis: A South Australian clinical case series and Australian spontaneous adverse event notifications

This study followed up a serious and rare side effect, diabetic ketoacidosis (DKA), in type 2 diabetes patients treated with SGLT2 inhibitor which is an oral diabetes drug approved in 2013. The description of its prevalence, associated risk factors and diagnosis has improved the guidelines and increased patient safety of this medication.

► <https://www.ncbi.nlm.nih.gov/pubmed/29440112>

► Stroke Research Programme

Impact Factor: 3.612

Graham CM, Kremer KL, Koblar SA, Hamilton-Bruce MA, Pyecroft SB. *Stem Cell Rev*. 2018; 14(4) 500–509.

Dental Pulp Stem Cells - exploration in a novel animal model: the Tasmanian Devil (*Sarcophilus harrisii*)

Dental pulp stem cells (DPSC) are a heterogeneous population of highly proliferative stem cells located in the tooth's soft inner pulp tissue. DPSC, with their affinity for neural differentiation, have been reported to generate functional Schwann cells (SC) through *in vitro* differentiation.

This review discusses DPSC, the role they play in human regenerative medicine and their neural crest and peripheral glial origins. The review also provides an overview of a unique animal model, the Tasmanian Devil and SC-derived Devil Facial Tumour (DFT) which is devastating wild populations. The content of this review highlights the critical gap in literature, and proposes a new animal model for both DFT and peripheral nerve sheath tumours in other species, including humans.

The predisposition DPSC have towards the SC lineage is thus a very useful tool for neural regenerative therapies in the medical field. DPSC techniques have promising potential for advancement of translational research.

► <https://www.ncbi.nlm.nih.gov/pubmed/29737458>

► The Health Observatory

Impact Factor: 3.395

Lang C, Reynolds AC, Appleton SL, Taylor AW, Gill TK, McEvoy RD, Ferguson SA, Adams RJ. *Sleep Medicine*. 2018;51:133-139.

Sociodemographic and behavioural correlates of social jetlag in Australian adults: results from the 2016 National Sleep Health Foundation Study

Social jetlag is a term used to describe misalignment between biological and social time and is a problem known to negatively impact health and wellbeing. This study identified that 31% of non-shiftworking adults surveyed reported sleep time was more than an hour out of sync with participants' body clocks on weekends compared with work nights.

Social jetlag was more common in people who stayed up later than planned on work days and had a computer or phone in the bedroom and used the internet in the hour before bed. Almost twice as many working respondents with social jetlag reported going to work when they should have taken sick leave due to their state of health which is a cause for concern in Australian day workers and requires further investigation.

The publication has achieved an Almetric score of 89 (indicating social media attention including news media) and is in the 97th percentile of scores compared to outputs of the same age.

► <https://www.ncbi.nlm.nih.gov/pubmed/30165337>

CLINICAL SCIENCES, HEALTH SERVICES AND POPULATION HEALTH

► Intensive Care Medicine Research Group

Impact Factor: 79.260

The TARGET Investigators, for the ANZICS Clinical Trials Group. Peake SL Co- 1st Author. *NEJM*. November 2018; 379(19):1823-1834.

Energy-dense versus routine enteral nutrition in the critically ill

Nutrition is an essential standard of care for all critically ill patients. Usual practice typically delivers only 50-70% of international guideline-recommended calories. The TARGET trial was a 4000-patient, multi-centre, double-blind, randomised, phase III trial evaluating whether increasing calorie delivery using energy-dense versus routine enteral nutrition formulation improves 90-day survival in mechanically ventilated adults. The trial led by Professors Peake (TQE ICU) and Chapman (RAH ICU) was conducted in 46 Australia and New Zealand ICUs.

The results showed no difference in 90-day mortality and patients in the energy-dense group experienced increased upper gastrointestinal intolerance and increased insulin administration. TARGET is the largest blinded randomised trial of enteral nutrition to be conducted in the critically ill and the first trial to deliver full-recommended calories.

The results were presented at the European Society Intensive Care Medicine Congress in Paris, October 2018 and the *NEJM* coordinated simultaneous online publication of the paper with the presentation of the results.

► <https://www.ncbi.nlm.nih.gov/pubmed/30346225>

SIGNIFICANT IMPACT PUBLICATIONS 2018

► Psychiatry Research Group

Impact Factor: 4.691

Stacey D, [Schubert KO](#), [Clark S](#), Amare A, Milanesi E, Maj C, Lechband S, Shekhtman T, Kelsoe J, Gurwitz D, Baune BT. *Translational Psychiatry*. 8(1):183-1-183-11.

A gene co-expression module implicating the mitochondrial electron transport chain is associated with long-term response to lithium treatment in bipolar affective disorder

This analysis published in a Nature journal showed for the first time a relationship between RNA transcription for mitochondrial proteins involved in the electron transport chain and poor response to lithium in bipolar disorder. These results suggest that lithium may act to normalise energy production in lithium responsive bipolar disorder.

► <https://www.ncbi.nlm.nih.gov/pubmed/30185780>

► Rheumatology Research Group

Impact Factor: 4.269

Pisaniello HL, [Lester S](#), Gonzalez-Chica D, Stocks N, Longo M, Sharplin GR, Dal Grande E, Gill TK, [Whittle SL](#), [Hill CL](#). *Arthritis Res Ther*. 2018 Jul 11;20(1):143.

Gout prevalence and predictors of urate-lowering therapy use: results from a population-based study

This paper demonstrates, using a large population sample, that the prevalence of gout in SA is high (6.5%). Further we found that despite gout being a common, potentially disabling joint disease, only 55% of respondents with gout in this study adhered to urate lowering therapy (ULT). Identification of key predictors of ULT use will provide guidance on prescribing strategy in clinical practice and on the quality of gout care in the community.

► <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6042461/>

► Surgical Science Research Group

Impact Factor: 2.766

Davis SS, Babidge WJ, Kiermeier A, Aitken RJ, [Maddern GJ](#). *World J Surg*. 2018 Mar;42(3):742-748.

Perioperative Mortality Following Oesophagectomy and Pancreaticoduodenectomy in Australia

Oesophagectomy (OG) and pancreaticoduodenectomy (PD) remain associated with significant perioperative mortality rates (POMR). Improved outcomes in high-volume centres have led to these procedures being centralised in some countries.

This retrospective, population-based cohort study was conducted to determine the Australian national, and state and territory based POMR associated with OG and PD, and assess trends over time using procedural data obtained from the Australian Institute of Health and Welfare. This study demonstrates a comparable Australian PD and OG POMR when correlated with international studies.

National PD POMR improved throughout the study with consistent improvement across the states and territories. However this study did highlight significant variation in PD POMR between Australian states and territories. This intra-state variation requires further investigation to determine potential causes so these can be addressed.

► <https://www.ncbi.nlm.nih.gov/pubmed/28884329>

DRUG AND VACCINE DEVELOPMENT

► Therapeutics Research Centre

Impact Factor: 6.448

Mohammed YH, [Holmes A](#), [Haridass IN](#), Sanchez WY, [Studier H](#), Grice JE, Benson HAE, [Roberts MS](#). *J Invest Dermatol*. 2018 Nov 13.

Support for the safe use of zinc oxide nanoparticle sunscreens: Lack of skin penetration or cellular toxicity after repeated application in volunteers

Skin cancers such as melanoma are on the increase especially in countries like Australia where people are exposed to strong UV sunlight. One of our common defences against sun damaged skin is the use of sunscreen. There is a lot of controversy when it comes to applying engineered nanoparticles to our skin and concern was raised from cell and animal based studies that repeated application of zinc oxide based nanoparticles used in sunscreens may help them to penetrate our skin and become absorbed to cause skin damage.

We applied zinc oxide nanoparticle based sunscreens to volunteers and used a state-of-the-art microscope to image the signal from these nanoparticles. We found that even after repeated application no nanoparticles penetrated the skin barrier. Further, no cellular toxicity was observed in the skin where the nanoparticle based sunscreen was applied. We hope these findings alleviate any consumer concerns regarding sunscreen use.

► <https://www.ncbi.nlm.nih.gov/pubmed/30448212>

► Virology Group

Impact Factor: 4.368

[Wijesundara DK](#), [Gummow J](#), Li Y, Yu W, Quah BJ, Ranasinghe C, Torresi J, [Gowans EJ](#), [Grubor-Bauk B](#). *J Virol*. 2018 92(8):e02133-17.

Induction of genotype-cross reactive, hepatitis C virus-specific cell mediated immunity in DNA-vaccinated mice

This study showed that a DNA vaccine cocktail was able to induce cell mediated immunity to several different genotypes of the hepatitis C virus. This is important because several genotypes circulate in the community and in order to protect against infection, it is necessary to ensure that vaccinated individuals develop immunity against each of the major circulating genotypes.

► <https://www.ncbi.nlm.nih.gov/pubmed/29437963>

INFLAMMATORY DISEASE

► ENT Surgery

Impact Factor: 13.258

Paramasivan S, Lester S, Lau A, Ou J, Psaltis AJ, Wormald PJ, Vreugde S. *J Allergy Clin Immunol.* 2018 142(5):1673-1676.

Tertiary lymphoid organs: A novel target in patients with chronic rhinosinusitis

In this project, we did a microfluidic qPCR assay on samples from controls and CRS patients in relation to histological parameters of inflammation. Our results show a unique transcriptional signature of CRS patients with nasal polyps, separating them from both the control and CRS without nasal polyps (CRSsNP) cohorts. We have also found that the presence of Tertiary Lymphoid Organs (TLOs), an agglomeration of inflammatory cells in a lymph-node like follicle, is associated with a distinct gene-expression profile marked by general upregulation of examined genes.

Our findings indicate TLO positive CRS patients represent a potential novel endotype with strong prognostic implications. TLOs might present a novel target for individualised biological therapy to alleviate poor outcomes and severe inflammation seen in this subset of patients with CRS.

► <https://www.ncbi.nlm.nih.gov/pubmed/30096389>

► Growth and Repair of the Small Intestine

Impact Factor: 2.819

Dudhwala ZM, Drew PA, Howarth GS, Moore D, Cummins AG. *Dig Dis Sci.* 2018: Oct 31, 1007/s10620-018-5286-y.

Active beta-catenin signaling in the small intestine of humans during infancy

To our knowledge we are the only group in the world currently investigating growth and development using biopsies of the small intestine from human babies, infants and children. This study was undertaken with full informed parental consent. These tiny pinch biopsies are taken during endoscopy by colleagues at the Women's and Children's Hospital in subjects already committed to endoscopy but with possible disease not involving the small intestine (eg. reflux oesophagitis, ingestion of foreign body).

The significance of this work is that it is beginning to show the fine control of intestinal growth in humans. We suspect that down-regulation and control of apoptosis (cell death) is as important as inducing proliferation of intestinal stem cells.

► <https://www.ncbi.nlm.nih.gov/pubmed/30382540>

► Inflammatory Bowel Disease Research Group

Impact Factor: 17.016

Bryant RV, Friedman AB, Wright EK, Taylor KM, Begun J, Maconi G, Maaser C, Novak KL, Kucharzik T, Atkinson NSS, Asthana A, Gibson PR. *Gut.* 2018 May;67(5):973-985.

Gastrointestinal ultrasound in inflammatory bowel disease: an underused resource with potential paradigm-changing application

Evolution of treatment targets in Inflammatory Bowel Disease (IBD) has increased the need for objective monitoring of disease activity

to guide therapeutic strategy. Although mucosal healing is the current target of therapy in IBD, endoscopy is invasive, expensive and unappealing to patients.

GI ultrasound (GIUS) represents a non-invasive modality to assess disease activity in IBD. It is accurate, cost-effective and reproducible. GIUS can be performed at the point of care without specific patient preparation so as to facilitate clinical decision-making. As compared with ileo-colonoscopy and other imaging modalities (CT and MRI), GIUS is accurate in diagnosing IBD, detecting complications of disease including fistulae, strictures and abscesses, monitoring disease activity and detecting postoperative disease recurrence. International groups increasingly recognise GIUS as a valuable tool with paradigm-changing application in the management of IBD; however, uptake outside parts of continental Europe has been slow and GIUS is underused in many countries.

The aim of this review was to present a guide to the positioning of GIUS in IBD clinical practice, providing evidence for use, algorithms for integration into practice, training pathways and a strategic implementation framework.

► <https://www.ncbi.nlm.nih.gov/pubmed/29437914>

AGEING

Photo provided by Adelaide G-TRAC Centre

ADELAIDE GERIATRICS TRAINING AND RESEARCH WITH AGED CARE (G-TRAC) CENTRE

AGEING

TQEH DEPARTMENT / AGED AND EXTENDED CARE SERVICES



The Adelaide Geriatrics Training and Research with Aged Care (G-TRAC) Centre aims to improve health outcomes and well-being of older people through high-quality clinical geriatrics and gerontology training and innovative translational research. G-TRAC Centre research includes research through the Aged and Extended Care Services at The Queen Elizabeth Hospital and through the G-TRAC Centre campus located at Resthaven Inc. in Paradise.

Researchers from the Adelaide G-TRAC Centre lead the NHMRC Centre of Research Excellence (CRE) in Frailty and Healthy Ageing, a global transdisciplinary research network and are investigators of the Registry of Older South Australians as well as the NHMRC Centre of Research Excellence (CRE) Translating Nutritional Science to Good Health.

Key findings in 2018

In 2019, there will be a Royal Commission into Aged Care Quality and Safety. Our clinicians are involved in the provision of specialist geriatric medicine services to older people, many who are also consumers of aged care services. The provision of quality services in the community may reduce reliance on hospital services.

We proposed the world's first frailty screening tool (FRAIL-NH) for residential aged care in 2015 and began to validate the tool internationally. We have now confirmed, both in Australia as well as France, that the FRAIL-NH is able to identify older residents of nursing homes that are at increased risk of death.

We further confirmed in Australia that the FRAIL-NH was able to identify older residents of nursing homes that were at increased risk of hospitalisation. This screening tool is now available for implementation in clinical practice. Interestingly, in one South Australian residential aged care organisation, those most frail were less likely to be hospitalised than those mild or moderately frail despite being at higher risk of death.

Strategies implemented over time by the organisation relating to end of life care planning as well as the employment of a palliative care nurse practitioner may possibly explain this finding. In Australia, there are more than 100,000 older people on the national queue for a home care package with some allocated

a lower level of service than what they require whilst others are without any service. We explored the question if waiting longer for a home care package was associated with poorer health outcomes in the nationwide historic cohort of the Registry of Older South Australians (July 2003 to June 2013).

We found that, when compared to those waiting less than thirty days, those waiting more than six months had a 20% increased risk of mortality and a 10% increased risk of requiring permanent residential care. However, this effect was seen two years after they had received their home care package.

Outcomes for the community

Our research is focused on providing the necessary evidence base to support innovation in health service policies as well as models of care whilst ensuring that the consumer voice is considered. We strive to include consumer groups that sometimes miss out on research such as those most frail, with dementia and those in residential aged care.

Our research raises awareness in the community as well as with policy makers and funders that geriatric syndromes are common (e.g. frailty, sarcopenia, falls and dementia) and result in poor health outcomes but there are interventions that can help prevent or treat these syndromes.

The development of screening strategies allows for early identification of risk where intervention might be effective. Screening also allows targeting of appropriate interventions that include exercise or rehabilitation, good nutrition, appropriate prescribing and advance care planning. The investigation of novel interventions across the continuum of care (e.g. hospital, community, residential aged care) provide for new treatments or models of care.

► Publications for Adelaide Geriatrics Training and Research with Aged Care (G-TRAC) Centre

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Australian-first trial using botox as a medical therapy for stroke patients

MANDY'S STORY

I couldn't have hoped to achieve anything like that without the Botox injections.

Mandy Bosson



Can Botox really be used for treating patients who have lost movement from a debilitating stroke?

A research project underway at TQEH is currently answering this question, using botulinum toxin (Botox) to help stroke patients suffering from a debilitating condition known as spasticity.

Led by Dr Anupam Datta Gupta and proudly supported by The Hospital Research Foundation's charitable affiliate Cure for Stroke Australia, this Australian-first clinical trial is using Botox injections as a treatment for stroke patients, aiming to improve their movement.

Spasticity is a condition brought on by a stroke, where certain muscles are continuously contracted, causing stiffness or tightness of the muscles. This can interfere with normal movement, leaving patients unable to complete basic tasks.

"Our research is suggesting that Botox can make a significant difference to stroke patients living with this heartbreaking condition. Our trial will help ensure this treatment can become more accessible to all Australians in need," Dr Gupta said.

Someone who knows all too well about this devastating condition is Elizabeth

(Mandy) Bosson. Her life turned upside down after suffering a major stroke in September 2012 at just 51-years-old. What began as a horrendous headache during a work meeting left Mandy paralysed down one side of her body within half an hour.

"I suffered a haemorrhage and ended up in intensive care, followed by lengthy rehab, undergoing significant physiotherapy, speech pathology and occupational therapy. The most frustrating thing was being unable to drive. I was house bound," Mandy explained.

The stroke left Mandy with severe physical side effects, causing her life to change instantly. She went from having a successful career and the freedom to live, to being unable to talk and forced to give up her job at The City of Adelaide.

Refusing to accept her prognosis, Mandy pushed herself, undergoing intensive rehab and learning how to speak again. She found hope when Dr Gupta became her specialist and began injecting Botox in her leg to assist with her movement.

"I felt the effects begin to kick in after about a week, and with the help of physiotherapy, it made such a difference to my mobility. Without the ongoing Botox injections I am at a higher risk of falling and

my movement is very limited. I can now drive again and I have my independence back," Mandy said.

"I couldn't have hoped to achieve anything like that without the Botox injections."

Dr Gupta hopes to recruit 80 stroke patients who are living with spasticity over the next three years to participate in his trial. They will be receiving Botox injections approximately every six months along with physiotherapy, helping with their movement, which Dr Gupta says will improve their quality of life.

"If Botox injections can help improve the function and balance for those who've suffered a stroke and have been told they can no longer drive or walk unassisted, then it will lift their spirits knowing their condition can be improved," Dr Gupta said.

Dr Anupam Datta Gupta (Adelaide G-TRAC Centre, TQEH Department of Rehabilitation Medicine) and Mandy Bosson.

CANCER

Research Groups

Breast Biology and Cancer Unit

Breast Cancer Research Unit

Colorectal Cancer Research Group

Liver Metastasis Research Group

Solid Tumour Group

South Australian Prostate Cancer
Clinical Outcomes Collaborative
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CANCER



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The Breast Biology and Cancer Unit was established at the Basil Hetzel Institute in 2011. The goal of our research is to better understand the biological mechanisms that underpin breast cancer risk factors including menstrual cycling, pregnancy and breast density to aid in the prevention and early detection of breast cancer.

Key findings in 2018

A key focus of our laboratory is dissecting the underlying biological mechanisms that drive breast density (also known as mammographic density), which is important in understanding why women with high density have increased breast cancer risk. This research may provide targets for intervention in the future to reduce breast cancer risk in women with high breast density.

Our studies compared the function of a particular cell type in breast tissue that is associated with high breast density, called fibroblasts. These fibroblasts were isolated from breast tissue taken from women having breast surgery at The Queen Elizabeth Hospital. We compared the function of these fibroblasts isolated from women with high breast density with fibroblasts from women with low breast density, to investigate whether fibroblasts from dense tissue could be driving increased breast cancer risk.

We next investigate the effect of a protein called CCL2 on how the fibroblasts function. CCL2 is part of the immune system and has been associated with breast cancer risk and breast density in mice. We found that CCL2 treated mammary fibroblasts exhibited an increase in production of insoluble collagen, which is also observed in breasts of high

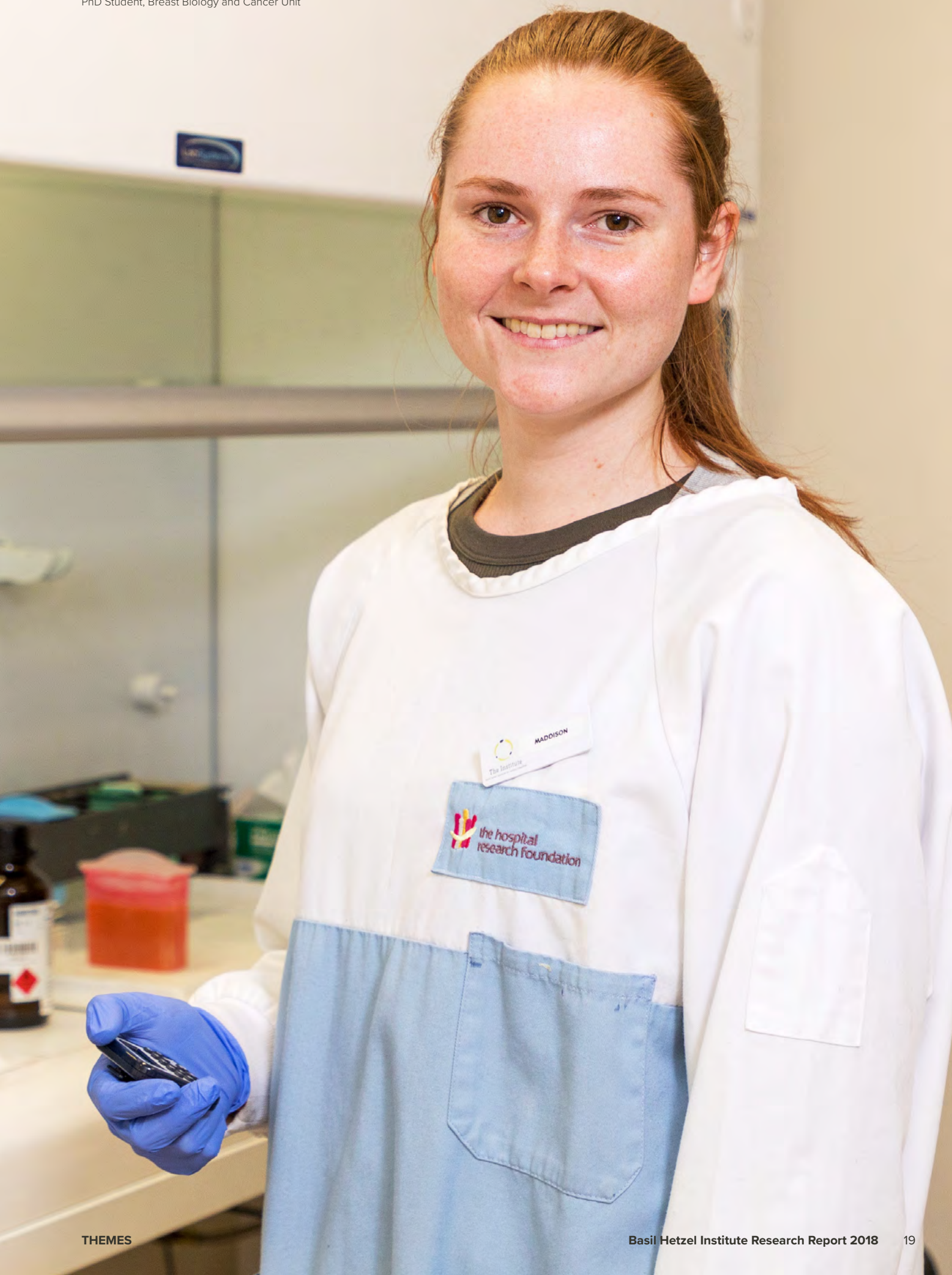
density. Overall, these studies suggest that fibroblasts from women with high breast density are not inherently different to those from women with low density. This finding builds on our ongoing research suggesting that the immune system is a key driver of breast density, and this could be instrumental in reducing density-associated breast cancer risk in the future.

Outcomes for the community

There has been much interest in breast density as a major risk factor for breast cancer, and for its role in masking breast cancers. We may in the future be able to identify young women with extremely high density at an increased lifetime risk of breast cancer, take steps to reduce that risk, and provide altered screening protocols to detect early breast cancers.

In order to reduce breast cancer risk associated with high breast density, we must better understand the underlying biology of highly dense breast tissue, and how the increased cancer risk is conferred at the cellular and molecular level. Our research suggests that chronic low level inflammation is a driver of both high breast density and the associated increased risk of cancer. This research opens new doors for treatments of breast density that could reduce a woman's breast cancer risk.

► Publications for Breast Biology and Cancer Unit



Following research around the globe to save lives

AMITA GHADGE

Breast Biology and Cancer Unit

I am hoping with my research we can identify the risk of breast cancer in young women.



Crossing countries in pursuit of her passion for research, PhD student Amita Gautam Ghadge has come to Adelaide from Mumbai in the hope her research will prevent women from being diagnosed with breast cancer.

THRF and its charitable affiliate Australian Breast Cancer Research (ABCR) are proud to fund Amita's PhD project, to develop preventative and screening strategies for breast cancer in young women. Amita is conducting her PhD through the University of Adelaide under the supervision of Associate Professor Wendy Ingman at the BHI.

"Currently there are no screening options for women who are classified as too young to get a mammogram. I am hoping with my research we can identify the risk of breast cancer in young women," Amita said.

Amita plans on achieving this by studying fat in breast development and, most importantly, how that can influence a woman's risk of breast cancer.

"We are trying to understand how increased fatness during puberty impacts breast cancer risk in adulthood. According to the literature, girls that have a high Body

Mass Index (BMI) during puberty have a lower breast cancer risk than girls with a low BMI," Amita explained.

"This is reversed and changes for women after menopause. Women who have a high BMI are more susceptible to developing breast cancer than women with a low BMI.

"High BMI is known to be an independent risk factor for breast cancer and if we can understand that fact, then hopefully we can develop a preventative strategy to identify the risk women face developing breast cancer."

Amita hopes her findings can lead to developing preventative and screening strategies to help identify women at higher risk of developing breast cancer at an earlier stage of life.

"A long-term outcome would be if we can develop these strategies and be able to identify high risk cases we could hopefully prevent breast cancer in women," Amita said.

"The funding from THRF and their generous donors means a lot to me and it's given me a chance to travel to Adelaide and pursue my passion in breast cancer research. I am very grateful to be given the

chance to work with Associate Professor Ingman whom I continue to learn from.

"If my research plays a part in developing strategies that could prevent women battling breast cancer then I would be achieving something immeasurable."

Amita Ghadge

PhD Student, Breast Biology and Cancer Unit

PhD Student

The University of Adelaide

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Scholarship

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The Breast Cancer Research Unit's primary research interest is in breast cancer and bone metastasis. Breast cancer is the most common cancer in women that metastasises to bone. Despite recent advances, our knowledge of why bone is such a fertile "soil" for tumour cells to home to the bone remains poor. Our research aims to provide vigorous preclinical data that will facilitate the translation of novel therapeutics to clinical trials for bone metastases.

Key findings in 2018

We have shown that the clinical utility of systemic adoptive therapy with gamma delta T cells may be limited by problems of selectively targeting large numbers of T cells to the tumour. We are now testing the anticancer potential of these cytotoxic gamma delta T cells for localised cancer therapy where large numbers of *ex vivo* expanded gamma delta T cells will be injected directly at the tumour site.

We have made a new discovery, demonstrating for the first time that a group of enzymes known as peroxidases which are normally released by immune cells also stimulate breast cancer growth and promote their spread by increasing collagen production while also stimulating the development of new blood vessels.

By blocking the actions of peroxidases, we hope to stop the development and spread of breast cancer. For this, we will use a specific peroxidase inhibitor known as AZD5904 that is currently being investigated in other settings and which has not been previously contemplated for cancer therapy.

Photoimmunotherapy (PIT) has been established as a potential and highly selective cancer treatment. The therapy utilises the targeting ability of highly specific HER-2 affibodies conjugated to a photosensitiser, IRD700. The conjugate benefits from the targetable property of the antibody, but relies on the cytotoxicity generated via reactive oxygen species when the photosensitiser is irradiated.

We have emerging evidence showing that PIT induces rapid and profound damage to the outer and inner membrane structures of HER-2 expressing breast cancer cells where the mAb-IRD700 is bound, leading to necrotic cell death.

Outcomes for the community

Our research provides vigorous preclinical data that will facilitate the translation of novel therapeutics to clinical trials for cancer and its spread to various organs. Our goal is to continue towards developing new and cutting-edge therapies to improve the quality of life and longevity of patients with primary and metastatic cancer.

► Publications for Breast Cancer Research Unit

Commercialisation 2018 Patent App #:61602308 filed by the University of Cyprus

Title Multifunctional Conjugates for Detection, Therapy and Monitoring of Musculoskeletal Disorders

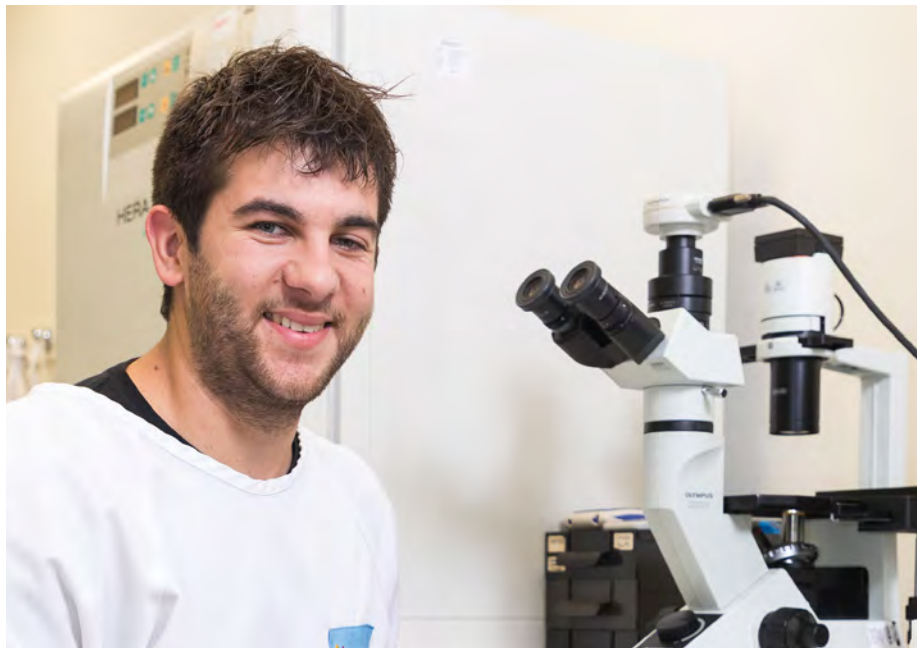
Investigators Professor Andreas Evdokiou, Dr Andreani Odysseos (EPOS-lasis Inc.), Dr Anastasios Keramidas (University of Cyprus)

Promising research to stop the spread of breast cancer

CHRIS DIFELICE

Breast Cancer Research Unit

If we are successful with this drug it could lead to an effective treatment for cancer.



Talented PhD student Chris DiFelice, based at the BHI, is undertaking lifesaving research to develop a new therapy for breast cancer that has spread to the lungs.

The survival rate of women who have metastatic breast cancer at first diagnosis is alarmingly low, with only one in four women still alive five years after diagnosis.

Determined to improve this statistic, Chris' research is focused on the idea that scar tissue can help create an environment that promotes the spread of breast cancer cells around the body.

"Given the significant overlap in pathways associated with cancer and scar tissue development, I am researching the role of a group of enzymes that have been shown to play a role in these two diseases called peroxidases," Chris said.

"With the guidance of Professor Andreas Evdokiou, our team has been able to show that these enzymes can act on cells found in the scar tissue environment, called fibroblasts.

"From this we've demonstrated that when we treat these lung fibroblasts with the peroxidases in the lab, we can stimulate them to produce collagen which is the

major protein made during scar tissue development."

This breakthrough has led to a collaboration with a global pharmaceutical company to develop a way to block the activity of peroxidases and in turn block the spread of breast cancer to the lungs.

"We are hoping that by targeting peroxidase activity, we can block the development of scar tissue and potentially reduce the growth and spread of breast cancer in the lungs. If we are successful with this drug it could lead to an effective treatment for cancer," Chris said.

Not only will this treatment help breast cancer patients, it could also help other people suffering from any fibrotic diseases in major organs such as the lungs, heart and liver.

Chris DiFelice

PhD Student, Breast Cancer Research Unit

PhD Student

The University of Adelaide

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Professor Andreas Evdokiou,
Dr Mark DeNichilo

Scholarship

Faculty of Health and Medical Sciences
full divisional scholarship, The University
of Adelaide



The colorectal surgery unit maintains a research interest in the treatment of peritoneal malignancy, rectal cancer and colonoscopy. In addition, a focus on the assessment of artificial mesh in surgery has been started by Mr Alex Karatassas.

Key findings in 2018

The group has been involved in a clinical trial, the Australasian Laparoscopic Cancer of the Rectum Trial (ALaCaRT), to compare open versus laparoscopic surgery for rectal cancer. Results published this year demonstrated that although there was no significant difference in locoregional recurrence, disease free or overall survival in this trial, the 2-year findings for recurrence and survival are consistent with the direction of pathology differences in favour of the open technique.

These early results neither confirm nor refute the argument that laparoscopic rectal cancer surgery is inferior to an open approach. However, caution is still needed in recommending laparoscopic procedures and, from the ALaCaRT results alone, laparoscopic resection could not be advocated as routine standard treatment.

Longer term follow-up on our trial and planned combined analysis with other trials on long-term recurrence rates and survival will be important and will influence what is considered the gold standard treatment for rectal cancer patients.

Outcomes for the community

During 2018 a new procedure known as Pressurised Intraperitoneal Aerosolised Chemotherapy was granted permission to start by TQEH New Procedures Committee and CALHN Human Research Ethics Committee. This is a palliative treatment for disseminated peritoneal cancers. The colorectal unit are currently participating in clinical planning and testing to prepare for the first application of this new technique. The first cases will be performed in early 2019.

► Publications for Colorectal Cancer Research Group

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The Liver Metastasis Research Group investigates the molecular and cellular immune mechanisms that determine the capacity of liver tissue to resist metastatic invasion. We have particular interest in the interaction between immune cells and tumour cells within the tumour microenvironment in primary colorectal tumours and secondary hepatic malignancy. Our goal is to address the urgent medical needs of risk prediction, prevention, early detection and treatment of liver metastases.

Key findings in 2018

Analysing blood and tissue samples from colorectal cancer patients, our group has identified several candidate diagnostic and prognostic biomarkers, respectively associated with disease occurrence and progression. Importantly, one of these circulating protein biomarkers was shown to be an independent predictor and a therapeutic target for liver metastasis in colorectal cancer patients. We are currently investigating the function of this protein *in vitro* and will test its therapeutic capacity using a mouse model of liver metastasis.

Furthermore, through our ongoing collaboration with the Drug Delivery Disposition and Dynamics research teams at Monash University we are taking part in the development and validation of drug delivery systems for therapeutic proteins and siRNA compounds.

An additional interest of the group is characterisation of the lymphocytes compartment within the microenvironment of primary and secondary colorectal tumours. We have used flow cytometry and

immunofluorescence analysis of blood, tissue biopsies and tissue microarrays to characterise the frequency, phenotype and activation state of tissue-resident CD8⁺ T cells and other lymphocyte subsets. These experimental systems revealed interesting observations that are currently being validated in a larger sample size of colorectal cancer patients.

Outcomes for the community

As the third most commonly diagnosed cancer worldwide, colorectal cancer (CRC) is an important medical health priority. The majority of CRC related deaths are attributable to liver metastasis. However, there is no prognostic biomarker that predicts metastatic risk and allows informed selection of preventive treatment.

The translational challenge is to develop surrogate markers of metastatic progression. About 25% of patients with CRC develop secondary hepatic malignancy after resection of the primary tumour and the majority of metastatic CRC patients are not amenable to surgical resection. Notably, early detection of recurrent CRC can increase patient eligibility for a range of effective treatments, reduce morbidity and improve overall survival.

Identification of new diagnostic and prognostic markers in blood samples of colorectal cancer patients can lead to development of new clinical methods for population screening, early detection and risk prediction.

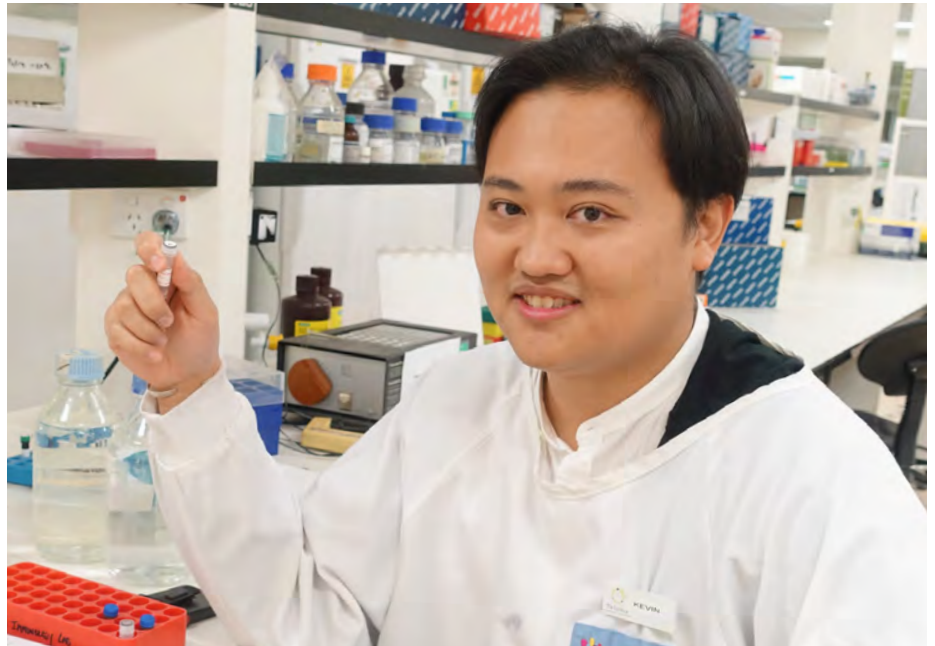
► Publications for Liver Metastasis Research Group

The immune system could help save lives from bowel cancer

DR KEVIN FENIX

Liver Metastasis Research Group

Now we are trying to understand these cells more, how they interact and what role they play in helping cancer to spread through a person's body.



Lifesaving research dedicated to preventing bowel cancer is underway by understanding and potentially targeting our own immune cells!

Leading this crucial research is Immunologist Dr Kevin Fenix from the BHI. Dr Fenix secured an Early Career Fellowship from The Hospital Research Foundation to investigate a group of immune cells that could be a key target to predict whether a patient's bowel cancer is likely to spread.

"When bowel cancer is diagnosed early, patients have a 90 per cent cure rate with the treatments currently available to them," Dr Fenix said.

"It's when the cancer reaches stage 2 and 3 that it becomes a problem. While the surgeon can remove the cancer, there is a 50 per cent chance of it returning and spreading to other areas of the patient's body, most commonly the liver. It's at this stage where patients sadly succumb to the disease."

Dr Fenix's discovery could see clinicians be able to predict when a patient's cancer is more likely to spread or return, meaning they can be more closely monitored.

"This immune cell I am studying is newly discovered, and is typically present in a person's body when they have an infection. Recently, researchers have started to see these immune cells in cancer, in fact it has already been identified in breast cancer," Dr Fenix said.

"We are very lucky to have access to a bank that stores the tissue samples of patients who have had their cancer tumour removed through surgery. With these samples spanning a 20-year period, we've been able to track these patients and discover that those whose cancer sadly did end up returning, had high levels of this immune cell.

"Now we are trying to understand these cells more, how they interact and what role they play in helping cancer to spread through a person's body."

The next step for Dr Fenix and his team is to begin collecting samples from patients who undergo surgery at the RAH and TQEH. If their findings are positive, Dr Fenix is hopeful his research could lead to a new way of detecting and treating the heartbreaking disease.

"After the patient has their surgery, we hope the clinicians will be able to test their

tissue for these immune cells to determine how likely it is for their cancer to return and spread. Once we understand the cells more we'll know if there is potential for a new treatment based on this finding."

Whilst in its early stages, this research could save the lives of so many diagnosed with bowel cancer in the future.

Dr Kevin Fenix
Liver Metastasis Research Group

THRF Early Career Fellow
The University of Adelaide



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The Solid Tumour Group, incorporating the SAHMRI Colorectal Cancer Node, is headed by Professor Tim Price and works on a comprehensive program in colorectal, neuroendocrine and breast cancer spanning prevention, development and novel therapies.

Themes include identification, development and clinical trial of new therapeutic agents for the treatment of colorectal cancer and breast cancer, development of new biomarkers of drug resistance and therapeutic targets, and mouse models of breast and colon cancer for efficacy testing of new drugs.

Key findings in 2018

Young Onset Bowel Cancer

Colorectal cancer (CRC) is rising in incidence in young adults, and this observation is currently unexplained. In addition, young adults with CRC are more likely to present at an advanced stage of disease. Hence there is a need to identify young adults at increased risk for CRC in the general population, as currently they are not included in population screening.

An association has been reported between type 2 diabetes (T2D) and CRC in the general population. Though lifestyle risk factors may be involved, the early occurrence of CRC in young adults suggests that there may also be a role for inherited predispositions.

We therefore investigated whether having a personal or first-degree family history of T2D was a potential risk marker for early onset

CRC. We established the South Australian Young Onset Colorectal Cancer (SAYO) study in 2015 as a case series of young adults with CRC up to age 55. This year we have confirmed our pilot findings that 25% of young adults with CRC diagnosed under 55 years have T2D. This is significantly more frequent than the level seen in clear colonoscopy controls under 55 years (5%) or the population prevalence in this age group (also 5%). In addition, young adults with CRC also frequently reported at least one first-degree relative with T2D (59%).

All patients with personal history of T2D, where family history was known, also had first-degree relatives with T2D. Population screening is not undertaken in young adults due to low yield and potential harms. To address the rising incidence of CRC in young adults it is important to target screening to those most at risk.

Our observations suggest that there is a striking enrichment for personal and first-degree family history of T2D in young adults with CRC. Personal and family history of CRC could therefore potentially identify a subset of young adults at increased risk for CRC and in whom early screening might be appropriate.

Molecular Oncology Group

A novel anti-cancer drug Bacopaside II, a compound isolated from the traditional medicine herb *Bacopa monnieri*, inhibited tumour cell growth by inducing cell cycle arrest and apoptosis. There was a positive

correlation between dose level needed and the expression level of the water and ion channel molecule aquaporin (AQP) 1, providing evidence that this drug targets AQP1.

We also found from analysis of publicly available datasets that AQP1 expression was frequently decreased in colorectal cancer (CRC) compared to normal mucosa, and this was associated with promoter hypermethylation and increased overall survival. However AQP1 expression increased in advanced CRC, being significantly higher in stage IV compared to earlier stages. This may contribute to poorer overall survival in stage IV CRC and suggests over-expressed AQP1 is a valid therapeutic target.

Further to this work we have shown that combined doses of Bacopaside II with Bacopaside I, a related compound, acted in synergy to reduce the proliferation and migration of breast cancer cells and in particular to block the invasion of triple negative breast cancer for which effective treatments are currently lacking.

Outcomes for the community

- Identification, development and clinical trials of new therapeutic agents for the treatment of colorectal cancer and breast cancer
- Development of new cancer biomarkers of drug resistance and therapeutic targets to optimise personalised medicine approaches
- Further identification of the inherited genetic mutations associated with early onset bowel cancer
- Identification of risk factors such as familial enrichment for type 2 diabetes in young adults with bowel cancer to improve early detection in primary healthcare settings

► Publications for Solid Tumour Group

SA-PCCOC (SOUTH AUSTRALIAN PROSTATE CANCER CLINICAL OUTCOMES COLLABORATIVE)

THE UNIVERSITY OF ADELAIDE / DISCIPLINE OF SURGERY

The South Australian Prostate Cancer Clinical Outcomes Collaborative (SA-PCCOC) brings together clinicians treating prostate cancer, patients and researchers from across South Australia. The collaborative manages the state prostate cancer registry and supports research projects utilising data from the registry. The collaborative also provides a consumer website for men with prostate cancer and hosts research and community events relating to prostate cancer in South Australia.

Outcomes for the community

The SA-PCCOC hosted a community event 'Prostate Cancer – Living Well after Treatment' on 15th November 2018. The free event was sold out with 200 men and their families from the community attending. The program included a summary of SA-PCCOC activities as well as presentations from health care providers who provide services and advice that benefit men with prostate cancer.

► Publications for SA-PCCOC



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Revolutionary cancer dye stopping tumour growth

MICHAEL AND ROBERT'S STORIES

My tumour is stable now, it's stopped growing. I'm definitely better than I was and have been able to put on weight.

Michael Button



Two Adelaide fathers suffering from a rare neuroendocrine cancer are getting a new lease on life thanks to a revolutionary cancer treatment being trialled by Professor Tim Price, head of oncology and clinical cancer research at TQEH and BHI.

After first being diagnosed with carcinoid syndrome 14 years ago (a condition linked to neuroendocrine tumours), Michael Button of Semaphore Park was the first neuroendocrine tumour patient in the world to receive the treatment.

It involves a chemical red dye - known as Rose Bengal - being injected directly into the patient's tumour. The dye has been found to regress tumours in melanoma patients and is now being tested on other cancers.

"The Rose Bengal treatment is aimed at stimulating the immune system to help the body fight the tumour," Professor Price said.

"A radiologist uses an ultrasound to identify a lesion in the liver, then with a needle they inject the Rose Bengal into the same lesion under local anaesthetic."

Only about five in one million people get a carcinoid tumour and even fewer develop

true carcinoid syndrome. The syndrome has a range of uncomfortable day-to-day symptoms like diarrhea, abdominal cramps, shortness of breath and flushing.

For Michael, whose quality of life was gradually worsening, two treatments of Rose Bengal dye in 2017 and another in 2018 has significantly improved his outlook.

"My tumour is stable now, it's stopped growing," Michael said. "I'm definitely better than I was and have been able to put on weight."

With the wedding of his daughter Emily in May 2018, being healthy enough to walk her down the aisle was a huge priority.

"When Tim first told me about it and asked if I'd be willing to trial it, I jumped at the chance. Anything to find a cure and feel better," he said.

"Neuroendocrine cancer affects the heart valves so I've had three heart valves replaced, which was pretty scary for my family.

"(But) my daughter's wedding day went off without a hitch!"

Left: Michael Button and his daughter on her wedding day.



Modbury North grandfather Robert Ellis' carcinoid tumour was first found 12 years ago on New Year's Eve. After suddenly falling ill, he was undergoing emergency surgery for a suspected twisted bowel when a pathologist was surprised to see the tumour.

"The pathologist had never seen a carcinoid tumour in a live patient before," Robert said.

To manage the day-to-day impacts of the syndrome - and allow him to keep up with his much-loved grandkids - Robert was having chemical injections every 21 days.

"I had 216 of these before Tim decided I was special enough to trial Rose Bengal!" he joked. "It worked really well, the symptoms are diminishing in their severity."

In a further positive sign, Robert may even be benefitting from the 'bystander' effect.

"Instead of it just fighting the carcinoid tumour in the local area, it is spreading to fight the other tumours too. At my next gallium scan which maps out where the tumours are, for the first time we saw a reduction."

The trials are ongoing, with Rose Bengal having the potential to be used to treat other stomach, lung and breast cancers.

Right: Robert Ellis and his grandson.

Research Groups

**Cardiovascular Pathophysiology
and Therapeutics Group**

**Clinical Pharmacology
Research Group**

**Translational Vascular Function
Research Collaborative (TVFRC)**

Vascular Surgery Research Group

**Zinc and Cardiovascular Disease
Research Group**



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The Cardiovascular Pathophysiology and Therapeutic Group's main interests concern the delineation of pathogenesis in common, but poorly understood, causes of heart disease and the development of new therapeutic options to improve outcomes in both acute and chronic heart disease. We investigate:

- Pathophysiology/therapeutic evaluations: Takotsubo syndrome, coronary artery spasm, aortic valve stenosis, cardiotoxicity of anti-cancer drugs
- Agents with potentially novel utility: Nitroxyl donors, perhexiline, N-acetylcysteine, anti-aggregatory agents (clopidogrel/ticagrelor)

Key findings in 2018

Takotsubo syndrome Work has continued on both basic and clinical levels. We have shown that the development of Takotsubo Syndrome is associated with nitrosative stress within the myocardium, and that this in turn results in activation of the energy-depleting enzyme PARP-1. Slow recovery of patients from Takotsubo syndrome reflects persistence of impairment of myocardial energetics for at least a 4-month period after initial attacks.

We have established a registry of Takotsubo patients, and are now following more than 350 patients, making this the largest registry in Australia. Data from this registry are being utilized collaboratively with the InterTAK group (Zurich) to evaluate natural history and determinants of outcomes.

Our own utilization centres on the recently recognised association between Takotsubo syndrome and cancer. Finally, we have undertaken a randomised study to reduce the impact of attacks on impairment of cardiac function.

Coronary artery spasm We have shown that patients with coronary artery spasm exhibit impairment of platelet signalling through both the nitric oxide and prostacyclin pathways, meaning that they are more prone to thrombus formation and to vasoconstriction. This problem is exacerbated during symptomatic crises of this condition. Efforts are being made to further characterise the implied vascular-platelet interaction which we have delineated, in order to improve treatment for this condition.

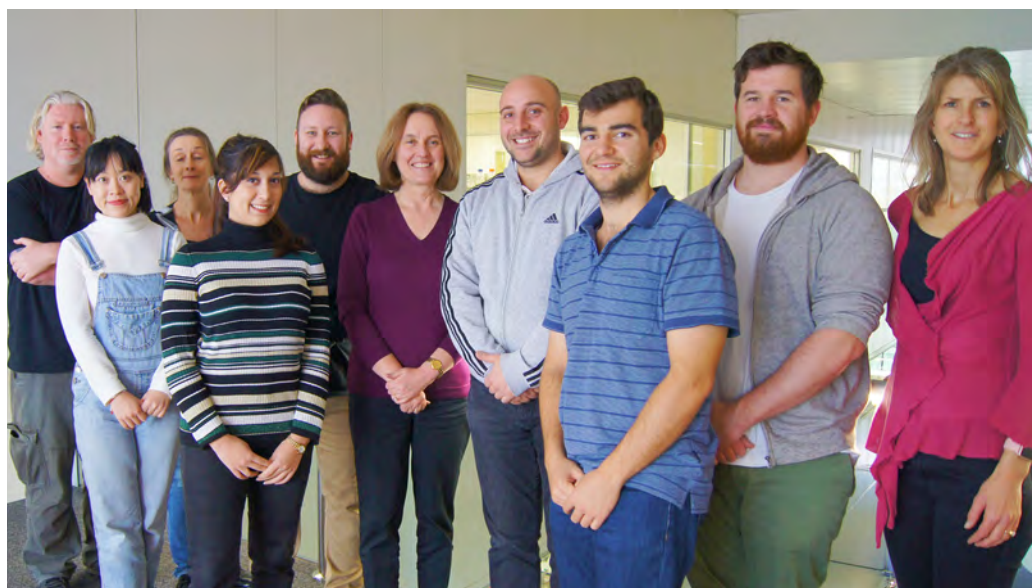
Pathogenesis of complications of atrial fibrillation The reasons why patients with atrial fibrillation suffer strokes and serious bleeding episodes while on treatment have never been delineated. We have demonstrated, using the ARISTOTLE cohort of patients, that the nitric oxide synthase inhibitor ADMA predicts the risk of strokes, and of mortality risk, while its pro-inflammatory enantiomer SDMA predicts serious bleeding risk, in patients with atrial fibrillation.

Outcomes for the community

There are a number of important implications of our recent findings for health care delivery to the general community.

1. **Takotsubo syndrome** is a major cause of long-term morbidity and mortality, especially in ageing women. Our recent findings will expedite diagnosis and our pathogenetic findings will help to improve treatment.
2. Our findings regarding **coronary artery spasm** will improve prospects of restoring a more normal quality of life to these patients, via early establishment of diagnosis, better treatment and thus suppression of symptoms.

► Publications for Cardiovascular Pathophysiology and Therapeutics Group



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The Clinical Pharmacology Unit has had a long-term interest in developing better therapies for the treatment of heart disease. We have focussed on refractory angina, where patients have failed, or are contraindicated for, conventional therapy and continue to experience severe symptoms. We are also moving into the area of cancer chemotherapy, for which the development of heart failure is often an adverse effect that limits the duration and efficacy of therapy. This places patients at greater risk of treatment failure or relapse, and concomitant heart disease.

infrastructure grant to establish non-invasive small animal echocardiography facilities at the Basil Hetzel Institute.

We have also continued our collaboration with UK cardiovascular researchers, who are designing and testing new drugs for the treatment of heart disease, with our laboratory providing the high sensitivity tandem mass spectrometry expertise to perform the first assessments of heart, lung, liver and blood exposures to these new agents during their early pre-clinical safety and efficacy trials.

Key findings in 2018

2018 was the first year of our 3-year funding from the National Health and Medical Research Council to develop therapies that may prevent chemotherapy-induced heart damage. We have focussed on measuring the effects of the chemotherapy drug doxorubicin on cultured human heart muscle cells and investigating 5 potential protective drugs for their ability to prevent cell death.

Our initial results suggest at least 3 of our test drugs may prevent cell death caused by doxorubicin, and one of these agents may extend the life of heart muscle cells even in the absence of doxorubicin. We are now planning on extending these observations using an animal model to confirm that protective effects on the heart are not at the expense of anti-cancer efficacy or greater side effects.

This work will be made possible by our growing collaborative expertise in small animal echocardiography which has underpinned a recent equipment/

Outcomes for the community

Our research will help improve the treatment and prevention of heart disease in general, particularly heart disease caused by cancer chemotherapy. Importantly, we aim to develop cardio-protective medicines that not only protect the heart, but also increase the cancer killing effects of the chemotherapy. We are focussing on cancers that are common in children and young adults and aim to develop new treatment combinations that will offer a better chance of cancer cure and a better quality of life (free from heart disease) for these cancer survivors.

► Publications for Clinical Pharmacology Research Group

► See also Clinical Pharmacology Research Group - Chronic Disease

TRANSLATIONAL VASCULAR FUNCTION RESEARCH COLLABORATIVE (TVFRC)

THE UNIVERSITY OF ADELAIDE / DISCIPLINE OF MEDICINE

CARDIOVASCULAR
DISEASE



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Clinical disorders involving the coronary and peripheral circulation can be largely attributed to abnormalities within blood vessels thereby compromising the blood supply to these organs. Vascular diseases include a range of conditions affecting the heart or blood vessels and remain a major cause of healthcare burden, death and poor health in Australia.

The **Translational Vascular Function Research Collaborative (TVFRC)** undertakes interdisciplinary basic, clinical and epidemiological studies into vascular diseases and dysfunction to improve our understanding of these disorders and develop new effective therapies.

The research group includes both clinicians and medical scientists located at the Basil Hetzel Institute, The University of Adelaide Medical School, the Central Adelaide Local Health Network (CALHN) and the Northern Adelaide Local Health Network (NALHN). The integrative nature of the group provides a unique opportunity to ensure that innovations are bi-directionally translated, that is, as well as the traditional bench to bedside approach, innovations are derived from identifying patients with poor outcomes, understanding the contributing clinical attributes of these patients and returning to the laboratory to discover new therapies.

The **TVFRC** is a multidisciplinary collaborative group consisting of three focus areas that have combined meetings to optimise interdisciplinary input and translation:

- Translational Vascular Molecular Physiology
- Translational Vascular Clinical Physiology
- South Australian Cardiovascular Outcomes Registry (SACOR)

TRANSLATIONAL VASCULAR MOLECULAR PHYSIOLOGY

The **Molecular Physiology** group focuses on the pathophysiology and molecular signalling of vascular disorders including coronary artery spasm, coronary microvascular disorders, peripheral vascular disorders and reperfusion injury. Laboratory studies include the assessment of isolated human vessel function using myography, followed by a series of biomolecular assays aimed to provide a mechanistic understanding of the disorders and thus direct the translation to improvements in medical therapy.

Key findings in 2018

A unique endothelial biopsy technique has been established which can be easily implemented during routine cardiac investigations. This technique of isolating endothelial cells from the linings of human coronary arteries will enable us to study the molecular and genetic basis of vascular dysfunction and cardiovascular disease. This can provide a feasible and potential tool for personalised medicine. The biopsy technique has provided samples from over 200 patients and many of these have been cryopreserved in a biobank.

Outcomes for the community

This research demonstrates that there is a real potential for capture of biological data for personalised medicine.

► Publications for TVFRC



TRANSLATIONAL VASCULAR CLINICAL PHYSIOLOGY

The Clinical Physiology research team utilise both invasive and/or non-invasive techniques to identify the presence of vascular dysfunction in patients with vascular symptoms including angina (chest pain due to insufficient blood supply to the heart) and intermittent claudication (pain and/or cramping in the lower leg due to inadequate blood flow to the muscles). Techniques include the assessment of coronary artery spasm, coronary blood flow, cardiac magnetic resonance imaging, subcutaneous blood flow and endothelial function.

Key findings in 2018

- Contributing to an international registry for patients with vasospastic angina.
- Establishing Myocardial Infarction and NonObstructed Coronary Arteries (MINOCA) as an important clinical entity which has resulted in an update to the international clinical definition of acute myocardial infarction.

Outcomes for the community

For the first time, MINOCA has been universally recognised as a distinct form of myocardial infarction requiring additional investigations to elucidate the underlying cause of the heart attack. For MINOCA patients, this has a major impact because they can be provided with a diagnosis instead of being labelled a 'false-positive' heart attack. This next step is to evaluate the most appropriate management strategies for MINOCA. A clinical trial evaluating the benefits of various medical therapies in MINOCA patients is currently underway.

► Publications for TVFRC

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TRANSLATIONAL VASCULAR FUNCTION RESEARCH COLLABORATIVE (TVFRC)

THE UNIVERSITY OF ADELAIDE / DISCIPLINE OF MEDICINE

CARDIOVASCULAR
DISEASE



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SOUTH AUSTRALIAN CARDIOVASCULAR OUTCOMES REGISTRY (SACOR)

The SACOR group is dedicated to advancing outcomes research, quality assessment and healthcare improvement with a key focus on the health status of patients with vascular disorders including their symptoms, physical limitations and quality of life.

Consistent with the changing environment in medicine, this group adopts a 'patient-orientated' approach to the delivery of health care by evaluating patient health status and quality of care delivered. The group has developed large databases and clinical quality registries from patients with coronary artery disease, microvascular disease, coronary spasm and peripheral artery disease. Most of these databases have international links thereby providing collaborative opportunities.

Key findings in 2018

Gender differences in outcomes following ST-elevation myocardial infarction (STEMI) may be attributable to delayed reperfusion. Previous Australian data reports delays in STEMI identification and the primary percutaneous coronary intervention (PPCI) process for women. Using the Coronary Angiogram Database of South Australia (CADOSA), clinical parameters of PPCI stratified by gender were evaluated.

Over a 5-year period, gender differences in pre-lab delays including presentation to hospital and STEMI recognition are now not evident. This reflects improved symptom recognition and equity of service. The overall door to balloon time is prompt in both genders, but some delays are still evident in women suggesting procedural/technical factors may account for differences.

Outcomes for the community

ST-elevation myocardial infarction (STEMI) is a severe type of heart attack that requires life-saving stenting procedure as soon as possible. We measure the timeliness of this procedure by calculating 'door to balloon time' which should be less than 90 minutes. Some previous research suggests that females have a longer door to balloon time compared to men which can result in poorer outcomes, so it is important to reduce this gap.

Our recent data from CADOSA shows that overall, STEMI patients in SA achieve door to balloon time in around one hour. Importantly, we have shown that previous delays in getting to hospital and diagnosing the STEMI for women are now not evident and this has improved the overall door to balloon time for women, reducing the gender disparity.

► Publications for TVFRC



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The Vascular Surgery Research Group studies predictive modelling to assist clinicians to judge likely outcomes from therapeutic interventions. We can predict complications and mortality after endovascular abdominal aortic repair, providing useful prognostic information to the patient and the clinician.

In 2018 we have extended predictive modelling into patients with diabetic foot ulcers. We will determine which factors predict whether a patient with a diabetic foot ulcer is likely to achieve healing of the ulcer or, adversely, ultimately require amputation of the foot or the leg.

Key findings in 2018

Our most important finding in 2018 was the identification of very significant deficiencies in nutritional status in patients being treated for diabetic foot ulcers. Vitamins and mineral levels were retrospectively analysed for diabetic patients with foot wounds seen at multidisciplinary foot clinics or admitted to the Royal Adelaide Hospital.

A total of 131 patients were recruited for the study between February 2017 and September 2018. Plasma levels of Vitamin A, C, D, E; copper, zinc and ferritin were measured. The elements most frequently found to be deficient, in descending order were: vitamin D, vitamin C, zinc, ferritin and vitamin A. None of the patients had low levels of vitamin E or copper. Of particular concern, only twenty seven percent of patients had normal levels of vitamin C. The remainder had suboptimum levels with just over half of all the patients having low or no measurable plasma levels of this vitamin.

This study has shown that, in a diabetic population with foot ulcers, the prevalence of vitamin and micronutrient deficiency is high. Special concerns exist regarding the high prevalence of vitamin C and zinc deficiency, given the key role of these micronutrients in wound healing. Although further research needs to be performed to determine the clinical implications of our findings, vitamin and mineral deficiency should be considered in diabetic patients with foot wounds.

This study was presented by Dr Guilherme Pena at the Australia and New Zealand Society for Vascular Surgery, Annual Scientific Conference, Auckland, September 2018 and has recently been submitted for publication.

Outcomes for the community

As described above, we have identified that many diabetic patients with foot ulcers have very poor nutritional status, in particular with significant deficiencies in serum levels of vitamin C and zinc. This research will inform community members with diabetes of the importance of good nutrition and perhaps discuss if they should take supplements with their treating physician.

► Publications for Vascular Surgery Research Group



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The Zinc and Cardiovascular Disease Research Group is investigating the role of the major dietary metal zinc in the blood vessels and vascular diseases. Our project will enable us to directly relate endothelial zinc levels and zinc transporter expression with endothelial dysfunction, vasoconstriction, cigarette smoking and both small and large artery disease in humans.

It will provide the rationale for zinc interventional clinical trials. Our research is supported by a new NHMRC grant for \$685,941 over 3 years (2018-20) to continue research into the roles of zinc in cardiovascular physiology and protection against disease.

4. We have further developed a technique to isolate endothelial cells from the linings of human arteries by detaching them from guide wires, catheters and stent balloons used in coronary angiograms and related procedures. This will enable us to study the relationship between zinc levels in arterial endothelium and cardiovascular disease. We have tested the procedure on samples from over 200 patients and many of these have been cryopreserved in a biobank. A manuscript detailing the method is in the final stages of preparation.

Key findings in 2018

1. In an ex-vivo model, zinc protects human skin blood vessels against a potent vasoconstrictor known as endothelin-1. The zinc protection occurred at concentrations of available zinc that circulate in the blood stream suggesting the effect is physiological. Depriving blood vessels of zinc induced them to contract.
2. We have obtained evidence for the presence of at least 6 members of the zinc transporter protein family in the endothelial linings of human skin vessels and by gene expression (RT-PCR) in human endothelial cell lines.
3. We are further developing techniques to test the hypothesis that nitric oxide signalling stimulates a rise in labile zinc ions in the endothelium and that this zinc enters adjacent smooth muscle cells and inhibits a major phosphodiesterase PDE5, leading to enhanced vasodilation.

Outcomes for the community

As we age, the zinc levels in our body decline and make us more susceptible to disease. Our studies in blood vessels are providing the scientific evidence that zinc is important for protecting us against cardiovascular disease and that maintaining or restoring zinc levels in the body through either a well-balanced diet or via zinc supplements will help to minimise the risk of developing age-related pathological changes in our vasculature. The technique to isolate endothelial cells during coronary angiograms has a potential diagnostic role in coronary artery disease.

► Publications for Zinc and Cardiovascular Disease Research Group

Rachel J and Clementine L (Translational Vascular Function Research Collaborative) at the BHI's 'The Longest Table' fundraiser for The Hospital Research Foundation



Holding onto hope thanks to research

STEPHEN'S STORY

I was at Uni when suddenly I felt like there was an elephant standing on my chest. Next thing I knew I was experiencing severe chest pain and in hospital.

Stephen Fry



Stephen Fry was living a very busy life juggling a full-time university degree, a physical job and spending time with family, when he suddenly experienced severe chest pain and was rushed to hospital.

What he thought was a heart attack, to his surprise was diagnosed as Coronary Slow Flow Phenomenon (CSFP), a condition he'd never heard of and isn't well-known to doctors.

"I was at Uni when suddenly I felt like there was an elephant standing on my chest. Next thing I knew I was experiencing severe chest pain and in hospital," Stephen said.

"I had an angiogram and was diagnosed with CSFP. From then on everything changed. I had my duties modified at work which was hard for me because I am a very physical person.

"From having good health all my life to being diagnosed with CSFP, I've had my whole lifestyle taken away from me."

CSFP is caused by a spasm (clamp down) of the microscopic blood vessels which travel throughout the heart muscle. When these vessels clamp down it resists

the flow of blood and 'slows' blood flow through the heart.

This means the heart is not receiving oxygen quickly enough and cannot work efficiently, leading to chest pain and angina, experienced by Stephen.

Stephen lives in hope he can resume his active lifestyle thanks to two clinical trials led by TQEH's Professor John Beltrame, who was instrumental in characterising CSFP, and Dr Sivabaskari (Tharshy) Pasupathy from the BHI.

"We are working to find a medical strategy to help these patients relieve their symptoms. In the past we've tried numerous drugs as well as exercise therapy which have had limited benefit, therefore the search continues," Dr Pasupathy said.

"We are hoping the new drugs we are trialling will lead to better blood flow to the heart muscle and reduce chest pain; we are also hoping one can reduce the angina episodes in these patients."

As a current participant of the trials, Stephen hopes that one of the drugs will be effective for his debilitating condition.

"CSFP has affected every aspect of

my life and I'm hoping this trial is successful so I can resume my normal physical life," Stephen said.

The Hospital Research Foundation and its charitable affiliate Australian Heart Research are proud to have supported Professor Beltrame with his research into CSFP.

CHRONIC DISEASE

Research Groups

Clinical Pharmacology
Research Group

Endocrinology Unit

Stroke Research Programme

The Health Observatory

CHRONIC DISEASE



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Despite significant advances in immunosuppressive therapies to prevent rejection in kidney transplantation, the average lifespan of transplanted kidneys has not improved in 30 years. This is because some immunosuppressants cause long-term kidney damage. Current clinical care involves the administration of a combination of immunosuppressants (tacrolimus, mycophenolate and prednisolone) and measuring their concentrations in blood or plasma to maintain exposures that minimise both rejection and toxicity.

Our research aims to improve clinical outcomes by understanding the factors that determine immunosuppressant exposures at their sites of action: the immune cells that cause rejection, and the transplanted kidney.

Whilst the presence of the *CYP3A5* polymorphism in transplant recipients had no effect on short-term outcomes, it increased accumulation of tacrolimus within the kidney, and this was even greater in transplanted kidneys that carried an *ABCB1* genetic polymorphism.

These findings provide a mechanism for our previous observation that tacrolimus-induced kidney damage was associated with greater accumulation of tacrolimus within the kidney which was not predicted by tacrolimus concentrations in blood. We hope to further develop genetic tests of both recipients and donors to better identify patients at greatest risk of kidney damage by tacrolimus.

Key findings in 2018

Our work has focussed on understanding how variability in the genes controlling immunosuppressant exposures (e.g. the *ABCB1* gene, which codes for the cellular efflux transporter p-glycoprotein; and *CYP3A* genes which code for tacrolimus metabolising enzymes) affects immunosuppressant levels in the circulation, immune cells and the transplanted kidney. This year we completed and published three clinical studies.

We have demonstrated for the first time that measuring mycophenolate within lymphocytes is a much better predictor of rejection than the current practice of monitoring plasma concentrations.

We have also confirmed that a *CYP3A5* genetic polymorphism found in approximately 15% of transplant recipients significantly affects blood tacrolimus concentrations and identified for the first time a polymorphism of *ABCB1* that also contributes to lower blood tacrolimus concentrations.

Although transplant recipients with these polymorphisms may be at greater risk of rejection, we have shown that therapeutic drug monitoring to individualise patient dosing minimises the impact of this genetic variability on rejection or short-term kidney function. However, we are also continuing to investigate the accumulation of immunosuppressants within the transplanted kidney, where they can cause toxicity.

Outcomes for the community

Our research will enhance understanding of the factors that contribute to the loss of a transplanted kidney, so that we can develop blood tests to better individualise immunosuppressant therapy and prevent rejection and kidney damage.

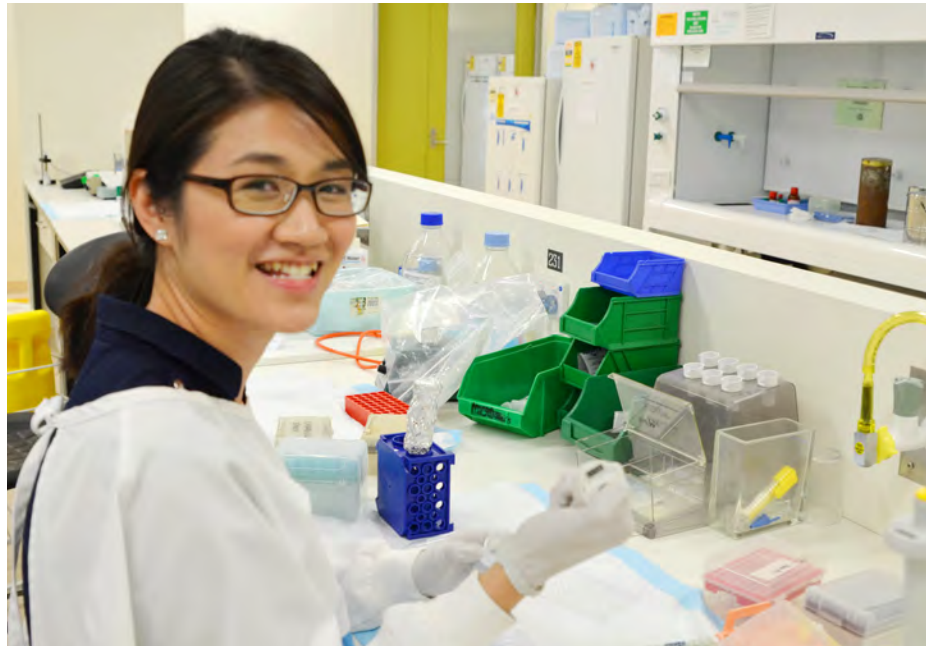
- Publications for Clinical Pharmacology Research Group
- See also Clinical Pharmacology Research Group - Cardiovascular Disease

A new strategy to prevent heart failure in diabetes

DR CHER-RIN CHONG

Cardiovascular Pathophysiology
and Therapeutics Group

My research will focus on one possibility that the diabetic heart 'runs out of energy' when processing carbohydrates as glucose.



Did you know patients with diabetes are six times more likely to develop heart disease than those without diabetes? Now, promising research could change this statistic and improve the lives of those living with this debilitating condition.

Armed with an Early Career Fellowship from The Hospital Research Foundation and its charitable affiliate Australian Heart Research (AHR), the BHI's Dr Cher-Rin Chong is undertaking research looking to combat heart failure in diabetes.

Currently, the most common problems encountered in patients with diabetes are related to heart disease, including an increased risk of heart attacks, blood clots and heart failure. The reason for this is currently unclear and Dr Chong's research is set to change this.

"My research will focus on one possibility that the diabetic heart 'runs out of energy' when processing carbohydrates as glucose. One possible cause of low energy level in a diabetic heart is the over activation of a specific enzyme," Dr Chong said.

"In addition, the heart is usually capable of using a different substance in the body to generate energy interchangeably. However, this ability is lost in the diabetic heart and

it relies on fatty acids for the generation of energy, which can restrict oxygen supply.

"All these factors contribute to an increased risk of heart failure in diabetics."

With this knowledge, Dr Chong is hoping to combat heart failure in diabetes by researching whether this enzyme activation is responsible for damaging heart function in diabetes and exactly how it does so.

"I will then investigate whether stopping this enzyme, with a specific inhibitor can reverse the malfunction of a diabetic heart and stop it from running out of energy," Dr Chong said.

"If my research proves to help the diabetic heart, the inhibitor could be used routinely to protect it, not only from the development of heart failure but also to reduce the impact of associated vessel disease on the function of the heart."

Dr Chong is hopeful her research will decrease the risk of heart disease in diabetes, ultimately saving the lives of all Australians living with diabetes.

"This fellowship will provide me the opportunity to test out my theory, in the hope that it will be beneficial for patients suffering diabetes one day. I also hope by the end of this fellowship I will be well-

equipped to advance to the next stage of my career," Dr Chong said.

"I am so thankful to have received funding from THRF and AHR and I am grateful to their generous donors who have made it possible to receive this type of funding."

Dr Cher-Rin Chong

Cardiovascular Pathophysiology and
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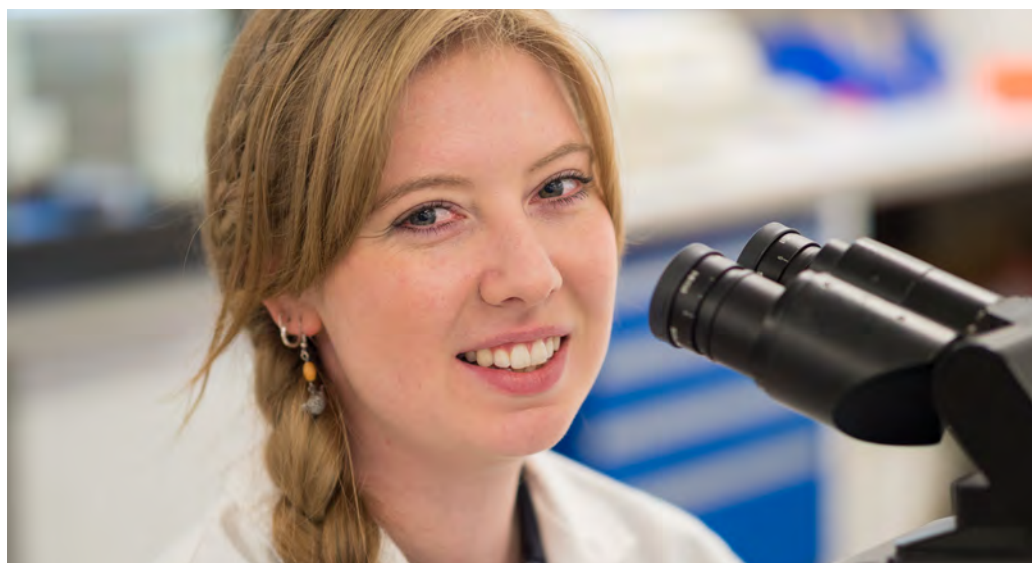
The Endocrinology Unit conducts research in endocrinology, mainly in areas relating to diabetes and osteoporosis. We aim to gain clinical endocrine knowledge through clinical trials and other research. We also conduct translational research and patient quality improvement studies to improve patient care.

Key findings in 2018

- Dr Nadia Singaraveloo carried out a preliminary audit study of patients who underwent bone density scans at the Bone Density Service, Endocrine Unit, and their follow-up treatment. The study showed that the bone density scan report and its accompanying clinical interpretations resulted in some changes to patient treatment and management by their GPs. An expanded study will follow-up these initial results.
- Dr Andrew Peel (RMO, Geelong Hospital, Victoria Health Department), under the supervision of Dr David Jesudason and Professor Gary Wittert, has finished the study of the perception of masculinity in relation to testosterone levels in a middle/old aged male population (the Men Androgen Inflammation Lifestyle Environment and Stress (MAILES) cohort). The study found that there was no association between serum testosterone and self-perception of masculinity in this cohort of middle-aged and elderly men. Lower masculinity scores were related to psychosocial factors, chronic psychological and physical disorders.

- A study by Dr David Jesudason, together with Emily Meyer (Endocrinologist, Royal Adelaide Hospital and lecturer at The University of Adelaide), followed up a serious and rare side effect, diabetic ketoacidosis (DKA), in type 2 diabetes patients treated with SGLT2 inhibitor which is an oral diabetes drug approved in 2013. The description of its prevalence, associated risk factors and diagnosis has improved the guidelines and increased patient safety on this medication.

► Publications for Endocrinology Unit



Our research investigates genetic and proteomic factors that affect the risk of stroke and of Transient Ischaemic Attack (or TIA, an early marker of stroke) and also the progress of stroke. We link internationally in our stroke-related research on genetic investigations, via collaborations with the International Stroke Genetics Collaborative and the Australian Stroke Genetics Collaborative. As part of this we investigate the cellular and molecular therapeutic application of adult stem cells and the *Npas4* gene to repair the brain after stroke.

Key findings in 2018

A review into the cost-effectiveness and value of stem cell therapy (SCT) to patients and healthcare systems was conducted – the first such systematic review to our knowledge – to evaluate the breadth and quality of current evidence on economic evaluation studies of SCT in neurological disorders. We reviewed three neurological diseases: stroke, Parkinson's disease and Secondary Progressive Multiple Sclerosis. Potential cost savings over the long-term and ongoing benefits in terms of decreased rate of disease progression and disability were reported by all studies, despite the high initial costs of SCT. Such research can potentially accelerate clinical translation.

We have continued investigations into dental pulp stem cells (DPSC) by further investigating DPSC from human, mouse and Tasmanian devil (TD) sources. Our collaborative investigated TD DPSC for their use as a treatment for the devil facial tumour, a transmissible cancer. Work towards the generation of a Schwann cell line from the TD DPSC will also help further inform our pre-clinical work on our model of DPSC in the treatment of stroke, studying the induction of neural stem cells from DPSC.

DPSC techniques have promising potential for translational research and our work may provide a very useful tool for future neural regenerative therapies in the medical field.

We were also part of a large international genetic study of clotting factors and the risk of stroke. Previous research has shown polymorphisms in coagulation genes to be associated with early-onset ischaemic stroke. This collaboration checked for variation in endothelial-based receptors of the thrombomodulin–protein C system in blood vessels, seeking any association between the genes *THBD* and *PROCR* and ischaemic stroke. Among Caucasians, a significant association was found between markers in *PROCR* and early-onset ischaemic stroke, but not in African-Americans. No association was found between *THBD* and stroke in either Caucasians or African-Americans.

Outcomes for the community

Each year 60,000 Australians suffer from a stroke and one third are left with severe disability. One aspect of our research is to work out the best time to intervene after a stroke with molecular, cellular and/or rehabilitation therapies. While results are still being analysed, we anticipate that our research may support an early adoption of multiple strategies with rehabilitation to enhance recovery following a stroke. At this stage it is uncertain as to when intervention is best administered to overcome stroke disability. The use of this research to better coordinate new therapies and also provide rehabilitation at an optimum time will be an exciting advance.

► Publications for Stroke Research Programme

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PhD Student (photo by Dennis Smith)

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Longitudinal follow-up of the MAILES (Men Androgen Inflammation Lifestyle Environment and Stress) Sleep and NWAHS (North West Adelaide Health Study) cohorts aims to better identify from people at-risk, adverse health consequences related to sleep disorders, work factors and social determinants of health.

The newly-funded NHMRC CRE National Institute for Sleep Health Research aims to develop the ability of the healthcare system to manage sleep disorders and improve sleep health. Cumberland.au applies systems thinking, design thinking, mathematical/simulation modelling and operations research to achieve lasting transformative reform in healthcare.

Key findings in 2018

The importance of gender in modifying relationships of sleep and outcomes were identified in the North West Adelaide Health Study. Gender differences are rarely considered, limiting the specificity of management advice.

The first body of work considered the moderating effect of sleep on the relationship between work-life balance and depression which has received little attention. Reduced overall work-life balance was positively associated with higher depression scores only in women and this was largely explained by overall work-life balance dissatisfaction which was moderated by sleep duration < 7.1 hr.

In men, perceptions of work interfering with responsibilities outside work was associated with depression, moderated by sleep duration < 7.6 hr. This suggests that while a global score of work-life balance may be useful for identifying risk of depressive symptoms in females, it may not in males. The benefits of sleep interventions may depend on which aspects of work-life balance are perceived to be affected by the worker.

We also examined contemporary gender differences in symptoms, health status and quality of life associated with an Obstructive Sleep Apnea (OSA) diagnosis and symptoms. In weighted analyses, both self-reported diagnosed OSA (men: 12.6%, women: 3.3%) and OSA symptoms (men: 17.1%; women: 9.7%) were more common in men than women.

Women with diagnosed OSA showed clinical characteristics overtly related to OSA including obesity, daytime sleepiness and loud snoring. Diagnosed OSA was independently associated with cardiovascular disease in men, and in women with high cholesterol, respiratory disease, insomnia and reduced SF-36 physical health scores. In both sexes, OSA symptoms were significantly associated with depression, insomnia, and severe impairments in SF-36 physical and mental health scores. Thus, a higher index of clinical suspicion of OSA may be required in women for a condition regarded as male-predominant to increase equity in health outcomes.

Outcomes for the community

Altmetric tracks commentary about papers online (news stories, tweets, blog posts, commentaries) and this statistic is increasingly used as an indicator of social relevance of research papers. In 2018, our paper from the NCD Risk Factor Collaboration on worldwide trends and variations in raised blood pressure scored in the top 1% of the 8.6 million articles across all journals.

Results from the Sleep Foundation national survey attracted considerable international media interest when it found social jetlag (misalignment between our biological time and social requirements negatively impacts health and wellbeing) was present in nearly one third of working adults and this was related to use of the internet and electronic devices in the hour before bed. People with social jetlag also reported going to work feeling unwell which has implications for the economy and productivity (top 5% of all research outputs scored by Altmetric).

► Publications for The Health Observatory

**CLINICAL SCIENCES,
HEALTH SERVICES AND
POPULATION HEALTH**

Research Groups

Anaesthesia Research Group

**Health Performance and
Policy Research Unit**

**Intensive Care Medicine
Research Group**

Oesophageal Physiology Group

Psychiatry Research Group

**Respiratory Medicine Unit and
Clinical Practice Unit**

Rheumatology Research Group

Surgical Science Research Group

CLINICAL SCIENCE



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Director

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Laryngeal Mask Airway and

High Flow Nasal Oxygen

Richard Watts

Beta-Blockers and Anaesthesia

Clinical Researchers

Arpudaswamy Kumar

Graeme Newcombe

Rajesh Sethi

Thavarajah Visvanathan

The primary research interests of our department are **Regional Anaesthesia, new applications of drugs, specific applications for and potential complications of newer Laryngeal Mask Airway Devices, and High Flow Nasal Oxygen applications.**

Key findings in 2018

- A Randomised Control Trial (RCT) is being finalized on a new regional anaesthetic technique: Transmuscular Quadratus Lumborum Block.
- Systematic reviews were published in the last 2 years on the effects of beta-blockade on analgesia, anaesthesia and postoperative nausea and vomiting.
- We are close to starting a cadaver study on Laryngeal Mask Airway pressure points.
- We are also progressing prospective trials into specific applications for Laryngeal Mask Airway devices.
- We are planning an RCT looking into advantages of high flow nasal oxygen in Endoscopic Retrograde Cholangio-Pancreatography (ERCP) procedures.

Outcomes for the community

Regional anaesthesia can improve a patient's postoperative experience by improving analgesia and reducing the effects of general anaesthesia. Beta-blockers can reduce intra-operative analgesic (opioid) and anaesthetic requirements whilst improving postoperative analgesia and reducing postoperative nausea and vomiting; again improving the patient's experience. Improved Laryngeal Mask Airway applications can increase airway safety in specific patient groups.

► Publications for Anaesthesia Research Group



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The Health Performance and Policy Research Unit assesses important end results of healthcare such as effectiveness, safety, quality and costs. Combining clinical medicine and data science, our goal is to generate research that informs clinical and policy strategies to improve healthcare quality and outcomes. We achieve this vision through critical and innovative health services research and training, and by generating research output that both stimulates and empowers clinicians and health services to improve patient care.

Outcomes for the community

The early findings of our research were presented at several local and national forums including the Cardiac Society of Australia and New Zealand Annual Scientific meeting. Outcomes included reporting long-term prognosis after hospitalisations for common cardiovascular conditions such as heart failure and myocardial infarction.

► Publications for Health Performance and Policy Research Unit

Key findings in 2018

In 2018 we completed and published a systematic review of existing knowledge about hospital readmissions in Australia. We found relatively high rates of readmissions following common cardiovascular conditions, although studies differed in their methodology making it difficult to accurately gauge the readmission rate.

We also found several knowledge gaps including lack of national studies, studies assessing the impact on the health system and few interventions proven to reduce readmissions in the Australian setting.

We also evaluated long-term survival following hospitalisations for important conditions such as an acute myocardial infarction and heart failure using nation-wide data with the preliminary results presented at national conferences.

We found an improvement in survival following heart attacks following an acute myocardial infarction but little improvement in long-term survival following hospitalisations for heart failure.



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The Department of Intensive Care Medicine participates in and conducts research aimed at improving patient outcomes, answering pragmatic, relevant clinical questions that are of importance to the clinicians who provide patient care and also deliver more efficient and effective treatments that will not only benefit critically ill patients but also decrease costs, preserve resources and increase access to scarce critical care beds.

Key findings in 2018

The Augmented versus Routine approach to Giving Energy Trial: A randomised controlled trial (TARGET NUTRITION STUDY). This NHMRC funded, CALHN-led, phase III clinical trial is the largest blinded randomised trial of enteral nutrition to be conducted in the critically ill and the first trial to deliver full-recommended calories. The results published in the NEJM showed that in patients undergoing mechanical ventilation, the rate of survival at 90 days associated with the use of an energy-dense formulation for enteral delivery of nutrition was not higher than that with routine enteral nutrition.

Adjunctive coRt icosteroid trEatment iN criticAlly iLL patients with septic shock (ADRENAL STUDY). The results of this NHMRC funded trial of hydrocortisone in critically ill patients with septic shock were published in the NEJM. In patients with septic shock who were undergoing mechanical ventilation, the administration of a continuous infusion of hydrocortisone did not result in lower mortality at 90 days than placebo. It did however demonstrate a more rapid resolution of shock and a lower incidence of blood transfusion among patients who received hydrocortisone than among those who received placebo.

The Department of Intensive Care Medicine participated in the following collaborative studies in 2018:

A multi-centre, randomised, single blinded clinical trial comparing conservative oxygen therapy to standard care in mechanically ventilated adults in the Intensive Care Unit (ICU-ROX TRIAL). This trial, funded by the Health Research Council of New Zealand, investigated minimising unnecessary exposure to hyperoxaemia in ventilated patients.

The Intensive Care Unit Randomised Trial Comparing Two Approaches to OXYgen therapy: Translating Research into Practice Study (ICU-ROX TRIPS). This study funded by the Health Research Council of New Zealand will assess the association between participating in the ICU-ROX study and changing attitudes at three time points: before ICU-ROX commencement, after ICU-ROX completion and after publication of the trial results. It aims to see whether the attitudes and practices, with respect to oxygen management, of staff in the ICUs which participate in ICU-ROX change, compared with staff from ICUs which do not participate in ICU-ROX.

A multicentre, crossover, cluster randomised controlled trial of Selective Decontamination of the Digestive Tract in Intensive Care Unit patients (SuDDICU). Selective decontamination of the digestive tract (SDD) is an infection-control strategy designed to reduce mortality by preventing sepsis. This NHMRC funded, trial will compare the effect of using SDD plus standard care, to standard care alone on hospital mortality in patients receiving mechanical ventilation.

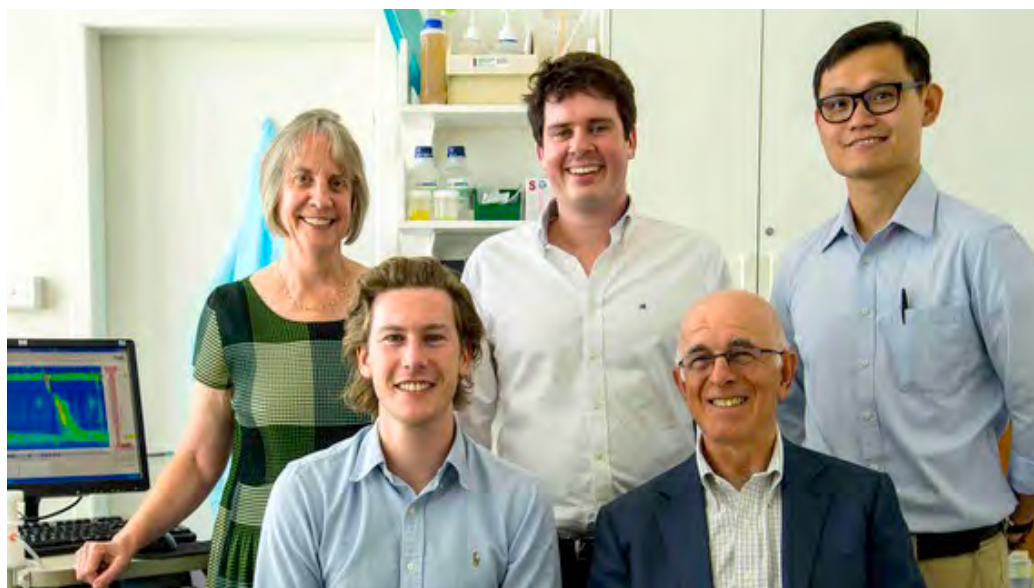
A phase III randomised controlled trial of continuous beta-lactam infusion compared with intermittent beta-lactam dosing in critically ill patients (BLING III). This NHMRC funded trial aims to determine whether continuous infusion of a beta-lactam antibiotics results in decreased 90 day all-cause mortality compared with intermittent infusion in critically ill patients with sepsis.

Outcomes for the community

The research conducted in the Department of Intensive Care Medicine has the potential to deliver more efficient and effective treatments that will benefit critically ill patients, decrease costs, preserve resources and increase access to scarce critical care beds.

► Publications for Intensive Care Medicine Research Group

L-R: **Professor Sandra Peake** TQEH Site Principal Investigator and **Professor Marianne Chapman** RAH Site Principal Investigator



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Our research explores specific aspects of pathophysiology, diagnosis and therapies for diseases of the oesophagus and upper gastrointestinal tract, including gastro-oesophageal reflux disease, motility disorders and upper gastrointestinal surgery such as fundoplication, cardiomyotomy and bariatric surgery.

Outcomes for the community

This years' research findings affirm the role of objective pre-operative investigation of oesophageal peristalsis prior to anti-reflux surgery. Further, the lack of objective testing for bile reflux following bariatric surgery, suggests that bile reflux may be underrecognized in post bariatric surgery population.

Key findings in 2018

Bile Reflux An increasingly overweight population are undergoing weight-loss operations and are at risk of bile reflux. Our review of the literature for bile reflux investigations reports on the efficacy, patient tolerability, cost, and infrastructure requirements for objective assessment of this clinical problem. At this time, whilst no gold standard exists, hepatobiliary scintigraphy is the least invasive investigation with good-patient tolerability, sensitivity and reproducibility.

Oesophageal peristaltic reserve Multiple rapid swallows (MRS) during high-resolution oesophageal manometry is a new challenge test for patients showing low amplitude peristalsis on standard testing. There is emerging evidence that MRS may be useful in determining outcomes for anti-reflux surgery. The key findings of our literature review were: inadequate peristaltic reserve before surgery was present in patients who developed post-operative dysphagia ($p < 0.02$); evidence supports multiple rapid swallows being performed in triplicate. These findings warrant further research to substantiate these findings.

► Publications for Oesophageal Physiology Group



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The Discipline of Psychiatry's research follows
6 main themes:

1. **Personalised psychiatry and genomics of psychiatric disorders**
2. **Psychiatric neuroscience and neuroimmunology of psychiatric disorders**
3. **Neuropsychiatry and psychiatric and medical comorbidities**
4. **Clinical phenotype research into the cognitive, emotional and behavioural underpinnings of psychiatric disorders**
5. **The identification of electrophysiological markers of cognition and function in psychiatric disorders**
6. **The conduct of clinical trials, including pharmacological, psychological and neurostimulation interventions.**

Key findings in 2018

We performed the first systematic review and meta-analysis of psychosocial function in clinical trials of the atypical antipsychotic clozapine for treatment resistant schizophrenia. Surprisingly, we found no significant benefit for psychosocial function, suggesting that while clozapine is superior for symptomatic treatment, psychosocial interventions are key to optimising daily function and quality of life in this cohort.

We identified that good baseline cognition and function, low medication side effects, and good insight were predictors of good functional response. We have collected detailed cross-sectional clinical and biological data from a pilot sample of 100 patients with chronic psychosis to explore biomarkers of cognition and function between patients treated with clozapine and other atypical antipsychotics.

We developed and implemented a novel protocol for the use of transcranial magnetic stimulation response measured by electroencephalography as a marker of brain plasticity, cognition and function.

We have collaborated with the Melbourne-based Orygen group to expand our study of the predictors of a first psychotic episode adding structural MRI to clinical and cognitive data.

Our team, in collaboration with the International ConLiGen Consortium, produced significant new discoveries toward the personalised prediction of lithium response in bipolar disorder including the relationship between lithium resistance and Schizophrenia genetic loading, inflammation, and the mitochondrial electron transport chain. Lithium is a first line treatment for bipolar disorder, however it is currently not possible to predict response without a treatment trial and risk of a range of adverse side effects.

Outcomes for the community

The discipline's work in the area of prediction of medication response for both lithium and antipsychotic medications and of prediction of outcomes in ultra-high risk psychosis represents significant advances toward personalised approaches for treatment for major mental illness. In the future these advances may help to reduce the delay to effective treatment, reduce medication side effects and improve outcomes for major mental illness.

The discipline's analysis of adverse events in the use of antipsychotic clozapine for treatment resistant schizophrenia has been directly translated into the South Australian Clozapine Treatment Guidelines, used as benchmarks for policy in other Australian states. These advances in knowledge will directly benefit patients with chronic psychotic illness.

► Publications for Psychiatry Research Group

RESPIRATORY MEDICINE UNIT AND CLINICAL PRACTICE UNIT

TQEH DEPARTMENT / RESPIRATORY MEDICINE UNIT AND CLINICAL PRACTICE UNIT

CLINICAL SCIENCES,
HEALTH SERVICES AND
POPULATION HEALTH



TQEH Respiratory Medicine Unit and its associated Clinical Practice Unit work across many areas relating to clinical practice and improvement of health services. The unit has a number of epidemiological research studies underway addressing knowledge and practice gaps for prevalent respiratory conditions, including: chronic obstructive pulmonary disease (COPD), asthma, bronchiectasis, sleep apnoea, pneumonia, respiratory failure and smoking. Other key areas of research are non-invasive ventilation and intervention pulmonology and Indigenous health.

Key findings in 2018

Clinical and research staff from the TQEH Respiratory Medicine and Clinical Practice Unit (RMU) engaged in several ongoing studies in 2018. The largest of these is a multistate epidemiological project to investigate potential reasons for Asthma related hospitalisations. The project is funded by and in collaboration with Asthma Australia and the Fay Fuller Foundation. The qualitative component of the study is currently underway with a large case-control project to commence in early 2019.

Pulmonary Function Scientist Pamela Kidd presented her research at the Australian and New Zealand Society of Respiratory Science Annual Scientific Meeting. The study aimed to determine if there was any difference in total lung capacity (TLC) and functional residual capacity (FRC) between the use of the gold-standard, guideline endorsed “gentle panting” technique and the “gentle tidal breathing” technique. The former requires reasonable technique on the patient’s behalf to maintain appropriate frequency; however, the latter is easier for patients to perform.

The study found that the methods were in total agreement (within 5%) for both TLC and FRC. Participants over sixty years of age greatly preferred the “gentle tidal breathing” technique as it was easier to grasp and perform. Following presentation of these results at the meeting there have been calls to revise the current practice guidelines for the administration of this test.

Outcomes for the community

Improved patient care, reduced hospital admissions for patients, improved quality of life for patients and reduced health care expenditure are expected outcomes of this research.

► Publications for Respiratory Medicine Unit and Clinical Practice Unit

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The Rheumatology Research Group aims to utilise clinical data and biological samples from a range of clinical cohorts with autoimmune and chronic inflammatory diseases, to investigate epidemiology, causation, clinical outcomes, new treatments and patient reported outcome measures.

Projects are on-going in a range of disease such as osteoarthritis, rheumatoid arthritis, Sjögren's syndrome, giant cell arteritis, polymyalgia rheumatica, gout and fibromyalgia. The Rheumatology Unit also operates one of the largest Rheumatology clinical trials centres in Australia.

Key findings in 2018

In July 2018, Dr Samuel Whittle commenced a 3-year, part-time Practitioner Fellowship as part of the Australia and New Zealand Musculoskeletal Trials Network (ANZMUSC) NHMRC Centre of Research Excellence, partly funded by The Hospital Research Foundation.

The fellowship is focused on the development of 'living' systematic reviews and guidelines. This novel approach to research synthesis and knowledge translation uses innovative techniques such as machine learning and crowdsourcing to rapidly incorporate new research findings into existing systematic reviews and translate these findings into practice guidelines that are accessible at the point of care.

Dr Whittle will be working with ANZMUSC, Cochrane and Therapeutic Guidelines to perform pilot living systematic reviews in areas of musculoskeletal medicine where there is a rapidly-evolving evidence base (for example, platelet-rich plasma and stem cell injections for knee osteoarthritis) and develop methods for incorporating these into living guidelines.

Outcomes for the community

All research within the Rheumatology Unit has a strong clinical focus. The aim is primarily to enable optimum patient clinical management and the best treatment outcomes, which requires an understanding of disease pathogenesis, the best treatments, their side effects, and which patients are at risk of undesirable outcomes.

As treatment is ultimately a partnership between clinician and patient, patient-oriented outcome measures are also an increasing focus. Patient education is also important, and the Rheumatology Unit maintains a high level of commitment and input into programs run by Arthritis SA, as well as performing qualitative research into the effectiveness of such programs.

► Publications for Rheumatology Research Group



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Australian Scleroderma Interest

Group (ASIG)

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Hope in BHI's hands

BRONWYN'S STORY

If it helps me or other people not to have to go through this much pain, then it will be worth it.

Bronwyn Hatzielenis



Living with crippling pain in her joints is a daily reality for 62-year-old Bronwyn Hatzielenis, preventing her from enjoying life's simple pleasures like going on outings, gardening, working or her beloved patchworking.

Bronwyn suffers from osteoarthritis (OA) in her hands, knees and other joints across most of her body, leaving her in extreme pain from even the most mundane activities.

"It's painful to walk and I can't stand for too long because it goes through my spine and my ankles," Bronwyn said.

"I've had to give up work, I can't go places. Wherever we go, I suffer. Everything is an effort because I know by the end of the day I'll have a migraine and my blood vessels swell up and it's just too painful.

"When you're in constant pain all the time, you get really depressed.

"I really love patchworking but I can't use my wrist to push down. I love gardening, but my sons had to remove a lot of our plants because we can't keep up with the maintenance."

A number of operations on Bronwyn's wrists and knees have been unable to stem the constant pain, so when she was put in touch with the BHI's Professor Catherine

Hill, who is trialling new treatments for OA, she was more than happy to take part.

"I'll do anything to relieve the pain! I take too much pain medication," Bronwyn said.

"If it helps me or other people not to have to go through this much pain, then it will be worth it."

Professor Hill is working on two trials for OA – one is testing the drug 'colchicine' for OA of the hand and the other is testing krill oil on knee OA.

Bronwyn is taking part of the colchicine trial for her hands, which she hopes can progress to better treatments for people living with the debilitating disease.

Up to 20 per cent of older Australians have OA of the hands and 50 per cent of these have the more painful form, called inflammatory osteoarthritis that Bronwyn experiences.

Professor Hill said the trial is much-needed as there is currently no proven drug treatment that improves pain or slows the progression of hand OA.

"Colchicine is an inexpensive drug that has been in use for many years as a drug to treat the inflammation for acute gouty arthritis," Professor Hill said.

"Preliminary studies in knee OA suggest that colchicine may also have positive benefits in OA of the hand.

"We aim to determine whether this drug will be effective at reducing pain in patients with hand OA with synovitis too."

Funded by The Hospital Research Foundation, about 60 patients will be involved in the four-month randomised study where some patients are given a placebo in place of the colchicine.

Of course, Bronwyn doesn't know which tablet she is taking but hopes the trial brings promising results to alleviate the pain.

"Anything to live a half-normal life again," she said.

Top: **Professor Catherine Hill**, Rheumatology Research Group, Rheumatology Unit TQEH.





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The Surgical Science Research Group is primarily interested in clinical research, and translational benchtop to bedside medicine in the surgical setting.

Key findings in 2018

In 2018 the Surgical Science Research Group continued its focus on enhancing teaching methods and opportunities in surgery, with a focus on how these programs can be utilised to change the culture of surgical training and practice to drive out discrimination, bullying, harassment, and sexual harassment.

A retrospective analysis of video data of an operating theatre simulation was conducted to identify how surgeons, from a range of experience levels, react to instances of harassment. Thematic analysis was used to categorize types of harassment and participant response characteristics.

The frequency of these responses was assessed and reported. From the results it was apparent that trainees are more aware of instances of harassment, and were more likely to intervene during the simulated scenario. However, a large proportion of harassment was unchallenged.

The hierarchical nature of surgical education and the surgical workforce in general needs to enable a culture in which the responsibility to intervene is allowed and respected. Effective communication, situational awareness, leadership and teamwork are all key elements to ensuring a productive, safe and enjoyable workplace and are skills which are addressed in our surgical coaching research program.

Outcomes for the community

The concept of coaching for performance improvement is an accepted and well established approach in fields such as sports, education, business and music. Only more recently has the application of this model of learning, which is grounded in established adult learning and psychological concepts, been applied in the health care setting.

This project is investigating whether surgical coaching is a potentially valuable tool to enhance surgeons' non-technical skills and if it would be beneficial to develop a surgical coaching program for General Surgeons for the purpose of improving surgeons' ongoing professional development.

In 2018 we designed and implemented a coaching program in The Queen Elizabeth Hospital surgical outpatient department. We are currently in the process of completing this pilot study research and hope to present and publish findings in 2019. Outcomes of this research are providing better trained, conscious and mindful doctors who deliver the best possible care and outcomes to their patients.

► Publications for Surgical Science Research Group

DRUG AND VACCINE DEVELOPMENT

Research Groups

Therapeutics Research Centre

Virology Group

DRUG AND VACCINE



Our focus is on mechanistic, pharmacokinetic, clinical and regulatory science studies in pharmaceutical science, therapeutics and toxicology of small molecules, biologicals, nanosystems and cells.

Our research covers development of sophisticated analytical methods for drug and poison analysis in patients, design and testing of pharmaceutical and nanosystem products, quantifying the disposition and effects of drugs and nanosystems in living cells, physiological pharmacokinetic modelling to improve therapeutics for various conditions including medicine adherence and the impact of polypharmacy.

Key findings in 2018

- Provided evidence on the safety of nanoparticulate zinc in sunscreen preparations following repeat administration to human skin.
- Provided fundamental insights into drug delivery systems and different routes of administration for a range of medicines and formulations including the impact of ageing and the limitations of available data to guide optimal therapeutic care for older people. Also provided deeper insight into the interplay between biopharmaceutics, drug delivery, pharmacokinetics and pharmacodynamics in older people.
- Gained a better understanding of skin penetration of molecules and skin delivery systems using experimentation, sophisticated imaging techniques and modelling.

Outcomes for the community

Our work provides insight into the effects of poisons on various organs of the body and potential treatments/antidotes with effective timelines including strategies for suicide prevention.

Every day people apply various compounds to their skin desiring protection (for example against UV rays), penetration through the skin to reach the underlying systemic circulation or delivery into the skin. Our data on nanoparticle toxicity helps to establish better regulatory and safety measures to keep the community safe.

Understanding how antibiotics behave (in terms of absorption, distribution, metabolism and elimination) in the critically ill and how they are altered by confounding disease states such as obesity allows for better management of treatments in this vulnerable population.

► Publications for Therapeutics Research Centre

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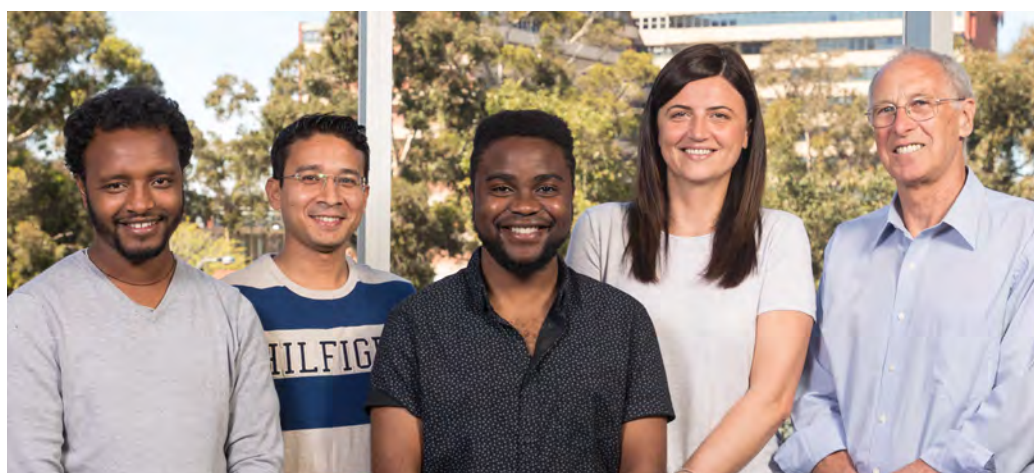
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The primary aim of our research is to develop novel vaccine strategies for human immunodeficiency virus (HIV) and hepatitis C virus (HCV). To address this, we developed a novel DNA vaccine which is more effective than typical DNA vaccines. This vaccine elicits robust cell mediated immunity in vaccinated animals, including large animals, and generates protection in a HIV animal model.

More recently, the focus has moved to develop vaccines which elicit humoral immunity that may be used independently or in combination with the vaccines which elicit cellular immunity. More recently, as Zika virus is classified in the same family as HCV, we used our expertise to examine different strategies to develop an experimental vaccine for Zika virus.

Key findings in 2018

We developed a unique DNA vaccine which protects mice against challenge with Zika virus using funds from a grant from The National Foundation for Medical Research and Innovation (NFMRI). Unlike most Zika vaccines in development, ours is not designed to elicit neutralising antibodies elicited by vaccination with the envelope protein, prM/E. Instead, our vaccine elicits humoral and cell mediated immunity induced by the Zika virus non-structural protein 1 (NS1).

Vaccination of mice with our vaccine not only resulted in robust immune responses, but also in protection against infection with Zika virus. Mice were vaccinated and challenged in Adelaide and blood samples were taken at regular intervals to test for the presence of Zika virus. These blood samples were sent to our collaborators at the Harvard Medical School, Dr Peter Abbink and Professor Dan Barouch, who tested the samples in a blinded manner. Results showed that vaccinated mice had no evidence of Zika infection while control mice had high levels of virus in their blood.

We continued our work towards the development of a vaccine to protect against infection with hepatitis C virus (HCV). To overcome the highly heterogeneous nature of HCV, we developed a cocktail of DNA viruses which elicit cell mediated immune responses to the major non-structural proteins, NS3 and NS5B, of genotypes 1b and 3a. To increase the potential efficacy of the vaccine, we generated a recombinant virus designed to result in the transient expression of these immunogens in the liver and ensure the expansion of HCV-specific tissue resident T cells. We expect that these cells will form an effective immune response against infection with HCV.

Finally, to complement our efforts to generate HCV-specific cell mediated immunity, we developed a DNA vaccine which is able to elicit antibodies against the virus envelope proteins. In an exciting development, studies performed by our collaborators in Sydney, Dr Rowena Bull and Professor Andrew Lloyd, showed that these antibodies were able to neutralise different genotypes of HCV.

Outcomes for the community

The ability to induce HCV specific neutralising antibody simultaneously with cell mediated immune responses to a number of the viral antigens is an exciting new development that has the potential to change the direction of HCV vaccine research, while the Zika work also generates a unique opportunity for introduction into human clinical trials.

► Publications for Virology Group

Commercialisation Provisional Patent application (AU2018902659), University of Adelaide

Title Zika Virus Vaccine

Investigators Dr Branka Grubor-Bauk, Dr Danushka K Wijesundara and Professor Eric J Gowans

INFLAMMATORY DISEASE

Research Groups

ENT Surgery

Growth and Repair of the
Small Intestine

Inflammatory Bowel Disease
Research Group

IN FLAM MA TORY DISE ASE



The Department of Otolaryngology, Head and Neck Surgery is focused mainly on understanding the pathogenesis of chronic rhinosinusitis (CRS), using a multidisciplinary approach, aimed at identifying new diagnostic/prognostic markers and treatment strategies to the benefit of our patients.

Research projects cover all aspects of rhinological research from pathophysiological aspects of CRS to the identification and validation of new treatment strategies *in vitro* and *in vivo*, bringing research from bench to bedside. Other aspects of our research focus on wound healing and skull base surgery.

Key findings in 2018

We have identified that a compound that is used for the treatment of iron overload conditions (deferiprone) has potent wound healing properties when applied topically. When incorporated into a surgical hydrogel, the combination product has the potential to improve wound healing after surgery.

This has applications in back surgery, sinus surgery and abdominal surgery where the product has the potential to prevent the formation of scar tissue. We are making rapid progress to achieve proof-of-concept in these areas of clinical application.

We have identified that CRS patients with specific immune signatures have a worse prognosis and more severe disease than patients that do not present with those signatures. These

findings have important implications in understanding the pathophysiology of CRS.

We have shown that bacteriophage can kill multidrug resistant pathogens isolated from within the sinuses of CRS patients. We have identified a new formulation, based on bacteriophage, which has the potential to treat infections with multi-drug resistant *S. aureus* (MRSA). The treatment is thought to be of particular benefit to patients that suffer from severe sinus infections such as in the context of cystic fibrosis.

Outcomes for the community

Our research is translational, aimed at the discovery of new treatments for CRS. Hence, our research findings are bringing direct benefit to the community by developing safe and effective new treatments for CRS.

Our department is also actively involved in direct interactions with the community with the organisation of research forums and presentations that are accessible to all. An example is the 'Pint of Science' festival, a festival held over 3 days that brings research to the public through scientific talks in local pubs. One of our postdoctoral researchers, Katharina Richter, is the South Australian director of this festival.

► Publications for ENT Surgery



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Cystic fibrosis will not define me

HARRISON'S STORY

My sinus pain has decreased and the trial has definitely helped me.

Harrison



Like any typical 16-year-old, you will usually find Harrison behind the lens capturing photos, strumming his guitar or keeping active with outdoor activities – not letting his condition of Cystic Fibrosis define him.

Harrison was diagnosed with Cystic Fibrosis three weeks after he was born. Affecting 70 babies born in Australia each year, Cystic Fibrosis is a genetic disorder affecting the lungs that can lead to breathing problems and other health issues.

His loving parents Greg and Susan explain the impact Cystic Fibrosis has had on Harrison.

“His health was good up until the age of five when he had his first hospitalisation due to lung exacerbation. At that time he also developed sinus issues,” Greg said.

“He’s been on and off antibiotics and at times has screaming pain in his sinuses and constant headaches, affecting his moods and concentration levels.”

Today, Harrison lives in hope thanks to a world-first clinical trial led by Professor Peter-John Wormald at the BHI, with support from Senior Scientist Associate Professor Sarah Vreugde.

The clinical trial uses a Bacteriophage (phage) virus that targets and kills bacteria, potentially leading to this phage therapy being used to treat sinus infections.

“This project builds on these findings and will further optimise the phage treatment by combining it with other medications that makes the phage even more effective,” Associate Professor Vreugde said.

“We are also optimising a new device that will be able to deliver the phage very effectively into the sinus cavities.”

Harrison is part of this clinical trial and washes the phage up his nose, already seeing promising results.

“I’ve been seeing Professor Wormald for a few years now and my lung health has been stable since. My sinus pain has decreased and the trial has definitely helped me,” Harrison said.

“In the five years under his care I haven’t had one hospitalisation for a bacterial lung infection, whereas previously I had six or more hospitalisations.”

Greg agrees: “It’s so great for Harrison to be part of this groundbreaking treatment that can potentially improve his

health and quality of life.

“The main challenge is keeping the infection away long enough for Harrison to heal and enjoy life without the pain. With this trial we hope it will help him at school, with friends and just having fun pain-free.”

Harrison’s determination at living in the moment and not letting his diagnosis be a barrier is reflected through his many hobbies and positive attitude.

“I’ve taught myself three instruments and I’m in a band but my main passion is photography. I am going into year 12 next year and I’m working my way towards a diploma in photography since the beginning of year 11 and plan to finish it by the end of 2020,” Harrison said.

Harrison has the world at his feet and this promising clinical trial gives everyone hope that Harrison can live life to his potential.

Photograph by Harrison

Winning the fight against superbugs

DR KATHARINA RICHTER
ENT Surgery

Iron is like chocolate for bacteria. It gives them energy to grow, cause disease, and withstand attacks from our immune systems and antibiotics.



Superbugs cause 700,000 deaths globally each year. The World Health Organisation predicts by 2050, 10 million people will die each year from antibiotic-resistant bacteria. Currently, research is underway at the BHI to change this scary statistic!

Gaining national attention for her research, postdoctoral researcher and The Hospital Research Foundation Early Career Fellow Dr Katharina Richter has tested and helped with the development of a new gel treatment currently in clinical trials to fight superbugs, such as antibiotic-resistant bacteria like golden staph.

With the clinical trial now underway at TQEH, the gel has been tested in our BHI laboratories by Dr Richter to target superbug's favourite food – iron.

"Iron is like chocolate for bacteria. It gives them energy to grow, cause disease, and withstand attacks from our immune systems and antibiotics," Dr Richter said.

"Using two different compounds, we first starve the bacteria of iron and then feed them the bacterial equivalent of poisonous chocolate, which the hungry bacteria find irresistible."

This new approach has been developed by researchers in the ENT department and is being trialled to treat patients with chronic recurring sinus infections at TQEH by Ear, Nose and Throat Surgeon Professor Peter-John Wormald.

Dr Katharina Richter
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THRF Early Career Fellow
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Postnatal growth of the small intestine and mechanisms of growth and repair.

Key findings in 2018

We published a study that used archival biopsies from human infants showing that the Wnt signalling system has high activity in the small intestine during infancy. This coincides with elevated crypt fission, when intestinal stem cells increase. We have previously shown this in rats.

We are now investigating individual components of this signalling pathway, in particular Wnt3 and R-spondin-1. However, we think that the Wnt system is not the primary cause of stem cell increase but sets the scene by reducing apoptosis (death) of stem cells.

Our other achievement was to begin using the technique of in situ hybridisation. Being able to localise specific RNA tells us which genes are active. This technique is notoriously difficult but a recent commercial development has meant it is much easier to use. We are presently collecting more biopsies.

Outcomes for the community

This research is fundamental and gives basic information about the growth factors involved in growth and development of the small intestine. This information could be used in the future in treating babies, children and adults with short bowel syndrome from congenital disease or inflammation of the small intestine, and particularly to assist recovery of pre-term infants in neonatal intensive care and allow earlier discharge.

► Publications for Growth and Repair of the Small Intestine



GROUP MEMBERS

Consultants

Sam Costello
Robert Bryant

Postgraduate Students

Alice Day
Karmen Telfer

Honours Student

Rachel Davis
Flinders University

RACP Advanced Training Projects

Arvind Rajagopalan
Dharshan Sathananthan

EXTERNAL COLLABORATORS

Jane Andrews
Royal Adelaide Hospital,
Adelaide, Australia

Michael Conlon
CSIRO, Adelaide, Australia

Patrick Hughes
The University of Adelaide,
Adelaide, Australia

Trevor Lawley
Sanger Institute, Cambridge, UK

Oliver Waters
Fiona Stanley Hospital, Fremantle,
Australia

Lito Papanicolas
Flinders Medical Centre, Adelaide,
Australia

Simon Travis
Oxford University, Oxford, UK

Peter Gibson
Monash University, Melbourne,
Australia

Sam Forster
Hudson Institute of Medical
Research, Melbourne, Australia
Sanger Institute, Cambridge, UK

CK Yau
Jaci Barrett
Monash University, Melbourne,
Australia

Jakob Begun
Translational Research Institute,
Brisbane, Australia



Our research focusses on the role of the microbiome and diet in inflammatory bowel disease (IBD) and other gut disorders and manipulating the microbiome and diet for therapeutic effect.

Key findings in 2018

In 2018 our research group published two papers on the body composition in patients with inflammatory bowel disease (IBD).

The first paper was a longitudinal follow-up study of an IBD cohort over 24 months, which revealed significant gains in body mass index (BMI) such that 62% of patients were overweight or obese at the culmination of the study. Gains in BMI related to increase in both overall and visceral fat, whereas muscle mass diminished and high rates of metabolic bone disease remained. Obesity amongst patients with IBD is a previously undocumented issue that warrants attention in routine care to prevent avoidable morbidity.

The second paper evaluated visceral adipose tissue in patients with Crohn's disease, which has been proposed to play a pathogenic role in the inflammatory disease process. Visceral adipose tissue was found to correlate with structuring Crohn's disease behaviour as well as both faecal calprotectin and quality of life in a disease-distribution dependent manner. The findings of this study demonstrate that beyond BMI, visceral adipose tissue may be a useful clinical biomarker of disease activity in Crohn's disease.

Outcomes for the community

Our research into body composition in IBD has demonstrated the clinical importance of looking beyond inflammation in IBD, so as to take into account factors that contribute to morbidity in this young patient cohort. Obesity in particular is an important public health issue, which is not widely recognised in patients with IBD.

We have also established "BiomeBank" with The Hospital Research Foundation (THRF). BiomeBank will administer the stool bank that is used to treat South Australian patients with recurrent clostridium difficile infection and conduct clinical trials of FMT.

► Publications for Inflammatory Bowel Disease Research Group

Commercialisation The University of Adelaide have licenced data from Dr Costello's faecal microbiota transplantation for ulcerative colitis study to UK company Microbiotica with the aim of developing a rationally designed microbial therapeutic or "artificial FMT".

RESEARCH STAFF 2018

BY ADMINISTRATIVE UNIT

Aged and Extended Care Services,
TQEH

Anaesthesia, Department of, TQEH

Cardiology Unit, TQEH

Clinical Pharmacology Unit, TQEH

Endocrinology Unit, TQEH

Gastroenterology and Hepatology Unit,
TQEH

Haematology and Medical Oncology,
Department of, TQEH

Intensive Care Unit, TQEH

Medicine, The University of Adelaide,
Discipline of

Neurology Unit, TQEH

Psychiatry, The University of Adelaide,
Discipline of

Respiratory Medicine Unit and Clinical
Practice Unit, TQEH

Rheumatology Unit, TQEH

Surgery, The University of Adelaide,
Discipline of/CALHN Surgical
Directorate

Therapeutics Research Centre,
University of South Australia

RESEARCH STAFF 2018

AGED AND EXTENDED CARE SERVICES, TQEH

Professor in Geriatric Medicine & Clinical Director

R Visvanathan PhD GradCertEd (Higher Ed.) FRACP FANZSGM MBBS ATCL

Clinical Associate Professor in Geriatric Medicine & Deputy Director

S Yu PhD FRACP MBBS LTCL (Deputy Director)

Consultant Epidemiologist

D Wilson PhD

Consultant Statistician

G Tucker B.MathSc PhD

Clinical Senior Lecturers & Consultant Geriatricians or Physicians

J Ng FRACP MBBS (Head of General Medicine)

K Tham Dip PalMed FRACP MBBS

F Cai FRACP MBBS

P Shibu FRACP MD CCT UK MRCP MBBS

S Nair MPhil FRACP MBBS MRCP Fellowship Geriatric Medicine (Malaysia)

K Parasivam FRACP MBBS

F Ibrahim FRACP CCT UK MRCP MBBCh LRCPsI

G-TRAC Centre Academic Staff

A Wilson PhD MN BN G Dip Health Counselling FCNA

K Umpapathysivam BSc(Hons) MSc PhD GradDip

K Khow MBBS

J Teo MBBS FRACGP

N Mahajan PhD MPsycho MAPsychol BA

T Jaques AEP AES BAppSc (H.M.) BHlthSc

B Wymand APD BNutrDiet(Hons)

Research Nurses

K Bray RN

S Hoskins RN

D Preston RNPract

Administrative Staff

CRE Frailty Manager

L Baker BSc(Hons) Grad Dip Bus Administration (GDBA)

G-TRAC Centre Administration Support Officer

N Wiltshire (until October 2018)

Postdoctoral Researchers

J Dollard PhD Grad Cert Public Health BA(Hons Psychology)

A Jadczyk Dip Sports Science PhD

D Taylor BA(Geography) MA PhD

Research Consultant GIS

J Lange MSc-GIS (Leeds, UK)

Specialist Registrars in Geriatric Medicine

M Kee MBBS - Anemia in the Elderly

K Khow MBBS - Hip Fracture in the Elderly

S Nawi MBBS - Screening for Sarcopenia in the Community

T Jayaweera MBBS - Screening for Sarcopenia in Residential Care

H Arunasalam MBBS - Sarcopenia and Lung Function

B Bickdeli MD - Ambient Intelligent Geriatric Medicine System

ANAESTHESIA, DEPARTMENT OF TQEH

Director

R Van Wijk MD PhD FANZCA FFPANZCA AFRACMA AFACHSM

Regional Anaesthesia

V Rao Kadam FANZCA

Laryngeal Mask Airway & High Flow Nasal Oxygen

V Thiruvankatarajan FANZCA

Beta-Blockers and Anaesthesia

R Watts FRACGP

CARDIOLOGY UNIT, TQEH

Professor

J Horowitz AM MBBS BMed Sci (Hons) PhD FRACP FAHA FESC

Senior Scientists

B Sallustio PhD

Y Chirkov PhD

TH Nguyen PhD

S Liu PhD

Laboratory Manager

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Research Assistant

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Clinical Trial Coordinators

M Black RN

J Stansborough RN

G Dymmott RN

P Cheung RN

Administrative Staff

P Pachen

D McCracken

CLINICAL PHARMACOLOGY UNIT, TQEH

Principal Medical Scientist/Professor

BC Sallustio BSc PhD

Senior Medical Scientist

S Spencer BSc(Med Chem)

Postdoctoral Researcher

J Licari BHSc(Hons), PhD

Research Assistant

B Lett BSc (Otago, NZ) MSc (Otago, NZ) PhD candidate, Adelaide University

Senior Technical Officers

FA Wicks BSc

A Kalaitidis BSc

Technical Officers

Z Boaden BAppSci

D Dinow BSc

C de Nichilo BSc

ENDOCRINOLOGY UNIT, TQEH

Head of Unit

D Jesudason MBBS FRACP PhD

Endocrinologists

N Laddipeerla MBBS FRACP (Endo)

K Campbell MBBS FRACP

L Gagliardi MBBS FRACP PhD

U Mushtaq MBBS FRACP

Senior Registrar

M Nenke MBBS FRACP PhD (Aug 2017 – Feb 2018)

Registrars

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L Kennedy MBBS FRACP

Y Du MBBS FRACP

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Senior Medical Scientists

J Wang BSc PhD MPH

C Seaborn BSc

E Robinson BSc

Administration

T Abbott

S Kour

V Watson

GASTROENTEROLOGY AND HEPATOLOGY UNIT, TQEH

Head of Unit

I Lidums MBBS PhD FRACP

Research Associate

AG Cummins BSc(Med) MD PhD FRACP

Senior Lecturer

DL Worthley MBBS PhD MDH FRACP

Consultants

SP Costello MBBS FRACP

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E Teo MBBS FRACP

M Teo MBBS FRACP

Hospital Scientist

W Uylaki BSc

BiomeBank Research Staff

N Cook PhD

HAEMATOLOGY AND MEDICAL ONCOLOGY, DEPARTMENT OF, TQEH

Head of Haematology and Oncology Unit/Clinical Research Program

TJ Price MBBS FRACP DHSc

Chief Medical Scientist, SAHMRI Colorectal Cancer Node

JP Young BSc MSc Grad Dip Biotech PhD

Principal Medical Scientist, Group Head Molecular Oncology Research

JE Hardingham BSc PhD

Clinical Research Staff

AR Townsend MBBS FRACP (Translational Clinical Leader)

V Broadbridge MBBS FRACP

D Patel MBBS

WK Patterson MBBS FRACP

KB Pittman MBBS FRACP MD

R Roberts-Thomson MBBS FRACP

Grant Funded Scientists

H Palethorpe BMedPharmSc(Hons) BLabMed Dip Biomed Sc PhD

E Smith PhD

W Uylaki BSc

Grant Funded Research Assistant – SAYO project

M Horsnell EN

Clinical Research Fellow 2018

LC Chong MBBS BMedSci FRACP

BREAST BIOLOGY AND CANCER UNIT

Associate Professor

W Ingman PhD

Postdoctoral Researcher

P Dasari PhD

Research Assistant

L Hodson BSc(Hons)

Research Nurse

M Warnes

CLINICAL TRIALS

Clinical Research Manager

S Yeend MClint(R)

Clinical Research Coordinators

N Cvijanovic BHSc BHS(Hons) PhD

E Egan RN

M Fragomeni (commenced Feb 2017)

A Kuruni MD

S Papacharissiou BHLthSC BBiomedSc(Hons)

A Phay BMedSc

J Williams BSc Genetics(Hons) MClint(R)

RESEARCH STAFF 2018

INTENSIVE CARE UNIT, TQEH

Director

SL Peake BM BS BSc(Hons) FJFICM PhD

Consultant Specialists

D Clayton BSc MBBS FRCA FANZCA FCICM

JL Moran MB BS FANZCA FRACP FJFICM MD

J Raj MBBS MS

N Robaa MBChD Dip Clin Ultrasound FCICM

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Nursing Staff

A McFall RN Grad.Cert Critical Care & Neonatal Intensive Care

Research Coordinator

P Williams RN BN IntC

Research Project Officer

C Kurenda

MEDICINE, THE UNIVERSITY OF ADELAIDE, DISCIPLINE OF

Michell Professor of Medicine

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Professorial Staff

RJ Adams MBBS MD FRACP

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Senior Lecturers

S Rajenderan MBBS FRACP PhD

P Zalewski BSc(Hons) PhD

Postdoctoral Researchers

S Appleton BSc(Hons) PhD

S Pasupathy PhD

Clinical Data Project Manager

R Tavella BSc(Hons) PhD

Biostatistician

T Air BA(Hons) M.Biostatistics

CADOSA Research Assistants

C Tavella BA B Media Arts

C Cilento BMedRadSc(Hons)(NucMed)

S Tan BLabMed(Hons) PhD (Molecular Microbiology)

K Sivasankar BHLthSc

CALHN (TQEH) Research Assistants

R Jakobczak BSc

M Hay BSc(Hons)

A Milton BSc(Hons) Dip Comp Sci

The University of Adelaide Research Officers

A Abdo BMedSci(Hons) PhD

A Wawer BSc (Animal Science) Wawer Poland MSc BSc (Food Technology and Human Nutrition) Warsaw Poland PhD Norwich UK Registered Nutritionist (Aust)

The University of Adelaide Research Assistant

Z Tvorogova Production Engineer (Saint-Petersburg Mining University) LabTech (Helsinki) Med Equip Maintenance (Helsinki)

HEALTH PERFORMANCE AND POLICY RESEARCH UNIT

NHF Future Leaders Fellow

I Ranasinghe MBChB MMed PhD FRACP

Research Officers

D Horton BMACompSc

S Hossain PhD

S Hariharaputhiran MD

T Dang MDevEconomics

A Ali BDenSurg (Pakistan) MEpi and Biostats (Pakistan)

NEUROLOGY UNIT, TQEH

Head of Neurology, Central Adelaide Local Health Network (CALHN)/Clinical Associate Professor

J Jannes BMBS FRACP PhD

Senior Consultant Neurologist

MK Robinson MBBS FRACP

Professor of Neurology and Neuroscience / Clinical Academic Neurologist / Director of Stroke Research Programme (SRP)

SA Koblar BMBS FRACP PhD

Chief Clinical Neuropsychologist

AC Kneebone BA Dip App Psych MA PhD FAPS

Consultant Neurologists

C Short BSc MBBS FRACP

A Tan BMBS FRACP

J Hafner BMBS FRACP

R Ghaoui BMBS FRACP

Affiliate Associate Professor / Principal Medical Scientist/Co-Director of SRP

MA Hamilton-Bruce BSc MSc MBA PhD AFCHSE CBiol FRSB CSci FIBMS

Chief EEG Technologist

J Pruszkowski Diploma in Medical Analysis

Memory Unit Secretary

K McKinna

Memory Nurse Practitioner

J Deimel RN BN

Epilepsy Nurse Practitioner

S Horn NP MNsc

Transient Ischaemic Attack (TIA) Nurse

P Toner RN BN

S Castle RN

Neurophysiology Registrar 2018

C Kurunawai MBBS

Clinical Research Trials

S Casey RN BN

Senior Medical Scientist, SRP

AG Milton BSc(Hons) Dip Comp Sci

Postdoctoral Research Fellows

K Kremer BBtech (Hons) PhD

X Kaidonis BSc (Biomed Sci) (Hons) PhD

PSYCHIATRY, THE UNIVERSITY OF ADELAIDE, DISCIPLINE OF

Professor

BT Baune MD PhD FRANZCP

Clinical Academics

S Clark MBBS PhD BSc(Hons) FRANZCP

O Shubert MD PhD FRANZCP

N Mills MBBS PhD FRANZCP

Lecturers

C Toben PhD

C Jawahar PhD

Research Assistant

E Lyrtzis BHSc (Hons Psychology)

RESPIRATORY MEDICINE UNIT AND CLINICAL PRACTICE UNIT, TQEH

Professor

BJ Smith MBBS FRACP Dip Clin Epi PhD

Consultants

J Polasek FRACP MBBS

A Roy FRACP MBBS

Z Usmani FRACP MBBS

A Veale PhD FRACP MBBS

Advanced Trainees

A Oh MBBS

S Krishnan MBBS

Principal Medical Scientist

M Jurisevic PhD

Pulmonary Function Laboratory

D Keatley BSc (Biomed) (Hons)

X Liu BSc PhD

P Kidd BEnvSc

R Morena

Clinical Research Coordinators

TB Truong BPsych(Hons)

A Tabner BAppSc

Research Officers

TB Truong BPsych (Hons)

Z Kopsaftis BMedRadSc (NucMed), BHLithSci (Hons)

Sleep Laboratory

T Faulkner BPsych (Hons)

V Coe BSc

N Elgar BSc (Hons) BTh

M Bradford BSc DipEd WHS level 1,2 & 3

A Chin BSc(Hons) RPSGT

M Smith BSc

M Shaw

D Hooper

A Teare BSc BEd RPSGT

Sleep Laboratory Nurses

J Byerly

H Dinh

K Musimbi RN GradDip Clinical Nursing

Respiratory Nurses

K Lawton BAN

K Royals RN

A Markulic GradDip Clinical Education BN

G Thomas BN GradCert Clinical Nursing

M Peskett BN

RHEUMATOLOGY UNIT, TQEH

Director

C Hill MBBS MD MSc (Epi) FRACP

Staff Consultant Rheumatologists

M Rischmueller MBBS FRACP

S Whittle MBBS (Hons) MClinEpi

S Burnet MBBS FRACP

R Black MBBS FRACP

J Tieu MBBS FRACP

Rheumatology Clinical Research Manager

S Downie-Doyle PhD

Clinical Research Coordinators

C Ruediger PhD

C Davis PhD

K Dyer BSc(Hons)

Rheumatology Infusion Nurse

C Jukic RN

Rheumatology Nurse

H Vanderhaak RN

Rheumatology Clinical Trials Nurses

A Cayzer RN

S White RN

Clinical Research Assistant

J Harris BBus

Chief Medical Scientist

S Lester BSc(Hons)

Secretary

M Devine

SURGERY, THE UNIVERSITY OF ADELAIDE, DISCIPLINE OF/CALHN SURGICAL DIRECTORATE, TQEH

RP Jepson Professor of Surgery

G Maddern PhD MS MD FRACS FAAHMS

Professor of Colorectal Surgery

P Hewett MBBS FRACS

Associate Professor

M Goggins MB BCh BAO DO FRCSI (Ophth) FRCOphth FRANZCO MS

Senior Medical Scientist

E Hauben PhD

THRF Early Career Research Fellow

K Fenix PhD

RESEARCH STAFF 2018

Research Officer

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Research Assistant

T Tin BA/BSc DipN

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PA Drew PhD

Project Coordinators

L Leopardi BSc BEng(Biomedical)(Hons)

J Reid BSc PhD

Technical Officers

M Smith

M Slawinski

B Hutchens

ENT SURGERY

Professor of Otorhinolaryngology Head & Neck Surgery and Head of Department

PJ Wormald MD FRACS FCS(SA) FRCS(Ed)

Head of Clinical Services

A Psaltis MBBS FRACS PhD

Senior Lecturers

G Rees MBBS FRACS

A Foreman MBBS MSc

S Boase MBBS FRACS

Staff Specialists

S Floreani MBBS FRACS

J Ling MBBS FRACS

K Ha MBBS FRACS

H Pant MBBS FRACS

R Valentine MBBS FRACS PhD

Rhinology Fellow

YC Zhao MBBS FRACS

ENT Registrar

V Padhye MBBS PhD

Chief Scientist, Otolaryngology Head & Neck Surgery

S Vreugde MD PhD

The University of Adelaide Early Career Research Fellow

K Richter PhD

ENT Postdoctoral Researchers

A Bassiouni PhD

C Cooksley BSc(Hons) PhD

M Ramezanpour MSc PhD

S Javadiyan MBiotech (Plant Biotechnology) PhD

ENT Research Assistants

C Bennett BMedSc

A Hayes MSc

Visiting Research Fellows

H Hu MD PhD ENT surgeon

K Ogi MD PhD

M Suzuki PhD

Secretary

A Kreutner AssocDipAcc

VIROLOGY GROUP

Professor

EJ Gowans MAppSci PhD

Postdoctoral Researcher

B Grubor-Bauk BSc(Hons) PhD

M Masavuli PhD

THRF Early Career Research Fellows

D Wijesundara BSc(Hons) PhD

A Shrestha PhD

BREAST CANCER RESEARCH UNIT

Professor

A Evdokiou PhD

Postdoctoral Researchers

I Zinonos PhD

M Masavuli PhD

THRF Early Career Research Fellow

V Panagopoulos PhD

Visiting Research Fellow

H Takezawa PhD Nippon Dental University, Japan

VASCULAR SURGERY RESEARCH GROUP

Professor

R Fitridge MBBS MS FRACS

Consultant Vascular Surgeon

J Dawson MBBS ChM MD MRCS FRCS (Gen) FRACS (Vasc) MFSTEd

Principal Medical Scientist

P Cowled BSc(Hons) PhD

Data Manager

R Battersby BSc Grad Cert Drug Dev (UNSW)

SA-PROSTATE CANCER CLINICAL OUTCOMES COLLABORATIVE

Chair

K Moretti MBBS FRACS(Urol)

THERAPEUTICS RESEARCH CENTRE, UNIVERSITY OF SOUTH AUSTRALIA

Professor

MS Roberts BPharm PhD DSc MBA FACP

Therapeutics Research Centre Manager

L Mackenzie BSc PhD

Postdoctoral Researchers/Research Associates

A Abdalla BPharm PhD

A Alinaghi BPharm PhD

A Holmes BSc(Hons) PhD

L Sandiford PhD

T Robertson BSc PhD

Research Assistants

I Haridass BPharm

L MacMaster

J Ripper BSc PhD

RESEARCH STUDENTS 2018

Completed Research Higher Degrees
& Honours

Continuing Research Higher Degree
& Honours Students

STUDENT



RESEARCHERS IN TRAINING

The Basil Hetzel Institute (BHI) is committed to providing academic training opportunities in research, and this year a total of over 90 students across our campus were being supervised by BHI clinical and research staff affiliated with either The University of Adelaide or the University of South Australia. Of these, 14 students completed their research higher degrees and were awarded either PhD's or Masters Degrees (in Surgery or Medicine) and another 4 were awarded First Class Honours Degrees. We congratulate completing recipients for their aptitude, dedication and particularly for their contribution to knowledge in their chosen field.

BHI has excellent research facilities at The Queen Elizabeth Hospital campus, providing an ideal environment for undertaking research.

Enquiries from new students with clinical (medical/nursing/allied health) and science backgrounds, are always welcome.

► Information for prospective students can be found on the BHI website.

The University of Adelaide

Postgraduate Coordinators for 2019, based at the BHI

Dr Prue Cowled

Discipline of Surgery
prue.cowled@adelaide.edu.au

Professor Betty Sallustio

Discipline of Medicine
benedetta.sallustio@sa.gov.au or
benedetta.sallustio@adelaide.edu.au

Faculty of Health and Medical Sciences Honours
Coordinator for 2019

Dr Joanne Bowen

joanne.bowen@adelaide.edu.au

Adelaide Medical School Honours Coordinator for 2019,
based at the BHI

Dr Peter Zalewski

peter.zalewski@adelaide.edu.au

University of South Australia

Associate Professor Craig Williams

School of Pharmacy and Medical Sciences
craig.williams@unisa.edu.au

L-R: **Michael Djukic** (Stroke Research Programme), **Kyaw Ze Ya Maung** (Haematology & Oncology, TQEH), **Agathe Daria Jadcak** (Adelaide G-TRAC Centre) and **Vasilios (Bill) Liapis** (Breast Cancer Research Unit) at the May Graduation Ceremony.

RESEARCH STUDENTS 2018

COMPLETED RESEARCH HIGHER DEGREES & HONOURS

LISTED ALPHABETICALLY BY SURNAME
BHI BASED SUPERVISORS ARE UNDERLINED

THE UNIVERSITY OF ADELAIDE DISCIPLINE OF MEDICINE, TQEH

PhDs

Chuks AJAERO MBBS FMCP FRACP

Interactions between Cardiac Resynchronisation Therapy and Amelioration of Peripheral Vascular Dysfunction: Impact upon Outcomes

Supervisors: Horowitz JD, Arstall M, Chan A, McGavigan A

Cardiovascular Pathophysiology and Therapeutics Group

The University of Adelaide, PhD awarded 9 November 2018

Hasan IMAM MedBiosc BPharm

Post-receptor signalling mechanisms and platelet responsiveness to ADP receptor antagonists

Supervisors: Horowitz JD, Chirkov Y

Cardiovascular Pathophysiology and Therapeutics Group

The University of Adelaide International Postgraduate Research Scholarship

The University of Adelaide, PhD awarded 9 October 2018

Agathe Daria JADCZAK Dip Sports Science

Exercise and Older People: Strategies to Prevent, Treat and Delay Frailty

Supervisors: Visvanathan R, Luscombe N

Adelaide G-TRAC Centre

The University of Adelaide, PhD awarded 22 January 2018

Zafar USMANI MBBS FRACP

Treatment of anxiety among patients with Chronic Obstructive Pulmonary Disease

Supervisors: Smith B, Esterman AJ

Respiratory Medicine Unit and Clinical Practice Unit

The University of Adelaide, PhD awarded 10 December 2018

Joshua WINDERLICH BSc(HealthSc)(Hons)

Investigations into the mechanisms of action of stem cell therapy for stroke

Supervisors: Koblar S, Kremer K

Stroke Research Programme

The University of Adelaide, PhD awarded 9 July 2018

Masters of Philosophy (Medicine)

Ruth TEH BPharm (Hon) MBBS

A health information tool to prevent falls

Supervisors: Visvanathan R, Wilson A, Mahajan N

Adelaide G-TRAC Centre

The University of Adelaide, MPhilMedSc awarded 9 March 2018

Honours

Dongqin (Kelly) CHEN BChem and Pharm Eng

Early Detection of Chemotherapy-Induced Cardiomyopathy

Supervisors: Horowitz JD, Liu S

Cardiovascular Pathophysiology and Therapeutics Group

The University of Adelaide, BHealthSc First Class Honours awarded June 2018



THE UNIVERSITY OF ADELAIDE DISCIPLINE OF PSYCHIATRY, TQEH

Honours

Kai Tit TAN BHSc

EEG and TMS/EEG biomarkers of cognition, symptoms and function in major depression

Supervisors: Clark SR, Goldsworthy M

Psychiatry Research Group

The University of Adelaide, First Class Honours Awarded 2018

Diana BOL BHSc

EEG and TMS-EEG biomarkers in cognition, symptoms and function in bipolar disorder

Supervisors: Clark SR, Schubert KO, Goldsworthy M

Psychiatry Research Group

The University of Adelaide, First Class Honours Awarded 2018

L-R: **Vasilios (Bill) Liapis** (Breast Cancer Research Unit) and **Agathe Daria Jadcak** (Adelaide G-TRAC Centre) at the May Graduation Ceremony.

RESEARCH STUDENTS 2018

COMPLETED RESEARCH HIGHER DEGREES & HONOURS



THE UNIVERSITY OF ADELAIDE DISCIPLINE OF SURGERY, TQEH

PhDs

Vahid ATASHGARAN BSc(Medical Bioscience) MBiotech(Biomedical)
Hormone and transcription factor regulation of cytokines in the mammary gland

Supervisors: Ingman W, Dasari P, Barry S

Breast Biology and Cancer Unit

The University of Adelaide, PhD awarded 15 October 2018

Dean's Commendation for Doctoral Thesis Excellence

Alistair JUKES MBBS(Hons) B.LibStud(USYD)
Haemostasis in endoscopic skull base surgery

Supervisors: Wormald PJ, Vreugde S

ENT Surgery

The University of Adelaide, PhD awarded 20 April 2018

Dean's Commendation for Doctoral Thesis Excellence

Alistair Jukes (ENT Surgery) was Mace-Bearer for the September Graduation Ceremony at The University of Adelaide.

Ho Yin (Aden) LAU MSc

An Immunological Perspective of the Mucosal Inflammation in Chronic Rhinosinusitis - Lymphoid Neo-organogenesis and Humoral Immunity

Supervisors: Vreugde S, Lester S, Rischmueller M

ENT Surgery & Rheumatology Research Group

The University of Adelaide, PhD awarded 11 July 2018

Makutiro MASAVULI BSc(Hons)

Novel DNA Vaccine Formulations Against Hepatitis C Virus

Supervisors: Gowans EJ, Grubor-Bauk B, Wijesundara D

Virology Group

The University of Adelaide, PhD awarded 7 May 2018

Jae MURPHY MBBS

The mucosal barrier in chronic rhinosinusitis

Supervisors: Wormald PJ, Vreugde S, Psaltis A

ENT Surgery

The University of Adelaide, PhD awarded 5 November 2018

Dean's Commendation for Doctoral Thesis Excellence

Helen M PALETHORPE BMedPharmSci(Hons) BLabMed DipBiomedSci

Fibroblasts, Androgen Signalling and Oesophageal Adenocarcinoma

Supervisors: Drew P, Smith E

Surgical Science Research Group

The University of Adelaide, PhD awarded 26 March 2018

Dean's Commendation for Doctoral Thesis Excellence

Joseph SMITH PhD

Surgery and climate change: the scientific and public policy implications

Supervisors: Maddern G, Hewett P

Surgical Science Research Group

The University of Adelaide, PhD awarded 12 June 2018

Dean's Commendation for Doctoral Thesis Excellence

Masters of Philosophy (Surgery)

Hannah GOSTLOW MBBS

Simulation in surgical education: lessons learned from a multi-site randomised cohort study

Supervisors: Maddern G, Babidge W

Surgical Science Research Group

The University of Adelaide, Master of Philosophy (Surgery) awarded 12 July 2018

Honours

Ashley TWIGGER

Effect of dosage and length of treatment using combination of antimicrobial treatment (deferiprone and gallium-protoporphyrin) against common bacterial infections

Supervisors: Wormald PJ, Richter K, Vreugde S

ENT Surgery

The Hospital Research Foundation Honours Scholarship

The University of Adelaide, First Class Honours Awarded 2018

Rachel DAVIS APD (Accredited Practising Dietitian)

Diet and Inflammatory Bowel Disease

Supervisors: Day A, Bryant R, Miller M

Inflammatory Bowel Disease Research Group

Honours Candidate, Flinders University

RESEARCH STUDENTS 2018

CONTINUING RESEARCH HIGHER DEGREE & HONOURS STUDENTS



THE UNIVERSITY OF ADELAIDE DISCIPLINE OF MEDICINE, TQEH

ADELAIDE G-TRAC CENTRE

PhD students

Anupam Datta GUPTA FAFRM

Improving lower limb functioning in post-stroke spasticity and foot dystonia with botulinum toxin

Supervisors: [Visvanathan R](#), [Koblar S](#), Cameron I

Unyime JASPER MSc

Evaluating the knowledge, attitude and strategies for reducing sedentary behaviour and increasing physical activity among older patients, carers and health professionals in hospital- A qualitative study

Supervisors: [Visvanathan R](#), [Jadczyk A](#)

The University of Adelaide International Wildcard Scholarship;
CRE Frailty in Healthy Ageing Top-up Scholarship

Kareeann Sok Fun KHOW MBBS

Fractures and outcomes in older people

Supervisors: [Visvanathan R](#), [Yu S](#)

NHMRC (App1133707) Postgraduate Research Scholarship

Beatriz MARTINS BMed (University of San Paolo, Brazil)-specialisation in Geriatric and Internal Medicine

Physical activity and Frailty: Exploring cross-cultural and neighbourhood influences

Supervisors: [Visvanathan R](#), [Barrie H](#)

The University of Adelaide Beacon of Enlightenment/Nagoya University Joint Postgraduate Research Scholarship

James SMYTH MBBS MB, BCh, BAO, FACEM, FRCEM, FRCSI, FFSEM, DCH, BA(Mod)

Potential roles of assessments of frailty and activities of daily living for nursing home residents in relation to the transfer to the hospital emergency department

Supervisors: [Visvanathan R](#), [Arendts G](#), [Grantham H](#)

Mark THOMPSON BAppliedSc (Occupational Therapy) M Pub Health

The trajectory of frailty and associated factors and influence on mortality and quality of life in community dwelling older South Australians

Supervisors: [Visvanathan R](#), [Theou O](#)

Masters of Philosophy (Medicine) student

Sally Suriani AHIP M.Med MBBS

The Malaysian Pictorial Fit-Frail Scale (M-PFFS): Development and testing of feasibility, validity and reliability in Malaysia

Supervisors: [Visvanathan R](#), [Theou O](#)

Government of Malaysia Scholarship

CARDIOVASCULAR PATHOPHYSIOLOGY AND THERAPEUTICS GROUP

PhD students

Vincent GOH MBBS FRACP

Reverse genesis: does atrial fibrillation perpetuate dyshomeopathic origins?

Supervisors: [Horowitz JD](#), [Hii J](#)

Gao ONG MBChB

The natural history and treatment of Tako-Tsubo Cardiomyopathy

Supervisors: [Horowitz JD](#), [Chirkov Y](#)

Sven SURIKOW BSc(Hons)

The role of oxidative and nitrosative stress in the pathogenesis of Tako-Tsubo Cardiomyopathy

Supervisors: [Horowitz JD](#), [Nguyen TH](#), [Chirkov Y](#)

The University of Adelaide Research Training Program Stipend

CLINICAL PHARMACOLOGY RESEARCH GROUP

PhD student

Rong HU BSc MS

Pharmacogenomics research on tacrolimus and mycophenolate mofetil among patients receiving kidney transplantation

Supervisors: [Somogyi AA](#), [Sallustio BC](#), [Coller JK](#), [Daniel TB](#)

The University of Adelaide International Postgraduate Research Scholarship

L-R: **Makutiro Masavuli** (Virology Group), **Helen Palethorpe** (Surgical Science Research Group), and **Ho Yin (Aden) Lau** (ENT Surgery/Rheumatology Research Group) graduated in September.

RESEARCH STUDENTS 2018

CONTINUING RESEARCH HIGHER DEGREE & HONOURS STUDENTS

ENDOCRINOLOGY UNIT

PhD student

Sunita DESOUSA MBBS

The role of ARMC5 in non-adrenal tumours

Supervisors: Torpy D, [Gagliardi L](#), Scott H

Masters of Philosophy (Medicine) student

Usman MUSHTAQ MBBS FRACP

Pathophysiology of changes in calcium homeostasis and testosterone levels and its impact on regulation of bone mineral density following bariatric surgery

Supervisors: [Wittert G](#), [Jesudason D](#)

Freemason's Centre for Men's Health Scholarship

HEALTH PERFORMANCE AND POLICY RESEARCH UNIT

PhD student

Saranaya Hariharaputhiran MD

Outcomes of Hospitalisations for Heart Failure

Supervisors: [Ranasinghe I](#), [Adams R](#)

The University of Adelaide Divisional Scholarship

Respiratory Medicine Unit & Clinical Practice Unit

RESPIRATORY MEDICINE UNIT & CLINICAL PRACTICE UNIT

PhD student

Zoe KOPSFTIS BMedRadSc(NucMed) BHLthSc(Hons)

A multimodal evidence based clinical guideline for multi-disciplinary use in the management of patients with Chronic Obstructive Pulmonary Disease

Supervisors: [Smith B](#), [Phillips P](#), [Carson-Chahhoud K](#)

The University of Adelaide Research Training Program Stipend;

Department Postgraduate Research Scholarship

Masters of Philosophy (Medicine) students

Kathy LAWTON BAN

Management of Bronchiectasis: a tertiary healthcare perspective

Supervisors: [Smith B](#), [Veale A](#), [Carson-Chahhoud K](#)

Karen ROYALS RN

Outreach respiratory nursing in the management of Chronic Obstructive Pulmonary Disease (COPD)

Supervisors: [Smith B](#), [Veale A](#), [Carson-Chahhoud K](#)

RHEUMATOLOGY RESEARCH GROUP

PhD students

Rachel BLACK MBBS FRACP

The epidemiology of glucocorticoid prescribing and ophthalmological side effects in patients with rheumatoid arthritis

Supervisors: [Hill C](#), [Dixon WG](#), [Cleland L](#)

The University of Adelaide Research Training Program Stipend

Jem NINAN MBBS MD FRACP

Giant Cell Arteritis - understanding mechanisms of disease, improving the diagnostic certainty, and optimising management through Fast Track Clinics

Supervisors: [Hill C](#), [McNeil J](#), [Bartholomeusz D](#)

Huai Leng (Jessica) PISANIELLO MBBS FRACP

The Role of Mobile Health Application in Real-Time Capture of Self-Reported Symptoms and Longitudinal Activity, and its Feasibility in Patient-focused Remote Monitoring in Musculoskeletal Disorders

Supervisors: [Hill C](#), [Beltrame J](#), [Dixon W](#) (Manchester), [Whittle S](#)

Arthritis Australia Ken Muirden Travelling Scholarship

Joanna TIEU MBBS

Optimising therapy in ANCA-associated Vasculitis

Supervisors: [Cleland L](#), [Hill C](#), [Proudman S](#), [Peh CA](#), [Jayne D](#) (Cambridge)

NHMRC Postgraduate Research Scholarship

SOLID TUMOUR GROUP

PhD students

Reger MIKAEEL MSc. Molecular Pathology and Toxicology (University of Leicester, UK)

The Pathology of Young Onset Colorectal Cancer

Supervisors: [Price T](#), [Young J](#)

The University of Adelaide International Wildcard Scholarship

Maryam NAKHJAVANI Dip Sc Professional doctorate of Pharmacy

Novel inhibitors of tumour growth and angiogenesis in advanced breast cancer

Supervisors: [Hardingham J](#), [Townsend A](#)

The University of Adelaide International Wildcard Scholarship

Yoko TOMITA MBBS FRACP MSc

Pharmacological blocking of Aquaporin 1 to restrict tumour angiogenesis and metastasis in pre-clinical models of human colon cancer

Supervisors: [Hardingham J](#), [Price T](#), [Yool A](#)

The University of Adelaide Research Training Program Stipend

TRANSLATIONAL VASCULAR FUNCTION RESEARCH COLLABORATIVE

PhD students

Tracy AIR MBiostatistics

The Burden of Disease in Depression and Cardiovascular Disease

Supervisors: [Beltrame J](#), [Tavella R](#), [Schrader G](#)

David DI FIORE MBBS MD FRACP

Vasospastic Angina: Clinical considerations in coronary artery spasm

Supervisors: [Beltrame JF](#), [Zeitz C](#)

Clementine LABROSCIANO BSc BHSc(Hons)

Adverse patient outcomes following pacemaker and implanted converter defibrillator implantations in Australia

Supervisors: [Beltrame J](#), [Tavella R](#)

The University of Adelaide Faculty of Health and Medical Sciences

Divisional Scholarship

Abdul SHEIKH MBBS MD FRACP

Coronary and peripheral haemodynamic studies of patients with angina and normal coronary arteries

Supervisors: [Beltrame JF](#), [Zeitz C](#), [Rajendran S](#)



RESEARCH STUDENTS 2018

CONTINUING RESEARCH HIGHER DEGREE & HONOURS STUDENTS

STROKE RESEARCH PROGRAMME

PhD students

Maria GANCHEVA BSc (Biomed.Sci) (Hons)

Induction of Neural Stem Cells from a Human Neural Crest-derived Stem Cell Population

Supervisors: [Koblar S](#), Kremer K

Chelsea GRAHAM BSc (Animal Sc)(Hons)

Developing a Schwann cell line from Tasmanian devil (Sarcophilus harrisii) dental pulp stem cells

Supervisors: Pyecroft SB, Trott D, [Hamilton-Bruce MA](#), Kremer KL
The University of Adelaide Research Training Program Scholarship

Victor J KRAWCZYK BSocSc(Hum Serv) BA(Hons) GDipArtHist

Human-animal relations in organizations: Identifying discourses for compassionate engagements with animals

Supervisors: Higgins-Desbiolles F, Caluya G, [Hamilton-Bruce MA](#), Walton S

Anjali NAGPAL MBBS MD FRCA (UK)

Exploring determinants of execution in early phase clinical studies with cell therapies in stroke

Supervisors: [Koblar S](#), [Hamilton-Bruce A](#)

Masters of Philosophy (Medicine) student

Jenny SUTTON BN BComm BBus (Int) MN CPA

A clinical and economic evaluation of TIA care management models for preventing stroke

Supervisors: [Koblar S](#), [Hamilton-Bruce A](#), Karnon J

THE HEALTH OBSERVATORY

PhD students

Clare MCNALLY MPhil (Dent) GCHP Assoc DDH

Oral Health, General Health and Operative Risk in Hospitalised Older Patients

Supervisors: [Adams R](#), [Visvanathan R](#), Liberali S

Joint The Hospital Research Foundation/Discipline of Medicine Postgraduate Scholarship (until 23 Jan 2018)

Linh Thi Hai NGO DMed(Hanoi Vietnam)

Outcomes of catheter ablation for treatment of Atrial Fibrillation in Australia: a population-wide study

Supervisors: [Adams R](#), [Ganesan A](#), [Ranasinghe I](#)

The Hospital Research Foundation Postgraduate Research Scholarship 2018

THE UNIVERSITY OF ADELAIDE DISCIPLINE OF PSYCHIATRY, TQEH

PSYCHIATRY RESEARCH GROUP

PhD student

Andrew OLAGUNJU MBBS Psych

Predictors of functional outcome in individuals with Psychosis

Supervisors: Baune B, [Clark S](#)

The University of Adelaide International Scholarship

Honours student

Edward LUONG BHSc

Differential Candidate Gene Expression Analysis for Cognition and Schizophrenia

Supervisors: Toben C, [Clark SR](#), Ciobanu L

THE UNIVERSITY OF ADELAIDE DISCIPLINE OF SURGERY, TQEH

BREAST BIOLOGY AND CANCER UNIT

PhD students

Maddison ARCHER BSc(Biomedical science) BHSc(Hons)

Immune modulation of breast density and cancer risk

Supervisors: [Ingman W](#), [Evdokiou A](#), [Dasari P](#)

The University of Adelaide Research Training Program Stipend

Sarah BERNHARDT BSc(Biomedical) BHSc(Hons)

Hormonal modulation of prognostic and predictive biomarkers in premenopausal breast cancer

Supervisors: [Ingman W](#), [Price T](#), [Townsend A](#)

The University of Adelaide Research Training Program Stipend

Amita GHADGE Integrated BSc MSc

Biological determinants of breast density

Supervisors: [Ingman W](#), [Dasari P](#)

The University of Adelaide International Wildcard Scholarship

Joe WRIN BSc

The role of C1q and macrophages in breast carcinogenesis and cancer progression

Supervisors: [Ingman W](#), [Evdokiou A](#)

The University of Adelaide Research Training Program Stipend

BREAST CANCER RESEARCH UNIT

PhD students

Christopher DIFELICE BSc(Hons)

Fibrosis, cancer and the pre-metastatic niche: implications for peroxidases

Supervisors: [Evdokiou A](#), [De Nichilo M](#), [Zinonos I](#)

The University of Adelaide Research Training Program Stipend

Namfon (Bee) PANTARAT BSc(Biology) MSc(Biotech)

Hydrogel-based delivery of cancer fighting T cells for the localised treatment of completely resected or inoperable tumours

Supervisors: [Evdokiou A](#), [Zinonos I](#), [Hauben E](#)

The University of Adelaide Discipline of Surgery Scholarship

Alexandra SHOUBRIDGE BSc(Hons)

The role of peroxidase enzymes during bone repair and regeneration

Supervisors: [Evdokiou A](#), [De Nichilo M](#), Anderson P

The University of Adelaide Research Training Program Stipend

Master of Philosophy (Surgery) student

Panos PANAYIOTOU BSc(Hons equiv.)

Injectable Fibrin as a biocompatible polymer scaffold that propagates T cell-mediated cytotoxicity to Cancer

Supervisors: [Evdokiou A](#), [Zinonos I](#), [Panagopoulos B](#)

Adelaide Scholarship International Wildcard Scholarship

RESEARCH STUDENTS 2018

CONTINUING RESEARCH HIGHER DEGREE & HONOURS STUDENTS

ENT SURGERY

PhD students

Lisa CHERIAN MBBS

The effect of topical and oral corticosteroids on the sino nasal microbiome

Supervisors: [Wormald PJ](#), [Vreugde S](#)

The University of Adelaide International Scholarship

Sholeh FEIZI MSc

Green synthesis of silver nanoparticles and their biomedical applications

Supervisors: [Wormald PJ](#), [Vreugde S](#), [Psaltis AJ](#)

The Adelaide ENT Departmental Scholarship

Stephanie FONG MBBS DipChildHlth

Surfactant-based carriers incorporating corticosteroids for the treatment of Chronic Rhinosinusitis

Supervisor: [Wormald PJ](#), [Vreugde S](#)

Joint The Hospital Research Foundation/The University of Adelaide Postgraduate Research Scholarship

Rachel GOGGIN MBBS BMedSc(Hons)

The role of viruses in Chronic Rhinosinusitis

Supervisor: [Vreugde S](#), [Wormald PJ](#), [Psaltis A](#)

The University of Adelaide Research Training Program Stipend

Stephen KAO MBBS

Determine the effect of barrier dysfunction on mucosal inflammation

Supervisors: [Wormald PJ](#), [Psaltis A](#), [Vreugde S](#)

The University of Adelaide Research Training Program Stipend & the Bertha Sudholz Research Scholarship

Giri KRISHNAN MBBS MCLinSc

Evaluating the accuracy of lymphotropic iron tracers for sentinel lymph node mapping in an orthotopic VX2 rabbit head and neck cancer model

Supervisors: [Wormald PJ](#), Foreman A

The University of Adelaide Faculty of Health and Medical Sciences Divisional Scholarship/ Garnett Passe and Rodney Williams Research Scientist Scholarship (from March 2018)

Martha MENBERU MSc

Microbial interactions in chronic rhinosinusitis

Supervisors: [Vreugde S](#), [Wormald PJ](#), [Psaltis A](#)

The University of Adelaide International Scholarship

Mian Li OOI MBBS

The use of chitodex gel as slow-release drug delivery system to improve wound healing after sinus surgery in chronic rhinosinusitis

Supervisors: [Wormald PJ](#), [Psaltis A](#), [Vreugde S](#)

Beula Subashini PANCHATCHARAM MBBS MD(Microbiology)

Effect of toxins of Staphylococcus aureus on the nasal epithelial barrier in chronic sinusitis

Supervisors: [Wormald PJ](#), [Vreugde S](#)

The University of Adelaide International Scholarship

Sathish PARAMASIVAN MBBS BMedSc(Hons)

Microbe-microbe and microbe-host interactions in Chronic Rhinosinusitis

Supervisors: [Vreugde S](#), [Wormald PJ](#), [Psaltis A](#)

The University of Adelaide Research Training Program Stipend and The Garnett Passe and Rodney Williams Memorial Foundation Research Scientist Scholarship (supplementary scholarship)

Rajan Sundaresan VEDIAPPAN MBBS DLO MSurg(ENT) MA(Organisational Leadership)

Chitosandextran (Chitodex) gel with and without Deferiprone and Gallium Protoporphyrin: wound healing and postoperative outcomes in Chronic Rhinosinusitis

Supervisors: [Wormald PJ](#), [Psaltis A](#), [Vreugde S](#)

The Hospital Research Foundation Postgraduate Scholarship 2018

Master of Philosophy (Surgery) students

Annika MASCARENHAS MBBS

An endoscopic bovine model of small vessel intracranial arterial haemorrhage control

Supervisors: [Wormald PJ](#), [Psaltis A](#)

The University of Adelaide Faculty of Health and Medical Sciences Postgraduate Research Scholarship

Sakiko OUE MBBS

Neo-osteogenesis in chronic rhinosinusitis

Supervisors: [Wormald PJ](#), [Psaltis A](#), [Vreugde S](#)

Michael GOUZOS BPhysiotherapy MD

Effect of antibiotic reagents on Nitrogen reactive species and postoperative adhesions

Supervisors: [Wormald PJ](#), [Psaltis A](#), [Vreugde S](#)

The University of Adelaide Research Training Program Stipend

GROWTH AND REPAIR OF THE SMALL INTESTINE

PhD student

Zenab DUDHWALA BHSc(Hons)

Wnt signalling and postnatal growth of small intestine

Supervisors: [Cummins A](#), Howarth G, Gibson R

The University of Adelaide Research Training Program Stipend

INFLAMMATORY BOWEL DISEASE RESEARCH GROUP

PhD students

Sam COSTELLO MBBS FRACP

The role of faecal transplantation in the treatment of ulcerative colitis

Supervisors: [Roberts-Thomson I](#), Hughes P, Conlon M, Andrews J

Alice DAY APD (Accredited Practising Dietitian)

Diet and Inflammatory Bowel Disease

Supervisors: [Andrews J](#), [Bryant R](#)

The University of Adelaide Research Training Program Stipend

Karmen TELFER BPharm BMBS

The development, maintenance and changes of the gastrointestinal microbiome, and their relationship to Ulcerative Colitis

Supervisors: Weinstein P, [Costello S](#), [Bryant R](#)

RESEARCH STUDENTS 2018

CONTINUING RESEARCH HIGHER DEGREE & HONOURS STUDENTS

OESOPHAGEAL PHYSIOLOGY GROUP

Master of Philosophy (Surgery) students

Tom ELDREDGE MBBS

Diagnosing bile reflux

Supervisors: [Kiroff G](#), [Shenfine J](#), [Myers JC](#)

Siang Wei GANG MBBS

Pressure and flow dynamics of the gastro-oesophageal junction after laparoscopic fundoplication

Supervisors: [Kiroff G](#), [Myers JC](#)

Bridget HEIJKOOP MBBS

Extended Thromboprophylaxis post radical prostatectomy: review of efficacy, safety and economic impact

Supervisors: [Kiroff G](#), [Supernat D](#)

SURGICAL SCIENCE RESEARCH GROUP

PhD students

Bimala DHAKAL BSc MSc

Porous silicon nanoparticles as drug delivery system for anti-metastatic therapy

Supervisors: [Maddern G](#), [Hauben E](#), [Voelcker NH](#)

Schlumberger Foundation Faculty for the Future Fellowship

Gohar SHAGHAYEGH BSc(Iran) MDSc(Cell Biotechnology)(Malaysia)

Development of targeted nanoparticles as preventative therapy for liver metastasis

Supervisors: [Maddern G](#), [Hauben E](#), [Voelker N](#)

The Hospital Research Foundation Postgraduate Research Scholarship 2018

Jannatul Ferdoush TULI BSc MSc

Characterisation of human cancers by molecular imaging mass spectrometry

Supervisors: [Drew P](#), [Gustafsson J](#)

The University of Adelaide Research Training Program Stipend

Master of Philosophy (Surgery) students

Sean BRIEN MBBS AFRACMA

Surgical perioperative mortality for urological oncological procedures performed in Australia 2001-2015

Supervisor: [Maddern G](#)

Justin CHAN MBBS, FRACS

Morbidity and Mortality in Australian cardiothoracic surgery

Supervisors: [Maddern G](#), [Worthington M](#)

Nelson GRANCHI MBBS

Surgical coaching in the outpatient environment - a video-based intervention

Supervisor: [Maddern G](#)

The University of Adelaide Research Training Program Stipend

Jaewook OH MBBS

Effect and biocompatibility of human recombinant Lubricin on the formation of adhesions in rats

Supervisors: [Maddern G](#), [Tiong L](#)

Richard SMITH MBBS FRACS

Optimising post-operative radiotherapy for retroperitoneal sarcoma

Supervisors: [Maddern G](#), [Neuhaus S](#)

Claire STEVENS MBBS FRACS

Trends and variability in Hepatobiliary Surgery in Australia

Supervisors: [Maddern G](#), [Trochsler M](#)

VASCULAR SURGERY RESEARCH GROUP

Master of Philosophy (Surgery) student

Guilherme PENA MD Basic Surgical training degree (Federal University of Minas Gerais, Brazil)

Predicting outcomes in patients with diabetic foot ulcers

Supervisors: [Fitridge R](#), [Cowled P](#), [Dawson J](#)

Master of Philosophy (Surgery), The University of Adelaide Discipline of Surgery

The University of Adelaide Research Training Program Stipend 2018

VIROLOGY GROUP

PhD student

Zelalem MEKONNEN BSc(Hons)

A novel large animal challenge for HCV

Supervisors: [Gowans EJ](#), [Grubor-Bauk B](#), [Wijesundara D](#)

The University of Adelaide International Scholarship

University of South Australia

THERAPEUTICS RESEARCH CENTRE

PhD students

Ali Khaled Abdel Rahman ALSHABRAWY BPharmSc (Helwan University, Egypt) MPharmChem (Helwan University, Egypt)

Analysis, drug delivery and pharmacokinetics of endocrine and other drugs

Supervisors: [Roberts MS](#), [Anderson P](#), [Reuter Lange S](#), [Williams D](#)

University of South Australia Postgraduate Research Scholarship

Lemlem GEBREMICHAEL MSc (Pharmacology)

Pharmacokinetics of drugs and drug response in at risk patients

Supervisors: [Roberts MS](#), [Mackenzie L](#)

University of South Australia Postgraduate Research Scholarship

Muhammad Suleman KHAN MMedBioI(Sweden) MPhil (Clinical Epidemiology) Australia

Optimising therapies in vulnerable patients- a pharmacokinetic approach

Supervisors: [Roberts M](#), [Mackenzie L](#)

University of Queensland Postgraduate Research Scholarship

Sean MANGION BBiomed Research (Hons) First class

Developing better treatment strategies for non-healing wounds

Supervisors: [Roberts MS](#), [Holmes A](#), [Kempson I](#), [Mackenzie L](#), [Weightman W](#), [Grice J](#)

University of South Australia Research Training Program Stipend

Shuping QIANG BSc

Quantification, pharmacokinetics and efficacy of drug poisoning treatment

Supervisors: [Roberts M](#), [Mackenzie L](#)

University of South Australia President's Scholarship

GRANTS 2018

NHMRC grants

Peer reviewed grants
(excluding NHMRC and THRF)

The Hospital Research Foundation

Non-peer reviewed externally
funded grants

Grants commencing in 2019

\$5,701,022
NHMRC

\$4,891,872
PEER REVIEWED

\$3,597,469
THRF

\$83,469
NON-PEER



NHMRC GRANTS 2018

\$5,701,022

BHI BASED RESEARCHERS ARE IN **BOLD**

GRANT RECIPIENTS	GRANTING BODY FUNDING PERIOD	PROJECT TITLE	REVENUE 2018 TYPE OF GRANT	TOTAL GRANT FUNDING
Visvanathan R , Hill K, Ranasinghe D, Lange K, Wilson A	NHMRC 1082197 2016-2019	Effectiveness of an Ambient Intelligence Geriatric Management system to prevent falls in older people in hospitals: a clinical trial	Time extension only Project	1,646,080
Khow K	NHMRC 1133707 2017-2018	Fragility fractures and outcomes in older people	43,366 Postgraduate Research Scholarship	86,733
Tieu J	NHMRC 2017-2019	Optimising therapy in ANCA-associated Vasculitis	39,729 Postgraduate Research Scholarship	119,187
Visvanathan R , Karnon J, Kitson A, Beilby J, Cameron I, Chehade M, Bell S, Feist H	NHMRC 1102208 2016-2020	Frailty Trans-Disciplinary Research To Achieve Healthy Ageing	449,861 Centres of Research Excellence - Health Services	2,301,169
Ritchie R, Horowitz J , Kemp-Harper B, Du XJ, Chirkov Y	NHMRC 1120895 2017-2019	Therapeutic Approaches to Circumvent NO• Resistance in the Type 2 Diabetic Heart and Vasculature	189,446 Project	564,000
Lipman J, Roberts J, Myburgh J, Peake SL , Dulhunty J, Paterson D, McGuinness S, Rhodes A, De Waele J, Finfer S	NHMRC 1121481 2017-2021	BLING III: A phase III randomised controlled trial of continuous beta-lactam infusion compared with intermittent beta-lactam dosing in critically ill patients	653,989 Project	3,269,943
Roberts JA, Lipman J, Peake S , Turnidge J, Slavin M, Hopkins P, Bulitta J, Paul S, De Waele J, Joynt G	NHMRC 1099452 2016-2020	Centre for REdefining antibiotic use to reDUce resistanCE and prolong the lives of antibiotics (REDUCE)	431,659 Centres of Research Excellence - Clinical	2,158,296
Chapman M, Peake SL , Dean A, O'Connor	NHMRC 1078026 2015-2019	The Augmented versus Routine approach to Giving Energy Trial (TARGET)	739,371 Project	3,696,854
Hodge S, Zalewski P , Roscioli E	NHMRC 1099040 2016-2018	Exploiting increased autophagy in bronchial epithelial cells: a new therapeutic approach for chronic obstructive pulmonary disease (COPD)	248,463 Project	745,390
Adams R , McEvoy D, Antic N, Appleton S , Wittert G, Catcheside P, Vakulin A, Vincent A, Taylor A	NHMRC 1122342 2017-2019	Health impacts of sleep apnea in Australian men- a longitudinal population study	105,944 Project	317,832
Jones G, Wluka A, Hill CL , March L, Keen H, Laslett L	NHMRC 1102732 2016-2018	A randomised trial of krill oil for osteoarthritis of the knee	64,579 Project	767,946
Aitken D, Jones G, Cicuttini F, Winzenberg T, Keen H Al: Hill C	NHMRC 1102733 2018-2020	DICKENS - A randomised controlled trial of DiaCerein to treat KneE osteoarthritis with effusioN-Synovitis. This is a multicenter study with TQEH as one of 4 recruiting centres	436,501 Project	1,309,503
Holliday E, Attia J, Thijs V, Koblar S , Sturm J, Maguire J, Lincz L. Al's: Jannes J et al	NHMRC 1085550 2015-2018	Helping stroke physicians choose who to thrombolys – the “Targeting Optimal Thrombolysis Outcomes” (TOTO) study	257,917 Project	1,073,140
Stevenson A, Solomon M, Hewett P , Lumley J, Fleshman J, Clouston A, Hague W	NHMRC 1078113 2015-2019	A La CaRT: Australasian Laparoscopic Cancer of the Rectum Trial. A phase III prospective randomised trial comparing laparoscopic-assisted resection versus open resection for rectal cancer	121,722 Project	573,259

NHMRC GRANTS 2018

\$5,701,022

GRANT RECIPIENTS	GRANTING BODY FUNDING PERIOD	PROJECT TITLE	REVENUE 2018 TYPE OF GRANT	TOTAL GRANT FUNDING
Buckley N, Isbister G, Dawson A, Roberts M	NHMRC 1055176 2014-2018	An integrated research program in human toxicology to ensure rapid translation of results into practice and regulation	411,445 Program	6,846,800
Roberts M	NHMRC 1107356 2016-2020	Research Fellowship	170,396 Research Fellowship	851,980
Beltrame JF, Tavella R, Zeitz C , Spertus J, Arstall M, Worthley M, Chew D	NHMRC 1062331 2018-2021	Value-Based Healthcare in Elective Coronary Stenting	267,122 Partnership	1,220,111
Sallustio B, Evdokiou A, Horowitz J	NHMRC 1145776 2018-2020	Prevention of Heart Damage during anthracycline cancer	109,071 Project	327,214
McEvoy D, Stocks N, Zwar N, Grunstein R, Chai-Coetzer CL, Lack L, Adams R , Redman S, Vakulin A, Wesselingh S	NHMRC 1134954 2018-2022	National Centre for Sleep Health Services Research - Positioning Primary Care at the Centre of Sleep Health Management	500,000 Centres of Research Excellence in Health Services Research	2,500,000
Zalewski P , Hodge S, Beltrame J , Murgia C, Tavella R	NHMRC 1138917 2018-2020	Role for zinc and ZIP2 in the action of nitric oxide and in vascular protection against cigarette smoke and cardiovascular disease	219,055 Project	685,941
Hodge S, Zalewski P , Roscioli E	NHMRC 1099040 2016-2018	Exploiting increased autophagy in bronchial epithelial cells: a new therapeutic approach for chronic obstructive pulmonary disease (COPD)	241,387 Project	724,161

PEER REVIEWED GRANTS (EXCLUDING NHMRC AND THRF) 2018

\$4,891,872

BHI BASED RESEARCHERS ARE IN **BOLD**

GRANT RECIPIENTS	GRANTING BODY FUNDING PERIOD	PROJECT TITLE	REVENUE 2018 (AUD) TYPE OF GRANT	TOTAL GRANT FUNDING
Gowans E, Grubor-Bauk B, Eyre N, Wijesundara D	ACH2 2018	Examine the protection afforded in vaccinated mice against HCV infection	88,000 Project	88,000
Ludbrook G, Walsh R, Story D, Maddern G	Australian and New Zealand College of Anaesthetists (ANZCA) 2018	Extended post-anaesthesia care – a feasibility study	69,994 Elaine Lillian Kluver ANZCA Research Award	69,994
Rao Kadam V, Van Wijk R, Moran J, Williams P, Thiruvengatarajan V	ANZCA Trials Group 2017-2019	Comparison of Trans-muscular Quadratus Lumborum (TQL) block catheter technique with surgical pre-peritoneal catheter for postoperative analgesia in abdominal surgery	14,000 Novice	14,000
Keen H, Whittle S , Delir Haghighi P, Sharma C	Arthritis Australia 2018	Community perceptions of rheumatoid arthritis pharmacotherapy: An analysis of social media platforms	35,000 Project	35,000
Soebarto V, Pisaniello D, Zuo J, Williamson T, Hansen A, Visvanathan R	Australian Research Council 2018-2020	Improving thermal conditions in housing to support ageing in place	137,667 Discovery grant	413,000
Yool A, Heng S, Hardingham J	Australian Research Council DP160104641 2016-2018	Properties enabling rapid cell migration by Aquaporin-1 channel expression	116,000 Discovery	350,000
Moretti K , O'Callaghan M	Beat Cancer/ Cancer Council SA 2018	Prostate Cancer in South Australia – Improving Quality Treatment and Accelerating Research	260,000 Infrastructure grant	260,000
Young J, Price T , Tomlinson I, Rosty C, Ruszkiewicz A, Schreiber A, Platell C, Hardingham J, Drew P, Smith E	Cancer Council SA 2018	Metabolic Syndrome Components and Advanced Colorectal Neoplasia in Young Adults	75,000 Project	75,000
Wormald PJ, Vreugde S	Cure4CF 2018	A new treatment for cystic fibrosis chronic relapsing upper airway infections	27,000 Project	27,000
Wormald PJ, Vreugde S	Cystic Fibrosis-South Australia 2018-2020	A new treatment for cystic fibrosis chronic relapsing upper airway infections	30,000 Project	60,000
Keijzers G, McDonald S, Williams J, Fraser J, Peake S , Delaney A, Taylor D, Jones P, Williams P	Emergency Medicine Foundation 2018-2019	Fluid Resuscitation in Emergency patients with Sepsis and Hypotension	48,009 Queensland Research Program	96,018
Maddern G, Trochiser M , Tivey D, Vreugdenburg T	Federal Office of Public Health, Health and Accident Insurance, Benefits, Department of Health Technology Assessment, Switzerland 2018-2019	Health Technology Assessment Framework Agreement	900,000 Project	2,800,000
Ma L, Liang Q, Hauben E, Fenix K	Flinders Innovation Partnership Seed Grants Scheme 2018-2019	Study of bioactivity of Hengshan Astragalus Shiitake as biological response modifiers in cancer therapy	125,000 Seed Grant	125,000

PEER REVIEWED GRANTS (EXCLUDING NHMRC AND THRF) 2018

\$4,891,872

GRANT RECIPIENTS	GRANTING BODY FUNDING PERIOD	PROJECT TITLE	REVENUE 2018 (AUD) TYPE OF GRANT	TOTAL GRANT FUNDING
Foreman A, Evdokiou A	Garnett Passe and Rodney Williams Foundation 2016-2018	Tumour-associated microbiota and its role in oral cavity cancer carcinogenesis	125,000 Conjoint	375,000
Psaltis A, Vreugde S	Garnett Passe and Rodney Williams Foundation 2016-2018	The effect of corticosteroids on the microbiome	50,000 Conjoint	375,000
Krishnan S	Garnett Passe and Rodney Williams Memorial Foundation 2018-2019	Magnetic Nanotechnology For Diagnostics and Guided Therapeutics in Oral Cancer	35,000 Academic Surgeon Scientist Research Scholarship	70,000
Paramasivam S	Garnett Passe and Rodney Williams Memorial Foundation 2018-2019	Host-Microbe interactions in Chronic Rhinosinusitis	35,000 Academic Surgeon Scientist Research Scholarship	70,000
Murphy J	Garnett Passe and Rodney Williams Memorial Foundation 2016-2018	The Mucosal Barrier in CRS	41,307 Academic Surgeon Scientist Fellowship	123,922
Mackay M, Adams R , Bean N	Government, SA 2015-2018	The Promulgation of Operational Research, Systems Thinking and Design Thinking within the Australian Health Care Sector	80,000 Premier's International Research Fund	400,000
Wesselingh S, Visvanathan R , Whitehead C, Russell P, Daniel M, Roder D, Stanley A, Griffith L, Karnon J, Miller C, Phillips P, Denson L, Ward L, Gill T, Ratcliffe J, Walters J, Kerrins E	Government, SA 2017-2020	Measuring and Intervening for Healthy Ageing In South Australia - R Visvanathan component: Frailty In Residential Sector Over Time (FIRST) Study	200,000 Premier's Research and Industry Fund Research Consortia Program	4,000,000
Clark SR	Health Services Charitable Gifts Board (HSCG) refs: 101-25-12- 06-18 and 141-11-59-06-18 2018	Transcranial Magnetic Stimulation and EEG equipment	93,249 Project	93,249
Koblar S, Jannes J, Hamilton-Bruce MA, Kleinig T, Milton A	Health Services Charitable Gifts Board (HSCGB) 2017-2018	"FAST-IT" – Find A Simple Test In Transient Ischaemic Attack (TIA)-Stroke prevention and recovery studies	12,500 Waltham Grant	12,500
Ranasinghe I	Heart Foundation 101186 2017-2020	Observing Recurrent Incidence of Adverse Outcomes following Hospitalisations (ORION)	130,000 Future Leader Fellowship	520,000
Ranasinghe I , Kaambwa B, Adams R	Heart Foundation 101830 2018	Healthcare Costs and Resource Use associated with 30-day Hospital Readmissions among Heart Failure Patients	75,000 Vanguard	75,000
Frennaux M, Horowitz JD	Medical Research Council UK 2014-2019	Therapeutic aspects of nitrite supplementation	450,000 Program	AUD \$3,500,000

PEER REVIEWED GRANTS (EXCLUDING NHMRC AND THRF) 2018

\$4,891,872

GRANT RECIPIENTS	GRANTING BODY FUNDING PERIOD	PROJECT TITLE	REVENUE 2018 (AUD) TYPE OF GRANT	TOTAL GRANT FUNDING
Hillier S, Kleinig T, Koblar S, Jannes J, Khadka J, Dixon K, Martin B, Hamilton-Bruce A, Milton A	Medical Research Future Fund via South Australian Academic Health Science and Translation Centre (The SA Centre) 2018-2019	Acting fast to increase time-critical stroke treatments to all South Australians	98,000 Rapid Applied Research Translation for Health Impact Grants	196,000
Gowans E, Grubor-Bauk B, Wijesundara D	NFMRI 2015-2019	Develop a vaccine for Zika virus	55,000 Portfolio 1 grant	293,000
Johnson G, Abramson M, Dooley M, Bonevski B, Smith BJ, Webb A	Pfizer 2018-2019	Varenicline And Nicotine replacement therapy for Smokers admitted to Hospitals (VANISH)	138,900 Global Research Awards for Nicotine Dependence (GRAND)	\$USD 200,000
Clark SR, Toben C, Baune BT	RAH Research Committee MyIP Ref: 9754 2017-2019	Patterns of gene expression in chronic psychosis associated with cognitive and general function	24,944 Clinical Project	49,888
Eldredge TA	Royal Australasian College of Surgeons (RACS) 2018	Bile Reflux Post-Bariatric Surgery - A Cohort Study	66,000 RP Jepson Scholarship	66,000
Rogerson T, Schubert KO, Toben C, Clark S, Baune BT	SA RANZCP 2018	The association between Interleukin-1 and psychotic symptoms in patients treated with clozapine and aripiprazole	2,500 Student grant	2,500
Maddern G, Price T, Young J, Hewett P, Hardingham J, Worthley D, White D, Mulligan D	SAHMRI/Beat Cancer/The Hospital Research Foundation 2014-2019 fys	Individualised Risk Assessment and Therapeutic Intervention for Colorectal Cancer in the South Australian Population	150,000 Project	750,000
Dhakal B	Schlumberger Foundation 2018-2020	The immune cell compartment in colorectal liver metastasis	16,667 Faculty for the Future Fellowship (International PhD Scholarship)	US\$150,000
Ahip SS, Visvanathan R, Shariff S, Theou O	The Ministry of Health Malaysia 2017-2019	The Malaysian Pictorial Fit-Frail Scale (M-PFFS): Development and Testing of Feasibility, Validity and Reliability in Malaysia.	83,500 National Institutes of Health Research Grant (MTG)	MYR \$282,400
Beltrame JF	The University of Adelaide 2017-2018	The anti-anginal benefits of Zibotentan in the Coronary Slow Flow Phenomenon (CSFP)	7,000 Commercial Accelerator Scheme (CAS) Project	87,000
Evdokiou A	The University of Adelaide 2018-2021	New Immunotherapeutic approaches targeting incompletely resected or inoperable tumours	25,000 FHMS leverage support for THRF project	75,000
Evdokiou A	The University of Adelaide 2018	Localised treatment of solid tumours with cytotoxic gd T cells	50,000 Project	50,000
Evdokiou A, Panagopoulos B	Tour de Cure 2018	Localised treatment of solid tumours with cytotoxic gd T cells	125,000 Project	125,000

PEER REVIEWED GRANTS (EXCLUDING NHMRC AND THRF) 2018

\$4,891,872

GRANT RECIPIENTS	GRANTING BODY FUNDING PERIOD	PROJECT TITLE	REVENUE 2018 (AUD) TYPE OF GRANT	TOTAL GRANT FUNDING
Kopecki Z, Grubor-Bauk B, Wijesundara D, Fenix F, Cowin A	University of South Australia 2018	Identify a diagnostic marker for psoriasis	18,193 New Adventures Fund	18,193
Richter K	The University of Adelaide 2018	Ironing out superbugs- validation and translation of a novel treatment that kills antibiotic-resistant bacteria by targeting iron metabolism	120,000 Early Career Research Fellowship	120,000
Wormald PJ, Vreugde S	The University of Adelaide/The Hospital Research Foundation 2018	A new medicated surgical hydrogel to improve wound healing after endoscopic sinus surgery	70,000 Commercial Accelerator Grant	120,000
Roberts M, Liu X, Grice J, Mohammad Y, Medley G, Cheruvu H, Alinaghi A, van der Hoek J, Paolak S, Nikunijkumar P, Sumit A, Abdula T, Wragg K, Clarke J, Frash H, Assimov Y, Cronin M, Maibach H, Chen T, Pope K	US FDA 1U01FD006522 University of Queensland Sept 2018 - Sept 2020	Formulation Drug Product Quality Attributes in Dermal Physiologically-Based Pharmacokinetic Models for Topical Dermatological Drug Products and Transdermal Delivery Systems	31,218 FDA Project	500,000 USD
Roberts M	US-FDA 1U01FD005226-01 2014-2019	Characterisation of critical quality attributes for semisolid topical drug products	316,000 FDA Project	1,499,500 USD
Roberts M	US-FDA 1U01FD005232-03 2014-2018	Physiologically based biopharmaceutics and pharmacokinetics of drug products for dermal absorption in humans	125,500 FDA Project	600,000 USD
Roberts M, Mohammad Y, Grice J, Namjoshi S, Laita Silva V, Benson H, Chen T, Maibach H, Roberts D, Lian G, Wu C-Y, Alinaghi A, Ladermann J, Cronin M, Assimov Y, Frash H, van der Hoek J, Xu Z, Patzelt A	US-FDA 1U01FD006496 University of South Australia Sept 2018 - Sept 2023	Bioequivalence of topical products: elucidating the thermodynamic and functional characteristics of compositionally different topical formulations	115,725 FDA Project	1,250,000 USD

THE HOSPITAL RESEARCH FOUNDATION 2018

\$3,597,469

BHI BASED RESEARCHERS ARE IN **BOLD**

GRANT RECIPIENTS	FUNDING PERIOD	PROJECT TITLE	REVENUE 2018 TYPE OF GRANT	TOTAL GRANT FUNDING
Gupta AD	2018-2020	Efficacy of Botulinum toxin A on Walking and Quality of Life in Post-Stroke Lower Limb Spasticity- a randomized double blind placebo controlled Study	35,000 Project	105,000
Chong CR	2018-2020	A new strategy to prevent heart failure in diabetes	60,000 Early Career Researcher	240,000
Taylor D	2017-2020	Inequalities in neighborhood Accessibility: Implications for Frailty and Healthy Ageing	140,000 Mid Career Fellowship	420,000
Sallustio BC, Evdokiou A, Horowitz JD	2018	Vivid Iq Premium, Rodent Echocardiography System	77,600 Joint Equipment funding with The University of Adelaide	77,600
Richter K	2018	Ironing out superbugs- validation and translation of a novel treatment that kills antibiotic-resistant bacteria by targeting iron metabolism	25,000 The University of Adelaide Early Career Researcher leverage funding	25,000
Thomas N	2018-2021	A Trojan Horse strategy for antimicrobial biologicals	80,000 Mid-Career Fellowship	540,000
Vediappan R	2018-2020	Chitosan dextran (Chitogel) with and without Deferiprone and Gallium Protoporphryn: wound healing and postoperative outcomes in Chronic Rhinosinusitis	16,000 PhD Scholarship	112,000
Visvanathan R	2016-2020	Frailty to achieve healthy ageing	125,000 Challenge funding	625,000
Richter K	2018-2020	Improving effectiveness of infection control after surgery	120,000 Early Career Researcher	240,000
Wormald PJ, Maddern G, Vreugde S	2018-2020	A novel medicated resorbable adhesion barrier device for use in abdominal surgery	75,000 Development	150,000
Wormald PJ, Vreugde S, Prestige C	2017-2018	A novel formulation to prevent epidural adhesions post-laminectomy	100,000 Development	200,000
Wormald PJ, Vreugde S, Saleh H	Jul 2018-Jun 2020	A new treatment for cystic fibrosis chronic relapsing upper airway infections	62,500 Translational	250,000
Costello S, Bryant R	2018-2019	BiomeBank establishment	50,000 Establishment	100,000
Ingman W	2016-2019	THRF Breast Cancer Research Fellowship	200,000 Associate Professor in Breast Cancer Research Fellowship	600,000
Ingman W, Evdokiou A, Wrin J	2017-2018	Breaking immune tolerance in triple negative breast cancer	62,500 Project	125,000
Price T, Young J	2018	SA Young Onset colorectal polyps and cancer study	30,000 Project leverage funding	30,000

THE HOSPITAL RESEARCH FOUNDATION 2018

\$3,597,469

GRANT RECIPIENTS	FUNDING PERIOD	PROJECT TITLE	REVENUE 2018 TYPE OF GRANT	TOTAL GRANT FUNDING
Townsend A, Hardingham J, Tomita Y, Yool A, Price T, Evdokiou A	2017-2020	Preclinical investigation of the efficacy of novel aquaporin 1 inhibitors in preventing growth and metastasis of breast cancer	85,000 ABCR Elcombe Preclinical Project	255,000
Appleton S, Adams R, Beltrame J	2018-2019	Broken Sleep – Broken Heart?: Longitudinal follow-up of cardiovascular and cognitive outcomes in middle aged and older men in North-West Adelaide	73,500 Project	147,000
Beltrame J, Zeitz C, Lindahl B	2017-2018	Potential mechanisms and treatment of post-infarct Angina in patients with Myocardial Infarction in Non Obstructive Coronary Arteries (MINOCA)	230,000 Translational	750,000
Mackay M, Adams R, Bean N, Varley J	2018-2019	Identification of causes of access block for short stay and long-term patients at TQEH, and use of simulation to formulate wait-resurrection strategies	36,000 Project	72,000
Ngo THL	2018-2020	Outcomes of catheter ablation for treatment of atrial Fibrillation in Australia: a population-wide study	10,667 PhD Scholarship	112,000
Ranasinghe I, Gallagher M, Scott I	2018-2019	Safety, effectiveness of care and resource use among Australian hospitals (SAFER HOSPITALS)	125,000 Translational	250,000
Stallman H	2018-2021	Improving sleep and coping in inpatients to improve clinical outcomes and reduce hospital readmissions	80,000 Mid-Career Fellowship	480,000
Koblar S, Jannes J, Hamilton-Bruce MA, Kleinig T, Milton A	2018-2019	Stroke prevention and recovery	45,000 Cure for Stroke Australia grant	90,000
Hill CL, Rischmeuller M, March L	2017-2020	The Australian Arthritis and Autoimmune Biobank Collaborative (A3BC)	77,700 Project	233,118
Hill CL	2017-2018	Randomised Clinical Trial of Colchicine in inflammatory hand arthritis	20,000 Project	40,000
Whittle S	2018-2021	Australia & New Zealand Musculoskeletal Trials Network (ANZMUSC)	25,000 Practitioner Fellowship - NHMRC CRE Fellowship Leverage funding	240,000
Evdokiou A	2016-2019	Michell McGrath Breast Cancer Research Fellowship	250,000 Michell-McGrath Breast Cancer Fellowship	750,000
Evdokiou A, Zannettino A, Blencowe A	2017-2018	Localized treatment of solid tumours with cytotoxic gd T cells	62,500 Project	125,000
Evdokiou A, Zinonos I	2018-2021	New Immunotherapeutic approaches targeting incompletely resected or inoperable tumours	75,000 Project	225,000
Fenix K	2018-2020	Using Tissue-Resident T cells to develop new prognostics and treatments against bowel cancer	60,000 Early Career Researcher	240,000

THE HOSPITAL RESEARCH FOUNDATION 2018

\$3,597,469

GRANT RECIPIENTS	FUNDING PERIOD	PROJECT TITLE	REVENUE 2018 TYPE OF GRANT	TOTAL GRANT FUNDING
Gowans E, Wijesundara D, Maddern G	2017-2018	The protective efficacy of cytolytic DNA vaccine for HCV in marmosets: a step forward towards human clinical trials	100,000 Development	200,000
Hauben E , Voelcker N, Maddern G	2017-2018	Development of targeted nanoparticles as preventative therapy for liver metastasis	62,500 Project	125,000
Kopecki Z, Grubor-Bauk B, Wijesundara D, Fenix F, Cowin A	2018	Identify a diagnostic marker for psoriasis	10,000 Leverage funding for UniSA New Adventures Fund grant	10,000
Maddern G	2018	A comprehensive video-based coaching program for continuing surgical improvement – design, efficacy assessment and clinical implementation	84,000 Project	84,000
Maddern G, Price T, Young J, Hewett P, Hardingham J, Worthley D, White D, Mulligan D	2014-2019	Individualised risk assessment and therapeutic intervention for colorectal cancer in the South Australian population	150,000 Joint SAHMRI Beat Cancer and THRF Project	750,000
Panagopoulos V	2017-2019	Targeted inhibition of inflammatory peroxidases, a new therapeutic strategy against breast cancer and metastatic disease	120,000 Early Career Researcher	240,000
Shaghayegh G	2018-2021	Development of targeted nanoparticles as preventative therapy for liver metastasis	6,667 PhD Scholarship	112,000
Shrestha A	2017-2019	The development of novel cytolytic DNA vaccine which elicits cellular immunity to conserved viral proteins	120,000 Early Career Researcher	240,000
Wijesundara D	2015-2018	Exploiting cytolytic adjuvants and novel recombinant viral vaccines as a way forward for HIV-1 and HCV vaccine design	120,000 Early Career Researcher	480,000
Various	2018	THRF Honours Scholarships	8,000 BHI Strategic Research Directions	8,000
Various	2018	THRF Postgraduate Research Scholarships	20,523 BHI Strategic Research Directions	100,000
Basil Hetzel Institute	2018	Infrastructure support	250,000 BHI Strategic Research Directions	250,000
Basil Hetzel Institute	2018	Career and research skills training support for research staff and Postgraduate students (attendance at workshops, conference dinners, posters, conference travel awards, TQEH Research Expo)	31,812 BHI Strategic Research Directions	31,812

NON-PEER REVIEWED EXTERNALLY FUNDED GRANTS 2018

\$83,469

BHI BASED RESEARCHERS ARE IN **BOLD**

CHIEF INVESTIGATOR	DEPARTMENT/ORGANISATION NAME	SOURCE TYPE (EG FEDERAL GOVERNMENT, STATE GOVERNMENTS, PHARMA, NON- GOVERNMENT)	REVENUE 2018
Gupta AD	Neurology / Aged and Extended Care Services, TQEH	Allergan Australia (in kind - Botulinum toxin)	26,667
Clark SR, Schubert KO, Watson D, Baune BT	The University of Adelaide Discipline of Psychiatry	Lundbeck Institute Trajectories of response to Aripiprazole Maintena (TRAMS)	46,667
Graham C	Neurology Stroke Research Programme	Help save the Tasmanian Devil (Crowd funding)	10,135

Dr Ashish Shrestha
THRF Early Career Fellow, Virology Group



GRANTS COMMENCING IN 2019

BHI BASED RESEARCHERS ARE IN **BOLD**

GRANT RECIPIENTS	GRANTING BODY FUNDING PERIOD	PROJECT TITLE	REVENUE 2019 TYPE OF GRANT	TOTAL GRANT FUNDING
Davis C, Hill C, Murphy K, Ruediger C	Arthritis Australia 2019	Comparison of dietary oils in osteoarthritis patients: a feasibility study	15,000 Small grant	15,000
Price T, Holden C, Poprawski D, Roder D, Ratcliffe J, Turnbull D, Buckley E, Singhal N, Wichmann M	Cancer Council SA Beat Cancer 2019	Does ageism prevail in access to multidisciplinary cancer care?	134,700 No Australians Dying of Bowel Cancer Initiative: Translational Research Package	134,700
Worthley D, Hewett P	Cancer Council SA Beat Cancer 1167836 2019-2021	Australian trial of Peritoneal Organoid guided therapy to Lengthen Life in patients without Opportunity for cure (APOLLO2)	127,550 Translational Research package	382,650
Wijesundara D, Gowans E, Robertson S, Grubor-Bauk B, Shrestha A	Channel 7 Children's Research Foundation/ THRF 2019-2020	A pre-clinical evaluation of an innovative DNA based vaccination regimen to protect women of childbearing age against the Zika virus during sexual transmission	120,000 Project grant	240,000
Wormald PJ, Vreugde S	Garnett Passe and Rodney Williams Memorial Foundation 2019-2021	A novel treatment for <i>S. aureus</i> recalcitrant Chronic Rhinosinusitis	125,000 Conjoint grant	375,000
Boyd M, Schubert KO, Clark SR, Gail M, Harding D, McMichael G, Baune B, Beckwith A, Shaw D, Tse E	Gilead Sciences 2019-2021	Epclusa (sofosbuvir/velpatasvir) in people living with severe, enduring mental illness and chronic viral hepatitis C infection	380,000 Investigator initiated Project grant	951,122
Wormald PJ, Vreugde S	NHMRC 1153663 2019-2021	A novel medicated surgical hydrogel to prevent epidural adhesions post-laminectomy	161,798 Development grant	522,607
Forster S, Lawley T, Costello S	NHMRC 1156333 2019-2021	Characterisation of mobile antimicrobial resistance in the human gastrointestinal microbiota	50,000 Project grant	878,108
Ramsay R, Worthley D, Heriot A, Narasimhan V, Tie J, Woods S, Price T, Graham T, Hewett P, Grandori C	NHMRC 1156391 2019-2023	From the Stone Age to the State of the Art – Multidimensional Precision Medicine for Peritoneal Colorectal cancer	278,000 Project grant	1,399,877
Panagopoulos V	NHMRC 1160000 2019-2022	Stromal cell-derived factor Gremlin 1 promotes tumour growth and metastasis of breast cancer	109,064 Peter Doherty Biomedical ECR Fellowship	327,192
Stanton N, Moseley L, Hill C	NHMRC 1161634 2019-2021	Targeting unhelpful pain beliefs to promote physical activity in people with knee osteoarthritis: a multi-centre, randomised controlled trial with cost-effectiveness analysis	398,752 Project Grant	1,196,257
Chong CR	NHMRC 1162356 2019-2022	Novel strategy to prevent cardiovascular complications in diabetes: the role of poly(ADP-ribose) polymerase-1 inhibition	109,064 Peter Doherty Biomedical ECR Fellowship	327,193
Richter K	NHMRC 1163634 2019-2022	Maximising the effectiveness of antimicrobial treatments for infection control after surgery	104,298 CJ Martin Biomedical ECR Fellowship	417,192

GRANTS COMMENCING IN 2019

GRANT RECIPIENTS	GRANTING BODY FUNDING PERIOD	PROJECT TITLE	REVENUE 2019 TYPE OF GRANT	TOTAL GRANT FUNDING
Vreugde S, Psaltis A, Prestidge C, Thomas N	NHMRC 1164562 2019-2021	Maximising the antimicrobial and anti-inflammatory performance of next generation therapeutics for Chronic Rhinosinusitis	255,796 Project Grant	767,389
Grzeskowiak L, Amir L, Smithers L, Jacobs S, Ingman W , Grivell R	NHMRC 1165457 2019-2021	OPTimising Mothers' Own Milk supply in the neonatal unit – enhancing breast milk supply with Domperidone in mothers of preterm infants (OPTIMOM-D)	326,666 Project Grant	980,000
Karatassas A	RACS Foundation for Surgery 2019	Developing a hernia mesh tissue integrated index	10,000 Small Project Grant	10,000
Clark SR , Toben C, Jawahar C, Symon J, Mills N	RAH Research Committee MyIP Ref: 10946 Mar 2019 - June 2020	To investigate the association of complement, oxidative and inflammatory markers and BDNF with cognitive and general function in chronic psychosis	40,242 Clinical Project Grant	40,242
Grubor-Bauk B, Wijesundara WK, Gowans EJ	The University of Adelaide/THRF 2019	A novel vaccine against Zika virus	200,000 Commercial Accelerator Scheme	200,000
Grubor-Bauk B	The University of Adelaide/THRF 2019	Research Support Fellowship	60,000 Barbara Kidman Fellowship	60,000

PUBLICATIONS 2018

BY ADMINISTRATIVE UNIT

**Aged and Extended Care Services,
TQEH**

Anaesthesia, Department of TQEH

Cardiology Unit, TQEH

Clinical Pharmacology Unit, TQEH

Endocrinology Unit, TQEH

**Gastroenterology and Hepatology Unit,
TQEH**

**Haematology and Medical Oncology,
Department of, TQEH**

Intensive Care Unit, TQEH

**Medicine, The University of Adelaide,
Discipline of**

Neurology Unit, TQEH

**Psychiatry, The University of Adelaide,
Discipline of**

Respiratory Medicine Unit, TQEH

Rheumatology Unit, TQEH

**Surgery, The University of Adelaide,
Discipline of at TQEH/Division of
Surgery, TQEH**

**Therapeutics Research Centre,
University of South Australia**

PUBLICATIONS 2018

BHI, TQEH BASED RESEARCHERS FROM EACH UNIT/DEPT ARE UNDERLINED

AGED AND EXTENDED CARE SERVICES, TQEH

1. Ambagtsheer RC, Beilby JJ, Visvanathan R, Dent E, Yu S, Braunack-Mayer AJ. Should we screen for frailty in primary care settings? A fresh perspective on the frailty evidence base: A narrative review. *Prev Med*. 2018 Dec 27;119:63-69. Review.
2. Arjuna T, Miller M, Soenen S, Chapman I, Visvanathan R, Luscombe-Marsh ND. Service size and estimated energy and protein contents of meals prepared by meals on wheels South Australia Inc.: Findings from a meal audit study. *Foods*. 2018 Feb 20;7(2).
3. Chen EY, Sluggett JK, Ilomäki J, Hilmer SN, Corlis M, Picton LJ, Dean L, Alderman CP, Farinola N, Gailer J, Grigson J, Kellie AR, Putsey PJ, Yu S, Bell JS. Development and validation of the Medication Regimen Simplification Guide for Residential Aged Care (Mrs GRACE). *Clin Interv Ageing*. 2018;13: 975-986.
4. De Silva T, Theou O, Vellas B, Cesari M, Visvanathan R. Frailty Screening (FRAIL-NH) and Mortality in French Nursing Homes: Results from the INCUR Study. *J Am Med Dir Assoc*. 2018 May;19(5):411-414.
5. Dent E, Morley JE, Cruz-Jentoft A, Arai H, Kritchevsky S, Guralnik J, Bauer JM, Pahor M, Clark B, Cesari M, Ruiz J, Sieber CC, Aubertin M, Waters DL, Visvanathan R, Landi F, Villareal D, Fielding R, Won W, Theo O, Martin F, Dong B, Cawthorn PM, Woo J, Flicker L, Ferrucci L, Merchant R, Cao L, Cederholm T, Ribero S, Manas-Rodriguez L, Anker S, Lundy J, Gutierrez-Robledo L, Bautmans I, Apprahamian I, Schols J, Isquierdo M, Vellas B. International Clinical Practice Guidelines for Sarcopenia (ICFSR): Screening Diagnosis and Management. *Journal Nutrition Healthy and Ageing*. 2018;22(10): 1148-1161.
6. Gupta AD, Chu WH, Howell S, Chakraborty S, Koblar S, Visvanathan R, Cameron I, Wilson D. A systematic review: efficacy of botulinum toxin in walking and quality of life in post stroke lower limb spasticity. *Systematic Reviews*. 2018;7(1):1.
7. Gupta AD, Tucker G, Koblar S, Visvanathan R, Cameron I. Spatiotemporal Gait Analysis and Lower Limb Functioning in Foot Dystonia Treated with Botulinum Toxin. *Toxins (Basel)*. 2018 Dec 12;10(12).
8. Gupta AD, Wilson DH. Botulinum toxin for spasticity: a case for change to the Pharmaceutical Benefits Scheme. *MJA*. 2018; 208 (9): 379-381.
9. Jadcak A, Dollard J, Mahajan N, Visvanathan R. The perspectives of pre-frail and frail older people on being advised about exercise: a qualitative study. *Family Practice*. 2018;35(3): 330-335.
10. Jadcak A, Tham K, Visvanathan R. Educating medical students in counseling older adults about exercise: the impact of physical activity module. *J Frailty Aging* 2018;7(20): 113-119.
11. Jadcak AD, Makwana N, Luscombe-Marsh, Visvanathan R, Schultz T. The effectiveness of exercise interventions on physical function in community-dwelling frail older people: an umbrella review of systematic reviews. *JBI Database System Rev Implement Rep*. 2018 Mar;16(3):752-775.
12. Khow KS, Dollard J, Bray K, Smyth C, Chehade M, Theo O, Visvanathan R. A randomized controlled feasibility study to evaluate the effects of a goal-setting coaching intervention using feedback from an accelerometer on sedentary time in older people at risk of falls (SMART-MOVE): a study protocol. *Pilot Feasibility Stud*. 2018;4: 173.
13. Korhonen MJ, Ilomäki J, Sluggett JK, Brookhart MA, Visvanathan R, Cooper T, Robson L, Bell JS. Selective prescribing of statins and the risk of mortality, hospitalizations and falls in aged care services. *J Clin Lipidol*. 2018 May-June; 12(3):652-661.
14. Martins BA, Barrie J, Dollard J, Mahajan N, Visvanathan R. Older adults' perceptions of the built environment and associations with frailty: a feasibility and acceptability study. *J Frailty Aging*. 2018;7(4):268-271.
15. Pham HT, Stevens JE, Rigda RS, Phillips LK, Wu T, Hausken T, Soenen S, Visvanathan R, Rayner CK, Horowitz M, Jones KL. Effects of intraduodenal administration of the artificial sweetener sucralose on blood pressure and superior mesenteric artery blood flow in healthy older subjects. *Am J Clin Nutr*. 2018;108 (1): 156-162.
16. Preston D, Nguyen RNM, Visvanathan R, Wilson A. Nutrition and the community-dwelling person: a pilot study in general practice. *Int J Evid Based Healthc*. 2018; 16(1): 73-80.
17. Teh R, Visvanathan R, Ranasinghe D, Wilson A. Evaluation and refinement of a handheld health information technology tool to support the timely update of bedside visual cues to prevent falls in hospitals. *Int J Evid Based Healthc*. 2018;16(2):90-100.
18. Theou O, Sluggett JK, Bell JS, Tan ECK, Cooper T, Robson L, Morley JEMB, Rockwood K, Visvanathan R. Frailty, Hospitalisation and Mortality In Residential Aged Care. *J Gerontol Bio Med Sci*. 2018 Jul;73(8): 1090-1096.
19. Thompson MQ, Theou O, Adams R, Tucker G, Visvanathan R. Frailty state transitions and associated factors in Australian older adults. *Geriatr Gerontol Int*. 2018 Nov;18(11):1549-1555.
20. Thompson MQ, Theou O, Tucker G, Adams R, Visvanathan R. Frailty prevalence in Australia: Findings from four pooled Australian cohort studies. *Aus J Aging*. 2018; 37(2):155-158.
21. Thompson MQ, Theou O, Yu S, Tucker G, Adams R, Visvanathan R. Frailty prevalence and factors associated with the frailty phenotype and frailty index. Findings from the North West Adelaide Health Study. *Aus J Aging*. 2018; 37(2):120-126.
22. Visvanathan R, Amare AT, Wesselingh S, Hearn R, McKechnie S, Mussared J, Inacio M. Prolonged wait time prior to entry to home care packages increases the risk of mortality and transition to permanent residential aged care services: findings from the Registry of Older South Australians (ROSA). *J Nutr Health Aging*. 2018. <https://doi.org/10.1007/s12603-018-1145-y>
23. Visvanathan R. Implementing A Geriatric Service of Excellence In One Health Region In Australia. *Asian Journal of Geriatrics and Gerontology*. 2018; 13(1):31-35.
24. Walker R, Ratcliffe J, White A, Visvanathan R. Dementia assessment services: what are the perceptions of older people. *Aus J Aging*. 2018;37(1):43-47.

ANAESTHESIA, DEPARTMENT OF, TQEH

1. Adhikary S, Pruett A, Forero M, Thiruvankatarajan V. Erector spinae plane block as an alternative to epidural analgesia for post operative analgesia following video assisted thoracoscopic surgery: A case study and a literature review on the spread of local anaesthetic in the erector spinae plane. *Indian Journal of Anaesthesia*. 2018; 62(1):75-8.

2. [Kadam V](#), [Reid D](#). Psoas compartment block for intraoperative anesthesia for fracture neck of femur: Case report. *Journal of Anaesthesiology Clinical Pharmacology*. 2018 Apr-Jun; 34(2): 264-265.
3. [Kadam VR](#), [Howell S](#). Ultrasound-guided continuous transmuscular quadratus lumborum block- L4 or L2 level catheter insertion for analgesia in open abdominal surgery: Case series. *Indian J Anaesth*. 2018 Jul;62(7):555-557.
4. [Kadam V](#), [Wahba M](#). Use of erector spinae plane block in open abdominal surgery and cancer pain. *Journal of Anaesthesiology Clinical Pharmacology*. 2018 Oct-Dec;34(4):564-567.
5. [Nanjappa N](#), [Jesudason D](#), [Thiruvankatarajan V](#), [Meyer E](#). Perioperative management of sodium-glucose cotransporter-2 inhibitors: importance of a nuanced approach. *Anaesthesia & Intensive Care*. 2018 Jul; 46(4):424-425.
6. [Rao KV](#), [Dhatchinamoorthi D](#), [Nandhakumar A](#), [Selvarajan N](#), [Akula H](#), [Thiruvankatarajan V](#). Validity of thyromental height test as a predictor of difficult laryngoscopy: A prospective evaluation comparing modified Mallampati score, interincisor gap, thyromental distance, neck circumference, and neck extension. *Indian Journal of Anaesthesia*. 2018 Aug; 62(8):603-608.
7. [Thiruvankatarajan V](#), [Cruz Eng H](#), [Adhikary S](#). An update on regional analgesia for rib fractures. *Curr Opin Anaesthesiol*. 2018 Oct;31(5):601-607.
8. [Thiruvankatarajan V](#), [Jeyadoss J](#), [Rao KV](#), [Du LY](#), [Liu W](#), [Van Wijk R](#). The effect of sevoflurane on the transmural dispersion of repolarisation in patients with type 2 diabetes mellitus: a prospective observational study. *Anaesthesia & Intensive Care*. 2018 Jan; 46(1):51-57.
9. [Thiruvankatarajan V](#), [Maycock T](#), [Grosser D](#), [Currie J](#). Anaesthetic management for endobronchial valve insertion: lessons learned from a single centre retrospective series and a literature review. *BMC Anesthesiology*. 2018 Dec; 18(1):206.
4. [Horowitz JD](#), [DeCaterina R](#), [Heresztyn T](#), [Alexander JH](#), [Andersson U](#), [Lopes RD](#), [Steg PG](#), [Hylek EM](#), [Mohan P](#), [Hanna M](#), [Jansky P](#), [Granger CB](#), [Wallentin L](#): ARISTOTLE Investigators. Asymmetric and symmetric dimethylarginine predicts outcomes in patients with atrial fibrillation: An ARISTOTLE Substudy. *J Am Coll Cardiol*. 2018;14:72(7):721-733.
5. [Horowitz JD](#), [Liu S](#). ADAM-15 and glycocalyx shedding: a new perspective on sepsis related vasomotor dysfunction. Invited Editorial. *Cardiovascular Research* 114(13):1694-1695, 2018.
6. [Horowitz JD](#), [Sage PR](#). Can we improve long-term outcomes post bifurcation stenting by prolonged dual antiplatelet therapy? *Circ: Cardiovasc Interv*. Invited Editorial. 2018;11(17):E006922.
7. [Surikow SY](#), [Nguyen TH](#), [Stafford I](#), [Chapman M](#), [Chacko S](#), [Singh K](#), [Licari G](#), [Raman B](#), [Kelly DJ](#), [Zhang Y](#), [Waddingham MT](#), [Ngo DT](#), [Bate AP](#), [Chua SJ](#), [Frenneaux MP](#), [Horowitz JD](#). Nitrosative stress as a modulator of inflammatory change in a model of Takotsubo Syndrome. *JACC: Basic to Trans Sci*. 2018;3(2):213-226.

CLINICAL PHARMACOLOGY, TQEH

1. [Hu R](#), [Barratt DT](#), [Coller JK](#), [Sallustio BC](#), [Somogyi AA](#). CYP3A5*3 and ABCB1 61A>G Significantly Influence Dose-adjusted Trough Blood Tacrolimus Concentrations in the First Three Months Post-Kidney Transplantation. *Basic Clin Pharmacol Toxicol*. 2018 Sep;123(3):320-326.
2. [Licari G](#), [Milne RW](#), [Somogyi AA](#), [Sallustio BC](#). Enantioselectivity in the tissue distribution of perhexiline contributes to different effects on hepatic histology and peripheral neural function in rats. *Pharmacol Res Perspect*. 2018 Jun;6(3):e00406.
3. [Md Dom ZI](#), [Coller JK](#), [Carroll RP](#), [Tuke J](#), [McWhinney BC](#), [Somogyi AA](#), [Sallustio BC](#). Mycophenolic acid concentrations in peripheral blood mononuclear cells are associated with the incidence of rejection in renal transplant recipients. *Br J Clin Pharmacol*. 2018 Oct;84(10):2433-2442.
4. [Surikow SY](#), [Nguyen TH](#), [Stafford I](#), [Chapman M](#), [Chacko S](#), [Singh K](#), [Licari G](#), [Raman B](#), [Kelly DJ](#), [Zhang Y](#), [Waddingham MT](#), [Ngo DT](#), [Bate AP](#), [Chua SJ](#), [Frenneaux MP](#), [Horowitz JD](#). Nitrosative stress as a modulator of inflammatory change in a model of Takotsubo Syndrome. *JACC: Basic to Trans Sci*. 2018;3(2):213-226.

CARDIOLOGY UNIT, TQEH

1. [Ajaero CN](#), [Chong CR](#), [Procter NEK](#), [Liu S](#), [Chirkov YY](#), [Heresztyn T](#), [Chan WPA](#), [Arstall MA](#), [McGavigan AD](#), [Frenneaux MP](#), [Horowitz JD](#). Does cardiac resynchronization therapy restore peripheral circulatory homeostasis? *ESC Heart Fail*. 2018; 5(1):129-138.
2. [Ghadri JR](#), [Wittstein IS](#), [Prasad A](#), [Sharkey S](#), [Dote K](#), [Akashi YJ](#), [Cammann VL](#), [Crea F](#), [Galiuto L](#), [Desmet W](#), [Yoshida T](#), [Manfredini R](#), [Eitel I](#), [Kosuge M](#), [Nef HM](#), [Deshmukh A](#), [Lerman A](#), [Bossone E](#), [Citro R](#), [Ueyama T](#), [Corrado D](#), [Kurusu S](#), [Winchester D](#), [Lyon AR](#), [Omerovic E](#), [Baxx JJ](#), [Meimoun P](#), [Tarantini G](#), [Rihal C](#), [Y-Hassan S](#), [Migliore F](#), [Horowitz JD](#), [Shimokawa H](#), [Ruschitzka F](#), [Luscher TF](#), [Templin C](#). International expert consensus document on Takotsubo Syndrome. (Part I): Clinical characteristics, diagnostic criteria and pathophysiology. *Eur Heart J*. 2018;39(22):2032-2046.
3. [Ghadri JR](#), [Wittstein IS](#), [Prasad A](#), [Sharkey S](#), [Dote K](#), [Akashi YJ](#), [Cammann V](#), [Crea F](#), [Galiuto L](#), [Desmet W](#), [Yoshida T](#), [Manfredini R](#), [Eitel I](#), [Kosuge M](#), [Nef HM](#), [Deshmukh A](#), [Lerman A](#), [Bossone E](#), [Citro R](#), [Ueyama T](#), [Corrado D](#), [Kurusu S](#), [Winchester D](#), [Lyon AR](#), [Omerovic E](#), [Bax JJ](#), [Meimoun P](#), [Tarantini G](#), [Rihal C](#), [Y-Hassan S](#), [Migliore F](#), [Horowitz JD](#), [Shimokawa H](#), [Ruschitzka F](#), [Luscher TF](#), [Templin C](#). International expert consensus document on Takotsubo Syndrome (Part II): Diagnostic workup, outcome and management. *Eur Heart J*. 2018;39(22):2047-2062.

ENDOCRINOLOGY UNIT, TQEH

1. [Geyer MC](#), [Sullivan T](#), [Tai A](#), [Morton JM](#), [Edwards S](#), [Martin AJ](#), [Perano SJ](#), [Gagliardi L](#), [Rayner CK](#), [Horowitz M](#), [Couper JJ](#). Exenatide corrects postprandial hyperglycaemia in young people with cystic fibrosis and impaired glucose tolerance: A randomized crossover trial. *Diabetes Obes Metab*. 2018 Sep 26. doi: 10.1111/dom.13544. [Epub ahead of print]
2. [Gyawali P](#), [Martin SA](#), [Heilbronn LK](#), [Vincent AD](#), [Taylor AW](#), [Adams RJT](#), [O'Loughlin PD](#), [Wittert GA](#). The role of sex hormone-binding globulin (SHBG), testosterone, and other sex steroids, on the development of type 2 diabetes in a cohort of community-dwelling middle-aged to elderly men. *Acta Diabetologica*. 2018;55(8):861-872.
3. [Meyer EJ](#), [Gabb G](#), [Jesudason D](#). SGLT2 Inhibitor-Associated Euglycemic Diabetic Ketoacidosis: A South Australian Clinical Case Series and Australian Spontaneous Adverse Event Notifications. *Diabetes Care*. 2018;41(4):e47-e4.

4. Nanjappa N, Jesudason D, Thiruvengatarajan V, Meyer EJ. Perioperative management of sodium-glucose cotransporter-2 inhibitors: importance of a nuanced approach. *Anaesth Intensive Care*. 2018;46(4):424-5.
5. Tay J, Thompson C, Luscombe-Marsh, N, Wycherley T, Noakes M, Buckley J, Wittert G, Yancy Grant WS, Brinkworth G. Effects of an energy-restricted low-carbohydrate, high unsaturated fat/low saturated fat diet versus a high-carbohydrate, low-fat diet in type 2 diabetes: a 2-year randomized clinical trial. *Diabetes Obes Metab*. 2018;20(4):858-871.
6. Wu A, Shi Z, Martin S, Vincent A, Heilbronn L, Wittert G. Age-related changes in estradiol and longitudinal associations with fat mass in men. *PLoS ONE*. 2018;13(8):1-14.

GASTROENTEROLOGY AND HEPATOLOGY UNIT, TQEH

1. Bryant RV, Costello SP, Schoeman S, Sathananthan D, Knight E, Lau SY, Schoeman MN, Mountfield R, Tee D, Travis SPL, Andrews JM. Limited uptake of ulcerative colitis "treat-to-target" recommendations in real-world practice. *J Gastroenterol Hepatol*. 2018 Mar;33(3):599-607.
2. Bryant RV, Friedman AB, Wright EK, Taylor KM, Begun J, Maconi G, Maaser C, Novak KL, Kucharzik T, Atkinson NSS, Asthana A, Gibson PR. Gastrointestinal ultrasound in inflammatory bowel disease: an underused resource with potential paradigm-changing application. *Gut*. 2018 May;67(5):973-985.
3. Bryant RV, Schultz CG, Ooi S, Goess C, Costello SP, Vincent AD, Schoeman S, Lim A, Bartholomeusz FD, Travis SPL, Andrews JM. Authors' reply: The Association Between Visceral Adipose Tissue and Stricturing Crohn's Disease Behavior, Fecal Calprotectin and Quality of Life. *Inflamm Bowel Dis*. 2018 Oct 31. doi: 10.1093/ibd/izy338. [Epub ahead of print] No abstract available.
4. Bryant RV, Schultz CG, Ooi S, Goess C, Costello SP, Vincent AD, Schoeman S, Lim A, Bartholomeusz FD, Travis SPL, Andrews JM. Visceral Adipose Tissue Is Associated With Stricturing Crohn's Disease Behavior, Fecal Calprotectin, and Quality of Life. *Inflamm Bowel Dis*. 2018 Sep 12. doi: 10.1093/ibd/izy278. [Epub ahead of print]
5. Bryant RV, Schultz CG, Ooi S, Goess C, Costello SP, Vincent AD, Schoeman SN, Lim A, Bartholomeusz FD, Travis SPL, Andrews JM. Obesity in Inflammatory Bowel Disease: Gains in Adiposity despite High Prevalence of Myopenia and Osteopenia. *Nutrients*. 2018 Sep 1;10(9).
6. Dudhwala ZM, Drew PA, Howarth GS, Moore D, Cummins AG. Active β -Catenin signaling in the small intestine of humans during infancy. *Dig Dis Sci* 2018: Oct 31, 1007/s10620-018-5286-y.
7. Oakland K, Kahan BC, Guizzetti L, Martel M, Bryant RV, Brahmanian M, Singh S, Nguyen N, Sey MSL, Barkun A, Jairath V. Development, Validation, and Comparative Assessment of an International Scoring System to Determine Risk of Upper Gastrointestinal Bleeding. *Clin Gastroenterol Hepatol*. 2018 Sep 27. pii: S1542-3565(18)31069-3.
8. Schwerdt T, Bryant RV, Pandey S, Capitani M, Meran L, Cazier JB, Jung J, Mondal K, Parkes M, Mathew CG, Fiedler K, McCarthy DJ, WGS500 Consortium; Oxford IBD cohort study investigators; COLORS in IBD group investigators; UK IBD Genetics Consortium, Sullivan PB, Rodrigues A, Travis SPL, Moore C, Sambrook J, Ouwehand WH, Roberts DJ, Danesh J; INTERVAL Study, Russell RK, Wilson DC, Kelsen JR, Cornall R, Denson LA, Kugathasan S, Knaus

UG, Serra EG, Anderson CA, Duerr RH, McGovern DP, Cho J, Powrie F, Li VS, Muise AM, Uhlig HH. NOX1 loss-of-function genetic variants in patients with inflammatory bowel disease. *Mucosal Immunol*. 2018 Mar;11(2):562-574.

HAEMATOLOGY AND MEDICAL ONCOLOGY DEPARTMENT OF, TQEH

1. Adelson P, Fusco K, Karapetis C, Wattchow D, Joshi R, Price T, Sharplin G, Roder D. Use of guideline-recommended adjuvant therapies and survival outcomes for people with colorectal cancer at tertiary referral hospitals in South Australia. *Journal of Evaluation in Clinical Practice*. 2018; 24(1):135-144.
2. Hugo HJ, Zysk A, Dasari P, Britt K, Hopper JL, Stone J, Thompson EW, Ingman WV. InforMD: a new initiative to raise public awareness about breast density. *eCancer*. 2018 Feb 6;12:807.
3. Jenkins MA, Win AK, Templeton AS, Angelakos MS, Buchanan DD, Cotterchio M, Figueiredo JC, Thibodeau SN, Baron JA, Potter JD, Hopper JL, Casey G, Gallinger S, Le Marchand L, Lindor NM, Newcomb PA, Haile RW; Colon Cancer Family Registry Cohort Investigators (J Young). Cohort Profile: The Colon Cancer Family Registry Cohort (CCFRC) *Int J Epidemiol*. 2018 Apr;147(2):387-388i.
4. Jonker D, Nott L, Yoshino T, Gill S, Shapiro J, Ohtsu A, Zalberg J, Vickers M, Wei A, Gao Y, Tebbutt N, Markman B, Price T, Esaki T, Koski S, Hitron M, Li W, Li Y, Magoski N, Li C, Simes J, Tu D, Callaghan C. Napabucasin versus placebo in refractory advanced colorectal cancer: a randomised phase 3 trial. *Lancet Gastroenterol Hepatol*. 2018 Apr;3(4):263-270.
5. Kim T, Peeters M, Thomas A, Gibbs P, Hool K, Zhang J, Ang A, Bach B, Price T. Impact of Emergent Circulating Tumor DNA RAS Mutation in Panitumumab-Treated Chemoresistant Metastatic Colorectal Cancer. *Clin Cancer Res*. 2018 DOI: 10.1158/1078-0432.CCR-17-3377
6. Lau D, Tay R, Yeung Y, Chionh F, Mooi J, Murone C, Skrinos E, Price T, Mariadason J, Tebbutt N. Phase II study of everolimus (RAD001) monotherapy as first-line treatment in advanced biliary tract cancer with biomarker exploration: the RADiChol Study. *Br J Cancer*. 2018 Apr;118(7):966-971.
7. Lee R, Kanhere H, Trochsler M, Broadbridge V, Maddern G, Price T. Pancreatic, periampullary and biliary cancer with liver metastases: Should we consider resection in selected cases? *World Journal of Gastrointestinal Oncology*. 2018 Aug;10(8):211-220.
8. Leyden J, Pavlakis N, Chan D, Michael M, Clarke S, Khasraw M, Price T. Patient-reported experience of the impact and burden of neuroendocrine tumors: Oceania patient results from a large global survey. *Asia-Pacific Journal of Clinical Oncology*. 2018 June;14(3):256-263.
9. Martin A, Gibbs E, Sjoquist K, Pavlakis N, Simes J, Price T, Shannon J, Gill S, Jain V, Liu G, Kannourakis G, Kim Y, Kim J, Goldstein D, INTEGRATE I investigators. Health-related quality of life associated with regorafenib treatment in refractory advanced gastric adenocarcinoma. *Gastric Cancer*. 2018 May; 21(3):473-480.
10. McGregor M, Price T. Panitumumab in the treatment of metastatic colorectal cancer, including wild-type RAS, KRAS and NRAS mCRC. *Future Oncology*. 2018 Oct;14(24):2437-2459.

11. Mooi JK, Wirapati P, Asher R, Lee CK, Savas PS, [Price TJ](#), [Townsend A](#), [Hardingham JE](#), Buchanan D, Williams D, Tejpar S, Mariadason JM, Tebbutt NC. The prognostic impact of Consensus Molecular Subtypes (CMS) and its predictive effects for bevacizumab benefit in metastatic colorectal cancer: molecular analysis of the AGITG MAX clinical trial. *Annal Oncol*. 2018 Nov 1;29(11):2240-2246.
12. Palethorpe HM, [Tomita Y](#), [Smith E](#), [Pei JV](#), [Townsend AR](#), [Price TJ](#), [Young JP](#), Yool A, [Hardingham JE](#). The Aquaporin 1 Inhibitor Bacopaside II Reduces Endothelial Cell Migration and Tubulogenesis and Induces Apoptosis. *Int J Mol Sci*. 2018;19(3).
13. Palethorpe HM, Leach DA, Need EF, [Drew PA](#), [Smith E](#). Myofibroblast androgen receptor expression determines cell survival in co-cultures of myofibroblasts and prostate cancer cells *in vitro*. *Oncotarget*. 2018 Apr 10;9(27):19100-19114.
14. Peeters M, [Price T](#), Taieb J, Geissler M, Rivera F, Canon JL, Pentheroudakis G, Koukakis R, Burdon P, Siena S. Relationships between tumour response and primary tumour location, and predictors of longterm survival, in patients with RAS wild-type metastatic colorectal cancer receiving first-line panitumumab therapy: retrospective analyses of the PRIME and PEAK clinical trials. *Br J Cancer*. 2018 Aug;119(3):303-312.
15. Prasanna T, Karapetis C, Roder D, Tie J, Padbury R, [Price T](#), Wong R, Shapiro J, Nott L, Lee M, Chua Y, Craft P, Piantadosi C, Sorich M, Gibbs P, Yip D. The survival outcome of patients with metastatic colorectal cancer based on the site of metastases and the impact of molecular markers and site of primary cancer on metastatic pattern. *Acta Oncologica*. 2018 Nov;57(11):1438-1444.
16. [Price T](#), Tang M, Gibbs P, Haller D, Peeters M, Arnold D, Segelov E, Roy A, Tebbutt N, Pavlakis N, Karapetis C, Burge M, Shapiro J. Targeted therapy for metastatic colorectal cancer. *Expert Rev Anticancer Ther*. 2018 Oct;18(10):991-1006.
17. [Price T](#). Modified XELIRI (capecitabine plus irinotecan) for metastatic colorectal cancer. *Lancet Oncology*. 2018 May; 19(5): 587-589.
18. Shapiro J, Thavaneswaran S, Underhill C, Robledo K, Karapetis C, Day F, Nott L, Jefford M, Chantrill L, Pavlakis N, Tebbutt N, [Price T](#), Khasraw M, Van Hazel G, Waring P, Tejpar S, Simes J, GebSKI V, Desai J, Segelov E. Cetuximab alone or with Irinotecan for resistant KRAS-, NRAS-, BRAF- and PIK3CA-wild-type metastatic colorectal cancer: The AGITG Randomized Phase II ICECREAM Study. *Clinical Colorectal Cancer*. 2018;17(4):313-319.
19. Shepshelovich D, [Townsend A](#), Espin-Garcia O, Latifovic L, O'Callaghan C, Jonker D, Tu D, Chen E, Morgen E, [Price T](#), Shapiro J, Siu L, Kubo M, Dobrovic A, Ratain M, Xu W, Mushiroda T, Liu G. Fc-gamma receptor polymorphisms, cetuximab therapy, and overall survival in the CCTG CO.20 trial of metastatic colorectal cancer. *Cancer Medicine*. 2018 Oct DOI: 10.1002/cam4.1819
20. [Smith E](#), [Palethorpe HM](#), [Tomita Y](#), [Pei JV](#), [Townsend AR](#), [Price TJ](#), [Young JP](#), Yool A, [Hardingham JE](#). The Purified Extract from the Medicinal Plant *Bacopa monnieri*, Bacopaside II, Inhibits Growth of Colon Cancer Cells *In Vitro* by Inducing Cell Cycle Arrest and Apoptosis. *Cells*. 2018;7(7).
21. Sud S, O'Callaghan C, Jonker C, Karapetis C, [Price T](#), Tebbutt N, Shapiro J, Van Hazel G, Pavlakis N, Gibbs P, Jeffrey M, Siu L, Gill S, Wong R, Jonker D, Tu D, Goodwin R. Hypertension as a predictor of advanced colorectal cancer outcome and cetuximab treatment response. *Current Oncology*. 2018 Dec;25(6):e516-e526.
22. Tang M, [Price T](#), Shapiro J, Gibbs P, Haller D, Arnold D, Peeters M, Segelov E, Roy A, Tebbutt N, Pavlakis N, Karapetis C, Burge M. Adjuvant therapy for resected colon cancer 2017, including the IDEA analysis *Expert Rev Anticancer Ther*. 2018 Apr;18(4):339-349.
- [Tapia Rico G](#), Karapetis C, [Townsend A](#), Piantadosi C, Padbury R, Roy A, Maddern G, Moore J, Carruthers S, Roder D, [Price T](#). Do we know what to do with our nonagenarian and centenarian patients with metastatic colorectal cancer (mCRC)? Results from the South Australian mCRC registry. *Acta Oncologica*. 2018;57(11):1455-1457.
23. [Tapia Rico G](#), Li M, Pavlakis N, Cehic G, [Price T](#). Prevention and management of carcinoid crises in patients with high-risk neuroendocrine tumours undergoing peptide receptor radionuclide therapy (PRRT): Literature review and case series from two Australian tertiary medical institutions. *Cancer Treatment Reviews*. 2018 May; 66:1-6.
24. [Tapia Rico G](#), [Price T](#). Atezolizumab for the treatment of colorectal cancer: the latest evidence and clinical potential. *Expert Opin Biol Ther*. 2018 Apr;18(4):449-457.
25. Tie J, Cohen J, Wang Y, Li L, Christie M, Simons K, Elsaleh H, Kosmider S, Wong R, Yip D, Lee M, Tran B, Rangiah D, Burge M, Goldstein D, Singh M, Skinner I, Faragher I, Croxford M, Bampton C, Haydon A, Jones I, S Karapetis C, [Price T](#), Schaefer M, Ptak J, Dobbyn L, Silliman N, Kinde I, Tomasetti C, Papadopoulos N, Kinzler K, Volgestein B, Gibbs P. Serial circulating tumour DNA analysis during multimodality treatment of locally advanced rectal cancer: A prospective biomarker study. *Gut*. 2018 doi:10.1136/gutjnl-2017-315852 [Epub ahead of print].
26. [Townsend A](#), Tebbutt N, Karapetis C, Cooper P, Singhal N, [Yeend S](#), Pirc L, Joshi R, [Hardingham JE](#), [Price T](#). Phase IB/II Study of Second-Line Therapy with Panitumumab, Irinotecan, and Everolimus (PIE) in KRAS Wild-Type Metastatic Colorectal Cancer. *Clin Cancer Res*. 2018;24(16):3838-44.
27. Wells J, Tu D, Siu L, Shapiro J, Jonker D, Karapetis C, Simes J, Liu G, [Price T](#), Tebbutt N, O'Callaghan C. Outcomes of older patients (>= 70 years) treated with targeted therapy in metastatic chemorefractory colorectal cancer: Retrospective analysis of NCIC CTG CO.17 and CO.20. *Clinical Colorectal Cancer*. 2018 Nov; 1-9.
28. Wong G, Kumar R, Beeke C, Ullah S, Chen J, Karapetis C, [Price T](#), Padbury R. Survival outcomes for patients with indeterminate 18FDG-PET scan for extrahepatic disease before liver resection for metastatic colorectal cancer: A retrospective cohort study using a prospectively maintained database to analyze survival outcomes for patients with indeterminate extrahepatic disease on 18FDG-PET scan before liver resection for metastatic colorectal cancer. *Annals of Surgery*. 2018 May;267(5):929-935.
29. Wong G, Kumar R, Beeke C, Ullah S, Chen J, Karapetis C, [Price T](#), Padbury R. Response to: "Consideration of KRAS mutation status may enhance the prognostic impact of indeterminate extrahepatic disease in the lungs, as identified by 18FDG-PET, in patients with colorectal liver metastases". *Annals of Surgery*. 2018 Jul; 268(1):e9-e10.

Book

Sultana A, Meng R, Piantadosi C, Brooke-Smith M, Chen J, Dolan P, Maddern G, [Price T](#), Padbury R. Liver resection for colorectal cancer metastases: a comparison of outcomes over time in South Australia. HPB (Oxford). 2018 Apr;20(4):340-346.

INTENSIVE CARE UNIT, TQEH

1. Abraham J, Sinollareddy M, Roberts MS, Williams P, Peake SL, Lipman J, Roberts JA. Plasma and interstitial fluid population pharmacokinetics of vancomycin in critically patients with sepsis. *International Journal of Antimicrobial Agents*. 2018 Oct 5. pii: S0924-8579(18)30280-2.
2. Annane D, Ouanes-Besbes L, de Backer D, Du B, Gordon AC, Hernández G, Olsen KM, Osborn TM, Peake S, Russell JA, Cavazzoni SZ. A global perspective on vasoactive agents in shock. *Intensive Care Med*. 2018 Jun;44(6):833-846.
3. Chapman M, Peake S, Bellomo R, Davies A, Deane A, Horowitz M, Hurford S, Lange K, Little L, Mackle D, O'Connor M, Presneill J, Ridley E, Williams P, Young P. Energy-dense versus routine enteral nutrition in the critically ill. *New England Journal of Medicine*. 2018 Nov; 379(19):1823-1834.
4. Deane AM, Peake SL, Chapman MJ. The disconnect between nutrition guidelines and evidence: how much protein should I prescribe to this critically ill patient? *Critical Care Resuscitation*. 2018 Mar;20(1) 3-4.
5. Maiden MJ, Finnis ME, Peake SL, McRae S, Delaney A, Bailey M, Bellomo R. Haemoglobin concentration and volume of intravenous fluids in septic shock in the ARISE trial. *Crit Care*. 2018 May 3; 22(1):118.
6. Maiden M, Finnis M, Peake S, McRae S, Delaney A, Bailey M, Bellomo R. Authors' response to "the relationship between the decrease in haemoglobin concentration and the volume of fluids administered during resuscitation from septic shock may not be so weak." *Critical Care*. 2018 Sep 20;22(1):234.
7. McFall A, Peake SL, Williams PJ. Weight and height documentation: Does ICU measure up? *Aust Crit Care*. 2018 Jul 10. pii: S1036-7314(18)30041-9. doi: 10.1016/j.aucc.2018.06.005. [Epub ahead of print]
8. Moran JL, Solomon PJ. The search for biomarkers in the critically ill: a cautionary tale. *Crit Care Resusc*. 2018 Jun;20(2):85-93.
9. Reddi B, Finnis M, Udy A, Maiden M, Delaney A, Bellomo R, Peake S; ARISE Study Management Committee and the Australian and New Zealand Intensive Care Society Clinical Trials Group. The relationship between the change in central venous pressure and intravenous fluid volume, in patients presenting to the emergency department with septic shock. *Intensive Care Med*. 2018 Sep;44(9):1591-1592.
10. Ridley EJ, Peake SL, Jarvis M, Deane AM, Lang K, Davies AR, Chapman M, Heyland D. Nutrition Therapy in Australia and New Zealand Intensive Care Units: An international Comparison Study. *Journal of Parenteral and Enteral Nutrition*. 2018 Nov;42(8):1349-1357.
11. Sinollareddy M, Roberts M, Lipman J, Peake S, Roberts J. Pharmacokinetics of piperacillin in critically ill patients with acute kidney injury receiving sustained low-efficiency dialysis. *Journal of Antimicrobial Chemotherapy*. 2018 Jun;73(6):1647-1650.
12. The Target Investigators on behalf of the Australian and New Zealand Intensive Care Society Clinical Trials Group. Peake SL 1st Author. Statistical Analysis Plan for The Augmented versus Routine approach to Giving Energy Trial (Target). *Critical Care & Resuscitation*. 2018 Mar; 20(1) 15-20.

13. The Target Investigators on behalf of the Australian and New Zealand Intensive Care Society Clinical Trials Group. PJ Williams 1st Author. Study Protocol for The Augmented versus Routine approach to Giving Energy Trial (Target). *Critical Care Resuscitation*. 2018 Mar; 20(1) 6-14.
14. The TARGET Investigators, for the ANZICS Clinical Trials Group. Peake SL Co- 1st Author. Energy-Dense versus Routine Enteral Nutrition in the Critically Ill. *NEJM*. 2018 Nov 8;379(19):1823-1834.
15. Udy A, Finnis M, Jones D, Delaney A, Macdonald S, Bellomo R, Peake S for the ARISE Investigators. Incidence, patient characteristics, mode of drug delivery and outcomes of septic shock patients treated with vasopressors in the ARISE Trial. *Shock*. 2018 Oct 30. doi: 10.1097/SHK.0000000000001281. [Epub ahead of print]
16. Venkatesh B, Finfer S, Cohen J, Rajbhandari D, Arabi Y, Bellomo R, Billot L, Correa M, Glass P, Harward M, Joyce C, Li Q, McArthur C, Perner A, Rhodes A, Thompson K, Webb S, Myburgh J; ADRENAL Trial Investigators and the Australian–New Zealand Intensive Care Society Clinical Trials Group. Adjunctive Glucocorticoid Therapy in Patients with Septic Shock. *NEJM*. 2018 Mar 1;378(9):797-808.
17. Venkatesh B, Mehta S, Angus DC, Finfer S, Machado FR, Marshall J, Mitchell I, Peake S, Zimmerman JL. Women in Intensive Care(WIN) study: A preliminary assessment of international data on female representation in the ICU physician workforce, leadership and academic positions. *Critical Care*. 2018 Sep 10;22(1):211.

MEDICINE, THE UNIVERSITY OF ADELAIDE, DISCIPLINE OF

1. Appleton S, Gill T, Taylor A, McEvoy D, Shi Z, Hill C, Reynolds A, Adams R. Influence of Gender on Associations of Obstructive Sleep Apnea Symptoms with Chronic Conditions and Quality of Life. *Int J Environ Res Public Health*. 2018 May 7;15(5).
2. Astley CM, Ranasinghe I, Brieger D, Ellis CJ, Redfern J, Briffa T, Aliprandi-Costa B, Howell T, Bloomer SG, Gamble G, Driscoll A, Hyun KK, Hammett CJ, Chew DP. Expertise and infrastructure capacity impacts acute coronary syndrome outcomes. *Aust Health Rev*. 2018 Jun;42(3):277-285.
3. Aliprandi-Costa B, Morgan L, Snell LC, D Souza M, Kritharides L, French J, Brieger D, Ranasinghe I. ST-Elevation Acute Myocardial Infarction in Australia-Temporal Trends in Patient Management and Outcomes 1999-2016. *Heart Lung Circ*. 2018 Jun 11. pii: S1443-9506(18)30697-8.
4. Appleton SL, Gill TK, Lang CJ, Taylor AW, McEvoy RD, Stocks NP, González-Chica DA, Adams RJ. Prevalence and comorbidity of sleep conditions in Australian adults: 2016 Sleep Health Foundation national survey. *Sleep Health*. 2018 Feb;4(1):13-19.
5. Beltrame JF, Pasupathy S, Tavella R, White HD. How Can You Have a Myocardial Infarction Without Significant Coronary Artery Disease? *Heart Lung Circ*. 2018 Jun;27(6):649-651.
6. Beltrame JF, Psaltis PJ. The Forgotten Vascular Layer in the Forgotten Coronary Disorder. *J Am Coll Cardiol*. 2018 Jan 30;71(4):426-428.
7. Beltrame JF. The emergence of the coronary vasomotor dysfunction era. *Int J Cardiol*. 2018 Mar 1;254:43-44.

8. Caceres V, Stocks N, Adams R, Haag D, Peres KG, Peres M, Gonzalez-Chica D. Physical activity moderates the deleterious relationship between cardiovascular disease, or its risk factors, and quality of life: Findings from two population-based cohort studies in Southern Brazil and South Australia. *PLoS ONE*. 2018;13(6):e0198769.
9. Cao Y, Zhen S, Taylor AW, Appleton S, Atlantis E, Shi Z. Magnesium Intake and Sleep Disorder Symptoms: Findings from the Jiangsu Nutrition Study of Chinese Adults at Five-Year Follow-Up. *Nutrients*. 2018 Sep 21;10(10).
10. Constantine S, Roach D, Liberali S, Kiermeier A, Sarkar P, Jannes J, Sambrook P, Anderson P, Beltrame J. Carotid Artery Calcification on Orthopantomograms (CACO Study) - is it indicative of carotid stenosis? *Aust Dent J*. 2018 Sep 14. doi: 10.1111/adj.12651. [Epub ahead of print].
11. Gyawali P, Martin SA, Heilbronn LK, Vincent AD, Taylor AW, Adams RJT, O'Loughlin PD, Wittert GA. The role of sex hormone-binding globulin (SHBG), testosterone, and other sex steroids, on the development of type 2 diabetes in a cohort of community-dwelling middle-aged to elderly men. *Acta Diabetol*. 2018 Aug;55(8):861-872.
12. Lang CJ, Reynolds AC, Appleton SL, Taylor AW, Gill TK, McEvoy RD, Ferguson SA, Adams RA. Sociodemographic and behavioural correlates of social jetlag in Australian adults: results from the 2016 National Sleep Health Foundation Study. *Sleep Med*. 2018 Nov;51:133-139.
13. Lamin V, Jaghooori A, Jakobczak R, Stafford I, Heresztyn T, Worthington M, Edwards J, Viana F, Stuklis R, Wilson DP, Beltrame JF. Mechanisms Responsible for Serotonin Vascular Reactivity Sex Differences in the Internal Mammary Artery. *J Am Heart Assoc*. 2018 Jul 9;7(14).
14. Mehta PK, Beltrame JF. Myocardial infarction with non-obstructive coronary arteries: a humbling diagnosis in 2018. *Heart*. 2018 Nov 27. pii: heartjnl-2018-314012.
15. Melaku YA, Appleton SL, Gill TK, Ogbo FA, Buckley E, Shi Z, Driscoll T, Adams R, Cowie BC, Fitzmaurice C. Incidence, prevalence, mortality, disability-adjusted life years and risk factors of cancer in Australia and comparison with OECD countries, 1990-2015: findings from the Global Burden of Disease Study 2015. *Cancer Epidemiol*. 2018 Feb;52:43-54.
16. Melaku YA, Gill TK, Taylor AW, Adams R, Shi Z, Worku A. Associations of childhood, maternal and household dietary patterns with childhood stunting in Ethiopia: proposing an alternative and plausible dietary analysis method to dietary diversity scores. *Nutr J*. 2018 Jan 29;17(1):14.
17. Melaku YA, Gill TK, Taylor AW, Appleton SL, Gonzalez-Chica D, Adams R, Achoki T, Shi Z, Renzaho A. Trends of mortality attributable to child and maternal undernutrition, overweight/obesity and dietary risk factors of non-communicable diseases in sub-Saharan Africa, 1990-2015: findings from the Global Burden of Disease Study 2015. *Public Health Nutr*. 2018 Dec 4:1-14.
18. Melaku YA, Renzaho A, Gill TK, Taylor AW, Dal Grande E, de Courten B, Baye E, Gonzalez-Chica D, Hyppönen E, Shi Z, Riley M, Adams R, Kinfu Y. Burden and trend of diet-related non-communicable diseases in Australia and comparison with 34 OECD countries, 1990-2015: findings from the Global Burden of Disease Study 2015. *Eur J Nutr*. 2018 Mar 7. doi: 10.1007/s00394-018-1656-7. [Epub ahead of print] PubMed PMID: 29516222.
19. Melaku YA, Wassie MM, Gill TK, Zhou SJ, Tessema GA, Amare AT, Lakew Y, Hiruye A, Bekele TH, Worku A, Seid O, Endris K, Lemma F, Tesfay FH, Yirsaw BD, Deribe K, Adams R, Shi Z, Misganaw A, Deribew A. Burden of disease attributable to suboptimal diet, metabolic risks and low physical activity in Ethiopia and comparison with Eastern sub-Saharan African countries, 1990-2015: findings from the Global Burden of Disease Study 2015. *BMC Public Health*. 2018 Apr 25;18(1):552.
20. Myles H, Myles N, Coetzer CLC, Adams R, Chandratilleke M, Liu D, Mercer J, Vakulin A, Vincent A, Wittert G, Galletly C. Cognition in schizophrenia improves with treatment of severe obstructive sleep apnoea: A pilot study. *Schizophr Res Cogn*. 2018 Nov 6;15:14-20.
21. Myles H, Vincent A, Myles N, Adams R, Chandratilleke M, Liu D, Mercer J, Vakulin A, Wittert G, Galletly C. Obstructive sleep apnoea is more prevalent in men with schizophrenia compared to general population controls: results of a matched cohort study. *Australasian Psychiatry*. 2018 Dec;26(6):600-603.
22. NCD Risk Factor Collaboration (NCD-RisC) including Adams RJ. Contributions of mean and shape of blood pressure distribution to worldwide trends and variations in raised blood pressure: a pooled analysis of 1018 population-based measurement studies with 88.6 million participants. *Int J Epidemiol*. 2018;47:872-883.
23. Ong P, Camici PG, Beltrame JF, Crea F, Shimokawa H, Sechtem U, Kaski JC, Baïreys Merz CN; Coronary Vasomotion Disorders International Study Group (COVADIS). International standardization of diagnostic criteria for microvascular angina. *Int J Cardiol*. 2018 Jan 1;250:16-20.
24. Ong P, Camici PG, Beltrame JF, Crea F, Shimokawa H, Sechtem U, Kaski JC, Noel Baïreys Merz C; Coronary Vasomotion Disorders International Study Group (COVADIS). Response to letter from Picichè: The microvascular network connecting extracardiac arteries to the heart. *Int J Cardiol*. 2018 May 15;259:56.
25. Pasupathy S, Beltrame JF. Refining the diagnosis of myocardial infarction with nonobstructive coronary arteries. *Coron Artery Dis*. 2018 Sep;29(6):528-529.
26. Pasupathy S, Tavella R, Beltrame JF. Response by Pasupathy et al to Letters Regarding Article, "Early Use of N-acetylcysteine (NAC) With Nitrate Therapy in Patients Undergoing Primary Percutaneous Coronary Intervention for ST-Segment Elevation Myocardial Infarction Reduces Myocardial Infarct Size (The NACIAM Trial [N-Acetylcysteine in Acute Myocardial Infarction])". *Circulation*. 2018 Mar 27;137(13):1424-1425.
27. Ruel G, Martin SA, Lévesque JF, Wittert GA, Adams RJ, Appleton SL, Shi Z, Taylor AW. Association between multimorbidity and undiagnosed obstructive sleep apnea severity and their impact on quality of life in men over 40 years old. *Glob Health Epidemiol Genom*. 2018 Jun 4;3:e10.
28. Safdar B, Spatz ES, Dreyer RP, Beltrame JF, Lichtman JH, Spertus JA, Reynolds HR, Geda M, Bueno H, Dziura JD, Krumholz HM, D'Onofrio G. Presentation, Clinical Profile, and Prognosis of Young Patients With Myocardial Infarction With Nonobstructive Coronary Arteries (MINOCA): Results From the VIRGO Study. *J Am Heart Assoc*. 2018 Jun 28;7(13).
29. Sheikh AR, Zeitz CJ, Rajendran S, Di Fiore DP, Tavella R, Beltrame JF. Clinical and coronary haemodynamic determinants of recurrent chest pain in patients without obstructive coronary artery disease - A pilot study. *Int J Cardiol*. 2018 Sep 15;267:16-21.

PUBLICATIONS 2018

30. Sidharta SL, Baillie TJ, [Howell S](#), Nicholls SJ, Montarello N, Honda S, Shishikura D, Delacroix S, Kim S, [Beltrame JF](#), Psaltis PJ, Worthley SG, Worthley MI. Evaluation of human coronary vasodilator function predicts future coronary atheroma progression. *Heart*. 2018 Sep;104(17):1439-1446.
31. Smolderen KG, Gosch K, Patel M, Jones WS, Hirsch AT, [Beltrame J](#), Fitridge R, Shishehbor MH, Denollet J, Vriens P, Heyligers J, Stone MED N, Aronow H, Abbott JD, [Labrosciano C](#), Tutein-Nolthenius R, A Spertus J. PORTRAIT (Patient-Centered Outcomes Related to Treatment Practices in Peripheral Arterial Disease: Investigating Trajectories): Overview of Design and Rationale of an International Prospective Peripheral Arterial Disease Study. *Circ Cardiovasc Qual Outcomes*. 2018 Feb;11(2):e003860.
32. [Tavella R](#), [Beltrame JF](#). Normal coronary angiography: blessing or curse? *Eur Heart J Qual Care Clin Outcomes*. 2018 Apr 1;4(2):76-78.
33. [Tavella R](#), [Pasupathy S](#), [Beltrame JF](#). MINOCA - A personalised medicine approach. *Int J Cardiol*. 2018 Sep 15;267:54-55.
34. [Thompson MQ](#), Theou O, [Adams R](#), [Tucker G](#), [Visvanathan R](#). Frailty state transitions and associated factors in South Australian older adults. *Geriatr Gerontol Int*. 2018 Nov;18(11):1549-1555.
35. [Thompson MQ](#), Theou O, [Tucker G](#), [Adams R](#), [Visvanathan R](#). Frailty prevalence in Australia: Findings from four pooled Australian cohort studies. *Aus J Aging*. 2018; 37(2):155-158.
36. Veronesi G, Zambon A, [Beltrame JF](#), Gianfagna F, Corrao G, Ferrario MM. Monitoring quality of care in acute myocardial infarction patients using retrospective registry data. *Int J Qual Health Care*. 2018 Jun 1;30(5):344-350.
37. [Zalewski PD](#), [Beltrame JF](#), [Wawer AA](#), [Abdo AI](#), Murgia C. Roles for endothelial zinc homeostasis in vascular physiology and coronary artery disease. *Crit Rev Food Sci Nutr*. 2018 Sep 10:1-15.
7. [Gupta AD](#), Wilson DH. Botulinum toxin for spasticity: a case for change to the Pharmaceutical Benefits Scheme. *Med J Aust*. 29 Jan 2018; 208 (9): 379-381.
8. [Gupta AD](#), Chu WH, [Howell S](#), Chakraborty S, [Koblar S](#), [Visvanathan R](#), Cameron I, Wilson D. A systematic review: efficacy of botulinum toxin in walking and quality of life in post-stroke lower limb spasticity. *Systematic Reviews*. 2018; 7:1. <https://doi.org/10.1186/s13643-017-0670-9>
9. Harvey J, Dodd L, Hampton C, Bronca M, Laubscher S, James A, Sayas A, Willcourt M, Hillier S, Worley A, Moey A, [Jannes J](#), Kleinig T. Centralisation of Adelaide stroke services is associated with increased utilisation of endovascular thrombectomy, but no change in reperfusion time metrics. *Int J Stroke*. 2018; 13(1S):24.
10. Levi C, Lillicrap T, Harman S *et al.* including Kleinig T, [Koblar S](#), [Hamilton-Bruce MA](#). Ex-vivo generation of plasmin from patients with acute ischaemic stroke is predictive of successful thrombolysis. *J Neurol Neurosurg Psychiatry*. 2018; 89:A6. <http://dx.doi.org/10.1136/jnnp-2018-ANZAN.11>
11. Lillicrap T, Harman S, Draxler D, Niego B'E, Ho H, McCutcheon F, Kleinig T, [Koblar S](#), [Hamilton-Bruce A](#), Garcia-Esperon C, Lincz L, Bivard A, Attia J, Maguire J, Holliday E, Levi C, Medcalf R. Ex-vivo generation of plasmin from patients with acute ischaemic stroke is predictive of successful thrombolysis. *Int J Stroke*. 2018; 13(1S):4.
12. Mahadevan J, Kleinig T, [Jannes J](#). Fat embolism: an important differential diagnosis to multi-embolic stroke following Coronary Artery Bypass grafting (CABG). *Int J Stroke*. 2018; 13(1S):46.
13. Majd S, [Koblar S](#), Power J. Compound C enhances tau phosphorylation at Serine396 via PI3K activation in an AMPK and rapamycin independent way in differentiated SH-SY5Y cells. *Neurosci Lett*. 2018 Mar 23; 670:53-61.
14. Majd S, Majd Z, [Koblar S](#), Power J. Beta estradiol and norepinephrine treatment of differentiated SH-SY5Y cells enhances tau phosphorylation at (Ser₃₉₆) and (Ser₂₆₂) via AMPK but not mTOR signaling pathway. *Mol Cell Neurosci*. 2018 Apr; 88:201-211.
15. [Milton AG](#), Kleinig T, [Young A-M](#), Nagpal A, Kim S, [Koblar SA](#), [Hamilton-Bruce MA](#), [Jannes J](#). Central Adelaide Local Health Network – Stroke Unit Access Update. *Int J Stroke* 2018; 13(1S):47.
16. Nagpal A, Hillier S, [Milton AG](#), [Hamilton-Bruce MA](#), [Koblar SA](#). PERSPECTIVES: Stroke survivors' perspectives on the design of an early phase cellular therapy study for chronic ischemic stroke. *Int J Stroke*. 2018; 13(1S):18.
17. Nagpal A, Milte R, Kim SW, Hillier S, [Milton AG](#), [Hamilton-Bruce MA](#), Ratcliffe J, [Koblar SA](#). Economic evaluation of stem cell therapies in neurological diseases: a systematic review. *Int J Stroke*. 2018; 13(1S):41.
18. Waters MJ, Cheong E, [Jannes J](#), Kleinig T. Ischaemic stroke may symptomatically manifest as migraine aura. *J Clin Neurosci*. 2018 Sep; 55:62-64.

NEUROLOGY UNIT, TQEH

1. Cheong E, Toner P, Dowie G, [Jannes J](#), Kleinig T. Evaluation of a CTA-Triage Based Transient Ischemic Attack Service: A Retrospective Single Center Cohort Study. *J Stroke Cerebrovasc Dis*. 2018; 27(12):3436-3442.
2. Cole JW, Xu H, Ryan K *et al.*, including [Jannes J](#) and Levi C. Genetics of the thrombomodulin-endothelial cell protein C receptor system and the risk of early-onset ischemic stroke. *PLoS One*. 2018 Nov 1; 13(11):e0206554.
3. [Constantine S](#), [Roach D](#), Liberali S, Kiermeier A, [Sarkar P](#), [Jannes J](#), Sambrook P, Anderson P, [Beltrame J](#). Carotid Artery Calcification on Orthopantomograms (CACO Study) - is it indicative of carotid stenosis? *Aust Dent J*. 2018 Sep 14. doi: 10.1111/adj.12651. [Epub ahead of print]
4. De Sciscio M, Kleinig T, De Sciscio P, [Jannes J](#). Cortical cerebral microbleeds are common following cardiac surgery, especially valve replacement, however distribution ratio distinguishes from cerebral amyloid angiopathy. *Int J Stroke*. 2018; 13(1S):24.
5. Giarola BF, Leyden J, Castle S, [Jannes J](#), Anderson C, Newbury J, Kleinig T. Transient Ischaemic Attack Rarely Precedes Stroke in a Cohort with Low Proportions of Large Artery Atherosclerosis: A Population-Based Study. *Cerebrovasc Dis Extra*. 2018; 8(2):101-105.
6. [Graham CM](#), [Kremer KL](#), [Koblar SA](#), [Hamilton-Bruce MA](#), [Pyecroft SB](#). Dental Pulp Stem Cells - Exploration in a Novel Animal Model: the Tasmanian Devil (*Sarcophilus harrisii*). *Stem Cell Rev*. 2018; 14(4):500–509. <https://doi.org/10.1007/s12015-018-9814-0>

PSYCHIATRY, THE UNIVERSITY OF ADELAIDE, DISCIPLINE OF

1. [Clark SR](#), [Schubert KO](#), [Olagunju A](#), [Lyrtzis E](#), Baune B. Cognitive and Functional Assessment of Psychosis Stratification Study (CoFAPSS): Rationale, Design, and Characteristics. *Frontiers in Psychiatry*. 03 Dec 2018;9:662-662.

2. [Clark SR](#), [Schubert OK](#), [Olagunju AT](#), [Lyrtzis EA](#), Watson D, Baune BT. Trajectories in response to Aripiprazole Maintenance study: six-month follow up (RANZCP Abstracts). *Aust N Z J Psychiatry*. 2018; 52:52-53.
3. [Clark SR](#), Kisely S, Parker S, Harris A, Suetani S, Siskind D. Building partnerships in academic psychiatry: a guide for new investigators and the scholarly project (RANZCP Abstracts). *Aust N Z J Psychiatry*. 2018;52:54-55.
4. [Dawson J](#), [Clark S](#), Sluggert J, Procter N, Bell J. Is the higher incidence of clozapine induced myocarditis in Australia due to awareness and monitoring? *Schizophrenia Research*. 01 Nov 2018;201:426-427.
5. Kalman JL, Papiol S, Forstner AJ, Heilbronner U, Degenhardt F, Strohmaier J, Adli M, Adorjan K, Akula N, Alda M, Anderson-Schmidt H, Andlauer TF, Angheliescu IG, Ardu R, Arias B, Arolt V, Aubry JM, Backlund L, Bartholdi K, Bauer M, Baune BT, Becker T, Bellivier F, Benabarre A, Bengesser S, Bhattacharjee AK, Biernacka JM, Birner A, Brichant-Petitjean C, Budde M, Cervantes P, Chillotti C, Cichon S, [Clark SR](#), Colom F, Comes AL, Cruceanu C, Czerski PM, Dannowski U, Dayer A, Del Zompo M, DePaulo JR, Dietrich DE, Étain B, Ethofer T, Falkai P, Fallgatter A, Figge C, Flatau L, Folkerts H, Frisen L, Frye MA, Fullerton JM, Gade K, Gard S, Garnham JS, Goes FS, Grigoriu-Serbanescu M, Gryaznova A, Hake M, Hauser J, Herms S, Hoffmann P, Hou L, Jäger M, Jamain S, Jiménez E, Juckel G, Kahn JP, Kassem L, Kelsoe J, Kittel-Schneider S, Kliwicz S, Klohn-Sagatholislam F, Koller M, König B, Konrad C, Lackner N, Laje G, Landén M, Lang FU, Lavebratt C, Leboyer M, Leckband SG, Maj M, Manchia M, Martinsson L, McCarthy MJ, McElroy SL, McMahon FJ, Mitchell PB, Mitjans M, Mondimore FM, Monteleone P, Nieratschker V, Nievergelt CM, Novák T, Ösby U, Pfenning A, Potash JB, Reich-Erkelenz D, Reif A, Reimer J, Reininghaus E, Reitt M, Ripke S, Rouleau GA, Rybakowski JK, Schalling M, Scherk H, Schmauß M, Schofield PR, [Schubert KO](#), Schulte EC, Schulz S, Senner F, Severino G, Shekhtman T, Shilling PD, Simhandl C, Slaney CM, Spitzer C, Squassina A, Stamm T, Stegmaier S, Stierl S, Stopkova P, Thiel A, Tighe SK, Tortorella A, Turecki G, Vieta E, Veeh J, von Hagen M, Wigand ME, Wiltfang J, Witt S, Wright A, Zandi PP, Zimmermann J, Nöthen M, Rietschel M, Schulze TG. Investigating polygenic burden in age at disease onset in bipolar disorder: Findings from an international multicentric study. *Bipolar disorders*. 2018 Jun 28;doi: 10.1111/bdi.12659.
6. O'Donoghue B, Siskind D, Warren N, [Clark SR](#). Clozapine: when to start, how to augment and guidelines for management (RANZCP Abstracts). *Aust N Z J Psychiatry*. 2018;52:140–1.
7. [Olagunju A](#), [Clark S](#), Baune B. Clozapine and Psychosocial Function in Schizophrenia: A Systematic Review and Meta-Analysis. *CNS Drugs*. 2018 28 Aug;32(11):1011-1023.
8. Stacey D, [Schubert KO](#), [Clark S](#), Amare A, Milanesi E, Maj C, Leckband S, Shekhtman T, Kelsoe J, Gurwitz D, et al. A gene co-expression module implicating the mitochondrial electron transport chain is associated with long-term response to lithium treatment in bipolar affective disorder *Translational Psychiatry*. 2018; 8(1):183-1-183-11.
9. Reinbold CS, Forstner AJ, Hecker J, Fullerton JM, Hoffmann P, Hou L, Heilbronner U, Degenhardt F, Adli M, Akiyama K, Akula N, Ardu R, Arias B, Backlund L, Benabarre A, Bengesser S, Bhattacharjee AK, Biernacka JM, Birner A, Marie-Claire C, Cervantes P, Chen GB, Chen HC, Chillotti C, [Clark SR](#), Colom F, Cousins DA, Cruceanu C, Czerski PM, Dayer A, Étain B, Falkai P, Frisen L, Gard S, Garnham JS, Goes FS, Grof P, Gruber O, Hashimoto R, Hauser J, Herms S, Jamain S, Jiménez E, Kahn JP, Kassem L, Kittel-Schneider S, Kliwicz S, König B, Kusumi I, Lackner N, Laje G, Landén M, Lavebratt C, Leboyer M, Leckband SG, López Jaramillo CA, MacQueen G, Manchia M, Martinsson L, Mattheisen M, McCarthy MJ, McElroy SL, Mitjans M, Mondimore FM, Monteleone P, Nievergelt CM, Ösby U, Ozaki N, Perlis RH, Pfenning A, Reich-Erkelenz D, Rouleau GA, Schofield PR, [Schubert KO](#), Schweizer BW, Seemüller F, Severino G, Shekhtman T, Shilling PD, Shimoda K, Simhandl C, Slaney CM, Smoller JW, Squassina A, Stamm TJ, Stopkova P, Tighe SK, Tortorella A, Turecki G, Volkert J, Witt SH, Wright AJ, Young LT, Zandi PP, Potash JB, DePaulo JR, Bauer M, Reininghaus E, Novák T, Aubry JM, Maj M, Baune BT, Mitchell PB, Vieta E, Frye MA, Rybakowski JK, Kuo PH, Kato T, Grigoriu-Serbanescu M, Reif A, Del Zompo M, Bellivier F, Schalling M, Wray NR, Kelsoe JR, Alda M, McMahon FJ, Schulze TG, Rietschel M, Nöthen MM, Cichon S. Analysis of the influence of microRNAs in Lithium Response in Bipolar Disorder *Frontiers in Psychiatry*. 2018;207-1-207-9.
10. International Consortium on Lithium Genetics (ConLi+Gen), Amare AT, [Schubert KO](#), Hou L, [Clark SR](#), Papiol S, Heilbronner U, Degenhardt F, Tekola-Ayele F, Hsu YH, Shekhtman T, Adli M, Akula N, Akiyama K, Ardu R, Arias B, Aubry JM, Backlund L, Bhattacharjee AK, Bellivier F, Benabarre A, Bengesser S, Biernacka JM, Birner A, Brichant-Petitjean C, Cervantes P, Chen HC, Chillotti C, Cichon S, Cruceanu C, Czerski PM, Dalkner N, Dayer A, Del Zompo M, DePaulo JR, Étain B, Falkai P, Forstner AJ, Frisen L, Frye MA, Fullerton JM, Gard S, Garnham JS, Goes FS, Grigoriu-Serbanescu M, Grof P, Hashimoto R, Hauser J, Herms S, Hoffmann P, Hofmann A, Jamain S, Jiménez E, Kahn JP, Kassem L, Kuo PH, Kato T, Kelsoe J, Kittel-Schneider S, Kliwicz S, König B, Kusumi I, Laje G, Landén M, Lavebratt C, Leboyer M, Leckband SG, Tortorella A, Manchia M, Martinsson L, McCarthy MJ, McElroy S, Colom F, Mitjans M, Mondimore FM, Monteleone P, Nievergelt CM, Nöthen MM, Novák T, O'Donovan C, Ozaki N, Ösby U, Pfenning A, Potash JB, Reif A, Reininghaus E, Rouleau GA, Rybakowski JK, Schalling M, Schofield PR, Schweizer BW, Severino G, Shilling PD, Shimoda K, Simhandl C, Slaney CM, Squassina A, Stamm T, Stopkova P, Maj M, Turecki G, Vieta E, Volkert J, Witt S, Wright A, Zandi PP, Mitchell PB, Bauer M, Alda M, Rietschel M, McMahon FJ, Schulze TG, Baune BT. Association of polygenic score for schizophrenia and HLA antigen and inflammation genes with response to lithium in bipolar affective disorder: a genome-wide association study *JAMA Psychiatry*. 2018;75(1):65-74.
11. [Schubert K](#), Stacey D, Arentz G, [Clark S](#), Air T, Hoffmann P, Baune B. Targeted proteomic analysis of cognitive dysfunction in remitted major depressive disorder: Opportunities of multi-omics approaches towards predictive, preventive, and personalized psychiatry *Journal of Proteomics*. 2018;188:63-70.

RESPIRATORY MEDICINE UNIT, TQEH

1. Elgar NJ, [Smith BJ](#). Mandatory reporting by doctors of medically unsafe drivers is unpopular and poorly adhered to: a survey of sleep physicians and electro-physicians. *Intern Med J*. 2018 Mar;48(3):293-300.
2. [Kopsaftis ZA](#), Sulaiman NS, Mountain OD, Carson-Chahhoud KV, Phillips PA, [Smith BJ](#). Short-acting bronchodilators for the management of acute exacerbations of chronic obstructive pulmonary disease in the hospital setting: systematic review. *Syst Rev*. 2018 Nov 29;7(1):213.

3. Lawton K, Royals K, Carson-Chahhoud KV, Campbell F, Smith BJ. Nurse-led versus doctor-led care for bronchiectasis. *Cochrane Database Syst Rev*. 2018 Jun 20;6:CD004359. doi: 10.1002/14651858.CD004359.pub2. [Epub ahead of print]
4. Thiruvankatarajan V, Maycock T, Grosser D, Currie J. Anaesthetic management for endobronchial valve insertion: lessons learned from a single centre retrospective series and a literature review. *BMC Anesthesiology*. 2018 Dec; 18(1):206.
5. van Agteren JEM, Lawn S, Bonevski B, Smith BJ. Kick.it: The development of an evidence-based smoking cessation smartphone app. *Transl Behav Med*. 2018 Mar 1;8(2):243-267.

RHEUMATOLOGY UNIT, TQEH

1. Aitken D, Laslett LL, Cai G, Hill C, March L, Wluka AE, Wang Y, Blizzard L, Cicuttini F, Jones G. A protocol for a multicentre, randomised, double-blind, placebo-controlled trial to compare the effect of annual infusions of zoledronic acid to placebo on knee structural change and knee pain over 24 months in knee osteoarthritis patients - ZAP2. *BMC Musculoskelet Disord*. 2018 Jul 18;19(1):217.
2. Appleton S, Gill T, Taylor A, McEvoy D, Shi Z, Hill C, Reynolds A, Adams RJ. Influence of Gender on Associations of Obstructive Sleep Apnea Symptoms with Chronic Conditions and Quality of Life. *Int. J Environ Res Public Health*. 2018, 15(5), 930.
3. Bourne A, Johnston RV, Cyril S, Briggs AM, Clavisi O, Duque G, Harris IA, Hill C, Hiller C, Kamper SJ, Latimer J, Lawson A, Lin C, Maher C, Perriman D, Richards BL, Smitham P, Taylor WJ, Whittle S, Buchbinder R. A scoping review of priority-setting of research topics for musculoskeletal conditions. *BMJ Open*. 2018 Dec 16;8(12):e023962.
4. Brito-Zerón P, Acar-Denizli N, Ng WF, Zeher M, Rasmussen A, Mandl T, Seror R, Li X, Baldini C, Gottenberg JE, Danda D, Quartuccio L, Priori R, Hernandez-Molina G, Armagan B, Kruize AA, Kwok SK, Kvarnström M, Praprotnik S, Sène D, Bartoloni E, Solans R, Rischmueller M, Suzuki Y, Isenberg DA, Valim V, Wiland P, Nordmark G, Fraile G, Bootsma H, Nakamura T, Giacomelli R, Devauchelle-Pensec V, Knopf A, Bombardieri M, Trevisani VF, Hammenfors D, Pasoto SG, Retamozo S, Gheita TA, Atzeni F, Morel J, Vollenweider C, Horvath IF, Sivils KL, Olsson P, De Vita S, Sánchez-Guerrero J, Kilic L, Wahren-Herlenius M, Mariette X, Ramos-Casals M; Sjögren Big Data Consortium. How immunological profile drives clinical phenotype of primary Sjögren's syndrome at diagnosis: analysis of 10,500 patients (Sjögren Big Data Project). *Clin Exp Rheumatol*. 2018 May-Jun;36 Suppl 112(3):102-112.
5. Caughey GE, Gabb GM, Ronson S, Ward M, Beukelman T, Hill CL, Limaye V. Association of Statin Exposure With Histologically Confirmed Idiopathic Inflammatory Myositis in an Australian Population. *JAMA Intern Med*. 2018 Sep 1;178(9):1224-1229.
6. Chua AC, Venkataraman K, Whittle SL. Occipital condyle syndrome mimicking giant cell arteritis as the first manifestation of disseminated malignancy. *Internal Medicine Journal* 2018; 48(9): 1163-4.
7. Hall S, Nash P, Rischmueller M, Bossingham D, Bird P, Cook N, Witcombe D, Soma K, Kwok K, Thirunavukkarasu K. Tofacitinib, an Oral Janus Kinase Inhibitor: Pooled Efficacy and Safety Analyses in an Australian Rheumatoid Arthritis Population. *Rheumatol Ther*. 2018 Dec;5(2):383-401.
8. Harris VM, Sharma R, Cavett J, Kurien BT, Liu K, Koelsch KA, Rasmussen A, Radfar L, Lewis D, Stone DU, Kaufman CE, Li S, Segal B, Wallace DJ, Weisman MH, Venuturupalli S, Kelly JA, Alarcon-Riquelme ME, Pons-Estel B, Jonsson R, Lu X, Gottenberg JE, Anaya JM, Cunningham-Graham DS, Huang AJW, Brennan MT, Hughes P, Alevizos I, Miceli-Richard C, Keystone EC, Bykerk VP, Hirschfield G, Xie G, Siminovitch KA, Ng WF, Nordmark G, Bucher SM, Eriksson P, Omdal R, Rhodus NL, Rischmueller M, Rohrer M, Wahren-Herlenius M, Witte T, Mariette X, Lessard CJ, Harley JB, Sivils KL, Scofield RH. Corrigendum to "Klinefelter's syndrome (47,XXY) is in excess among men with Sjögren's syndrome" [Clin. Immunol. 168 (2016) 25-29]. *Clin Immunol*. 2018 Feb;187:137-138.
9. Khoo T, Caughey G, Hill C, Limaye V. Proton pump inhibitors are not associated with inflammatory myopathies: A case control study. *Muscle & Nerve*. 2018 Dec; 58(6):855-857.
10. Kronbichler A, Kerschbaum J, Gopaluni S, Tieu J, Alberici F, Jones RB, Smith RM, Jayne DRW. Trimethoprim-sulfamethoxazole prophylaxis prevents severe/life-threatening infections following rituximab in antineutrophil cytoplasm antibody-associated vasculitis. *Annals of the Rheumatic Diseases*, 2018 Oct;77(10), 1440-1447.
11. Lee JL, Sinnathurai P, Buchbinder R, Hill C, Lassere M, March L. Biologics and cardiovascular events in inflammatory arthritis: a prospective national cohort study. *Arthritis Res Ther*. 2018 Aug 7;20(1):171. doi: 10.1186/s13075-018-1669.
12. Lowe J, Briggs A, Whittle S, Hoon E, Stephenson M. Effectiveness of probiotics in the management of inflammatory arthritis: a systematic review protocol. *JBIC Database System Rev Implement Rep*. 2018 Dec;16(12):2295-2303.
13. Ninan JV, Lester S, Hill CL. Diagnosis and management of giant cell arteritis: an Asia-Pacific perspective. *Int J Rheum Dis*. 2018 Apr 17. [Epub ahead of print]
14. Paramasivan S, Lester S, Lau A, Ou J, Psaltis AJ, Wormald PJ, Vreugde S. Tertiary lymphoid organs: A novel target in patients with chronic rhinosinusitis. *J Allergy Clin Immunol*. 2018 Nov;142(5):1673-1676.
15. Pisaniello HL, Lester S, Gonzalez-Chica D, Stocks N, Longo M, Sharplin GR, Dal Grande E, Gill TK, Whittle SL, Hill CL. Gout prevalence and predictors of urate-lowering therapy use: results from a population-based study. *Arthritis Res Ther*. 2018 Jul 11;20(1):143.
16. Sinnathurai P, Buchbinder R, Hill C, Lassere M, March L. Comorbidity in psoriatic arthritis and rheumatoid arthritis. *Intern Med J*. 2018 Nov;48(11):1360-1368.
17. Vincent FB, Kandane-Rathnayake R, Hoi AY, Slavin L, Godsell JD, Kitching AR, Harris J, Nelson CL, Jenkins AJ, Chrysostomou A, Hibbs ML, Kerr PG, Rischmueller M, Mackay F, Morand EF. Urinary B-cell-activating factor of the tumour necrosis factor family (BAFF) in systemic lupus erythematosus. *Lupus*. 2018 Nov;27(13):2029-2040.
18. Vincent FB, Lang T, Kandane-Rathnayake R, Downie-Doyle S, Morand EF, Rischmueller M. Serum and urinary macrophage migration inhibitory factor (MIF) in primary Sjögren's syndrome. *Joint Bone Spine*. 2018 Jul 17. pii: S1297-319X(18)30132-5. [Epub ahead of print]

SURGERY, THE UNIVERSITY OF ADELAIDE, DISCIPLINE OF AT TQEH/DIVISION OF SURGERY, TQEH

1. Abbott S, Hewett P, Cooper J, Ruszkiewicz A. Idiopathic myointimal hyperplasia of the mesenteric veins: a rare differential to be considered in idiopathic colitis. *ANZ Journal of Surgery*. 2018 Mar; 88(3):242-243.
2. Allen J, Rey-Conde T, North JB, Kruger P, Babidge WJ, Wysocki AP, Ware RS, Veerman JL, Maddern GJ. Processes of care in surgical patients who died with hospital-acquired infections in Australian hospitals. *J Hosp Infect*. 2018 May;99(1):17-23.
3. Atukorale YN, Lambert RS, Cameron AL, Maddern GJ. Stem cell treatments within surgical specialities: what is the evidence? *ANZ J Surg*. 2018 Jan;88(1-2):11-12.
4. Bardy JJ, Sarovich DS, Price EP, Steinig E, Tong S, Drilling A, Ou J, Vreugde S, Wormald PJ, Psaltis A. Staphylococcus aureus from patients with chronic rhinosinusitis show minimal genetic association between polyp and non-polyp phenotypes 06 Biological Sciences 0604 Genetics. *BMC Ear, Nose and Throat Disorders*. 2018;18(1).
5. Beckmann K, O'Callaghan M, Vincent A, Roder D, Millar J, Evans S, McNeil J, Moretti K. Australian validation of the Cancer of the Prostate Risk Assessment Post-Surgical score to predict biochemical recurrence after radical prostatectomy. *ANZ J Surg*. 2018 Mar;88(3):E183-E188.
6. Chen PG, Floreani S, Wormald PJ. The utility of enlarging symptomatic nasal septal perforations. *Ear, Nose and Throat Journal*. 2018;97(3):E41-E41.
7. Christiansen D, Earnest-Silveira L, Chua B, Boo I, Drummer HE, Grubor-Bauk B, Gowans EJ, Jackson DC, Torresi J. Antibody Responses to a Quadrivalent Hepatitis C Viral-Like Particle 1 Vaccine Adjuvanted with Toll-Like Receptor 2 Agonists. *Viral Immunology*. 2018 31(4):338-343.
8. Christiansen D, Earnest-Silveira L, Chua B, Meuleman P, Boo I, Grubor-Bauk B, Jackson DC, Keck ZY, Fong SKH, Drummer HE, Gowans EJ, Torresi J. Immunological responses following administration of a genotype 1a/1b/2/3a quadrivalent HCV VLP vaccine. *Scientific Reports*. 2018; 8(1):6483.
9. Clarke NAR, Kanhere HA, Trochsler MI, Maddern GJ. Liver resection for non-colorectal, non-neuroendocrine metastases. *ANZ J Surg*. 2018; 88(4): E313-E317
10. Curragh DS, Psaltis AJ, Tan NC, Selva D. Prelacrimal approach for nasolacrimal duct excision in the management of lacrimal system tumours. *Orbit (London)*. 2018 Sep 20:1-5.
11. Davis S, Babidge W, Kiermeier A, Aitken R, Maddern G. Perioperative Mortality Following Bariatric Surgery in Australia. *Obes Surg*. 2018 May;28(5):1329-1334.
12. Davis SS, Babidge WJ, Kiermeier A, Aitken RJ, Maddern GJ. Perioperative Mortality Following Oesophagectomy and Pancreaticoduodenectomy in Australia. *World J Surg*. 2018 Mar;42(3):742-748
13. Davis SS, Babidge WJ, McCulloch GAJ, Maddern GJ. Fatal flaws in clinical decision making. *ANZ J Surg*. 2018 Nov 29. doi: 10.1111/ans.14955. [Epub ahead of print] PubMed PMID: 30497100.
14. Eldredge TA, Myers JC, Kiroff GK, Shenfine J. Detecting Bile Reflux-the Enigma of Bariatric Surgery. *Obes Surg*. 2018 Feb;28(2):559-566.
15. Eldredge TA, Myers JC, Kiroff GK, Shenfine J. Response to a Letter to the Editor Re: Detecting Bile Reflux-the Enigma of Bariatric Surgery. *Obes Surg*. 2018 Jul;28(7):2052-2052.
16. Gibb C, Fitridge R. Smoking and the surgeon: no more excuses. *ANZ J Surg*. 2018;88(9):815-6.
17. Goggin RK, Bennett CA, Bassiouni A, Bialasiewicz S, Vreugde S, Wormald PJ, Psaltis A. Comparative viral sampling in the sinonasal passages; Different viruses at different sites. *Frontiers in Cellular and Infection Microbiology*. 2018;8(SEP).
18. Gostlow H, Vega CV, Marlow N, Babidge W, Maddern G. Do Surgeons React?: A Retrospective Analysis of Surgeons' Response to Harassment of a Colleague During Simulated Operating Theatre Scenarios. *Ann Surg*. 2018 Aug;268(2):277-281.
19. Gupta AK, Kanhere HA, Maddern GJ, Trochsler MI. Liver resection in octogenarians: are the outcomes worth the risk? *ANZ J Surg*. 2018 Nov;88(11):E756-E760.
20. Ha T, Valentine R, Moratti S, Hanton L, Robinson S, Wormald PJ. The efficacy of a novel budesonide chitosan gel on wound healing following endoscopic sinus surgery. *International Forum of Allergy and Rhinology*. 2018;8(3):435-443.
21. Harley B, Wickremesekera A, Tan N, Davies E, Robinson S, Baguley C, Wormald PJ. Endoscopic transnasal repair of a spontaneous cerebrospinal fluid fistula in the foramen rotundum. *Journal of Clinical Neuroscience*. Epub 2018 Nov 3.
22. Jones CR, McCulloch GAJ, Ludbrook G, Babidge WJ, Maddern GJ. Deaths in Incorrectly Identified Low-Surgical-Risk Patients. *World J Surg*. 2018 Jul;42(7):1997-2000
23. Kanhere H, Goel R, Finlay B, Trochsler M, Maddern G. Radical Gastrectomy: Still the Cornerstone of Curative Treatment for Gastric Cancer in the Perioperative Chemotherapy Era-A Single Institute Experience over a Decade. *Int J Surg Oncol*. 2018 Jan 14;2018:9371492.
24. Karatassas A, Anthony A, Reid J, Leopardi L, Hewett P, Ibrahim N, Maddern G. Developing a mesh-tissue integration index and mesh registry database: the next step in the evolution of hernia repair. *ANZ J Surg*. 2018 Jun;88(6):528-529.
25. Kogawa M, Khalid KA, Wijenayaka AR, Ormsby RT, Evdokiou A, Anderson PH, Findlay DM, Atkins GJ. Recombinant sclerostin antagonises effects of ex vivo mechanical loading in trabecular bone and increases osteocyte lacunar size. *Am J Physiol Cell Physiol*. 2018 Jan 1;314(1):C53-C61.
26. Kong C, Chee C-F, Richter K, Thomas N, Abd Rahman N, Nathan S. Suppression of *Staphylococcus aureus* biofilm formation and virulence by a benzimidazole derivative, UM-C162. *Scientific reports*. 2018;8(1), 2758-1-2758-16.
27. Lazzarini PA, van Netten JJ, Fitridge RA, Griffiths I, Kinnear EM, Malone M, Perrin BM, Prentice J, Wraight PR. Pathway to ending avoidable diabetes-related amputations in Australia. *Med J Aust*. 2018;209(7):288-90.
28. Lee RC, Kanhere H, Trochsler M, Broadbridge V, Maddern G, Price TJ. Pancreatic, periampullary and biliary cancer with liver metastases: Should we consider resection in selected cases? *World J Gastrointest Oncol*. 2018 Aug 15;10(8):211-220.
29. Lu TC, Moretti K, Beckmann K, Cohen P, O'Callaghan M. ISUP Group 4 – a Homogenous Group of Prostate Cancers? *Pathol Oncol Res*. 2018 Oct;24(4):921-925.

30. McCombie AM, Frizelle F, Bagshaw PF, Frampton CM, Hewett PJ, McMurrick PJ, Rieger N, Solomon MJ, Stevenson AR; ALCCaS Trial group. The ALCCaS Trial: A Randomized Controlled Trial Comparing Quality of Life Following Laparoscopic Versus Open Colectomy for Colon Cancer. *Dis Colon Rectum*. 2018 Oct; 61(10):1156-1162.
31. Miljkovic D, Psaltis A, Wormald PJ, Vreugde S. Naive and effector B-cell subtypes are increased in chronic rhinosinusitis with polyps. *American Journal of Rhinology and Allergy*. 2018;32(1):3-6.
32. Moretti K, Vatandoust S, Kichenadasse G, O'Callaghan ME, Vincent AD, Kopsaftis T, Walsh S, Borg M, Karapetis C. Prostate cancer mortality is high in the elderly and can be reduced by selective individualized curative treatment. *World J Urol*. 2018 Nov;36(11):1799-1800.
33. Moretti KL, Shi Z, Kopsaftis T, O'Callaghan ME. Delays in radical prostatectomy for prostate cancer and survival outcomes. *World J Urol*. 2018 Aug;36(8):1337-1338.
34. Moretti KL. Re: Brasseti et al.: Prostate-specific Antigen Density Is a Good Predictor of Upstaging and Upgrading, According to the New Grading System: The Keys We Are Seeking May Be Already in Our Pocket (Urology 2018;111:129-136). *Urology*. 2018 May;115:188.
35. Moxon JV, Ng E, Lazzaroni SM, Boulton M, Velu R, Fitridge RA, Gollidge J. Circulating biomarkers are not associated with endoleaks after endovascular repair of abdominal aortic aneurysms. *J Vasc Surg*. 2018;67(3):770-7.
36. Munn Z, Giles K, Aromataris E, Deakin A, Schultz T, Mandel C, Peters MD, Maddern G, Pearson A, Runciman W. Mixed methods study on the use of and attitudes towards safety checklists in interventional radiology. *J Med Imaging Radiat Oncol*. 2018 Feb;62(1):32-38.
37. Murphy J, Ramezani pour M, Drilling A, Roscioli E, Psaltis A, Wormald PJ, Vreugde S. *In vitro* characteristics of an airway barrier-disrupting factor secreted by Staphylococcus aureus. *International Forum of Allergy & Rhinology*. 2018 Nov 15. doi: 10.1002/alr.22232. [Epub ahead of print]
38. Murphy J, Ramezani pour M, Roscioli E, Psaltis AJ, Wormald PJ, Vreugde S. Mucosal zinc deficiency in chronic rhinosinusitis with nasal polyposis contributes to barrier disruption and decreases ZO-1. *Allergy: European Journal of Allergy and Clinical Immunology*. 2018 Oct;73(10):2095-2097.
39. Murphy J, Ramezani pour M, Stach N, Dubin G, Psaltis AJ, Wormald PJ, Vreugde S. Staphylococcus Aureus V8 protease disrupts the integrity of the airway epithelial barrier and impairs IL-6 production *in vitro*. *Laryngoscope*. 2018;128(1):E8-E15.
40. Mylankal KJ, Fitridge R. Inferior vena cava filters: recent controversies. *ANZ J Surg*. 2018;88(3):128-9.
41. Nag N, Millar J, Davis ID, Costello S, Duthie JB, Mark S, Delprado W, Smith D, Pryor D, Galvin D, Sullivan F, Murphy AC, Roder D, Elsahle H, Currow D, White C, Skala M, Moretti KL, Walker T, De Ieso P, Brooks A, Heathcote P, Frydenberg M, Thavaseelan J, Evans SM. Development of Indicators to Assess Quality of Care for Prostate Cancer. *Eur Urol Focus*. 2018 Jan;4(1):57-63.
42. Ooi ML, Richter K, Bennett C, Macias-Valle L, Vreugde S, Psaltis AJ, Wormald PJ. Topical colloidal silver for the treatment of recalcitrant chronic rhinosinusitis. *Frontiers in Microbiology*. 2018 Apr 11;9:720. doi: 10.3389/fmicb.2018.00720. eCollection 2018.
43. Ooi ML, Richter K, Drilling AJ, Thomas N, Prestidge CA, James C, Moratti S, Vreugde S, Psaltis A, Wormald PJ. Safety and efficacy of topical Chitogel- Deferiprone-Gallium Protoporphylin in sheep model. *Frontiers in Microbiology*. 2018 May 11;9:917. doi: 10.3389/fmicb.2018.00917. eCollection 2018.
44. Paramasivan S, Lester S, Lau A, Ou J, Psaltis AJ, Wormald PJ, Vreugde S. Tertiary lymphoid organs: A novel target in patients with chronic rhinosinusitis. *Journal of Allergy and Clinical Immunology*. 2018;142(5):1673-1676.
45. Parvar SL, Fitridge R, Dawson J, Nicholls SJ. Medical and lifestyle management of peripheral arterial disease. *J Vasc Surg*. 2018;68(5):1595-606.
46. Pena G, Cowled P, Dawson J, Johnson B, Fitridge R. Diabetic foot and lower limb amputations: underestimated problem with a cost to health system and to the patient. *ANZ J Surg*. 2018;88(7-8):666-7.
47. Ramezani pour M, Bolt H, Psaltis AJ, Wormald PJ, Vreugde S. Primary human nasal epithelial cells: a source of poly (I:C) LMW-induced IL-6 production. *Scientific Reports*. 2018;8(1).
48. Scarfe A, Duncan J, Ma N, Cameron A, Rankin D, Karatassas A, Fletcher D, Watters D, Maddern G. Day case hernia repair: weak evidence or practice gap? *ANZ J Surg*. 2018 Jun;88(6):547-553.
49. Smolderen KG, Gosch K, Patel M, Jones WS, Hirsch AT, Beltrame J, Fitridge R, Shishehbor MH, Denollet J, Vriens P, Heyligers J, Stone MN, Aronow H, Abbott JD, Labroschiano C, Tutein-Nolthenius R, J AS. PORTRAIT (Patient-Centered Outcomes Related to Treatment Practices in Peripheral Arterial Disease: Investigating Trajectories): Overview of Design and Rationale of an International Prospective Peripheral Arterial Disease Study. *Circulation Cardiovascular Quality Outcomes*. 2018;11(2):e003860.
50. Speck PG, Wormald PJ. Is phage therapy suitable for treating chronic sinusitis Staphylococcus aureus infection? *Future Microbiology*. 2018;13(6):605-608.
51. Stevens CL, Babidge WJ, Maddern GJ. Variability of perioperative mortality of hepatic resection in Australia. *ANZ J Surg*. 2018 Oct;88(10):1022-1027.
52. Stevenson ARL, Solomon MJ, Brown CSB, Lumley JW, Hewett P, Clouston AD, Gebiski VJ, Wilson K, Hague W, Simes J; Australasian Gastro-Intestinal Trials Group (AGITG) ALaCaRT investigators. Disease-free Survival and Local Recurrence After Laparoscopic-assisted Resection or Open Resection for Rectal Cancer: The Australasian Laparoscopic Cancer of the Rectum Randomized Clinical Trial. *Ann Surg*. 2018 Sep 20. doi: 10.1097/SLA.0000000000003021. [Epub ahead of print]
53. Sultana A, Meng R, Piantadosi C, Brooke-Smith M, Chen J, Dolan P, Maddern G, Price T, Padbury R. Liver resection for colorectal cancer metastases: a comparison of outcomes over time in South Australia. *HPB (Oxford)*. 2018 Apr;20(4):340-346.
54. Suzuki M, Ramezani pour M, Cooksley C, Li J, Nakamaru Y, Homma A, Psaltis A, Wormald PJ, Vreugde S. Sirtuin-1 controls poly (I:C)-dependent matrix metalloproteinase 9 activation in primary human nasal epithelial cells. *American Journal of Respiratory Cell and Molecular Biology*. 2018;59(4):500-510.
55. Tan NCW, Goggins R, Psaltis AJ, Wormald PJ. Partial resection of the middle turbinate during endoscopic sinus surgery for chronic rhinosinusitis does not lead to an increased risk of empty nose syndrome: a cohort study of a tertiary practice. *International Forum of Allergy and Rhinology*. 2018;8(8):959-963.

56. Tapia Rico G, Karapetis C, Townsend AR, Piantadosi C, Padbury R, Roy A, Maddern G, Moore J, Carruthers S, Roder D, Price TJ. Do we know what to do with our nonagenarian and centenarian patients with metastatic colorectal cancer (mCRC)? Results from the South Australian mCRC registry. *Acta Oncol.* 2018 Nov;57(11):1455-1457.
57. Thurston B, Pena GN, Howell S, Cowled P, Fitridge R. Low total psoriasis area as scored in the clinic setting independently predicts midterm mortality after endovascular aneurysm repair in male patients. *J Vasc Surg.* 2018;67(2):460-7.
58. Tocaciu S, Thiagarajan J, Maddern G, Wichmann M. Mortality after emergency abdominal surgery in a non-metropolitan Australian centre. *Australian Journal of Rural Health.* 2018 Dec; 26(6):408-415.
59. Traeger L, Kiroff G. Intrabiliary obstruction by colorectal metastases. *J Surg Case Rep.* 2018 Jan 17;2018(1): 1-2. doi: 10.1093/jscr/rjx259. eCollection 2018
60. Tsiamis E, Millar J, Baxi S, Borg M, De Ieso P, Elsalem H, Foroudi F, Higgs B, Holt T, Martin J, Moretti K, Pryor D, Skala M, Evans S. Development of quality indicators to monitor radiotherapy care for men with prostate cancer: A modified Delphi method. *Radiother Oncol.* 2018 Aug;128(2):308-314.
61. van Netten JJ, Lazzarini PA, Armstrong DG, Bus SA, Fitridge R, Harding K, Kinnear E, Malone M, Menz HB, Perrin BM, Postema K, Prentice J, Schott KH, Wraight PR. Diabetic Foot Australia guideline on footwear for people with diabetes. *J Foot Ankle Res.* 2018;11:2.
62. Vatandoust S, Kichenadasse G, O'Callaghan M, Vincent AD, Kopsaftis T, Walsh S, Borg M, Karapetis CS, Moretti K. Localised prostate cancer in elderly men aged 80-89 years, findings from a population-based registry. *BJU Int.* 2018 May;121 Suppl 3:48-54.
63. Vreugdenburg TD, Forel D, Marlow N, Maddern GJ, Quinn J, Lander R, Tobin S. Morbidity and mortality meetings: gold, silver or bronze? *ANZ J Surg.* 2018 Oct;88(10):966-974.
64. Wijesundara DK, Gummow J, Li J, Yu W, Quah B, Ranasinghe C, Torresi J, Gowans EJ, Grubor-Bauk B. Induction of genotype-cross reactive, hepatitis C virus-specific cell mediated immunity in DNA-vaccinated mice. *J Virol.* 2018 Mar 28;92(8).
65. Wormald PJ. Can a postnasal drip be aspirated into the lungs? *International Forum of Allergy and Rhinology.* 2018;8(3):367-368.
66. Zhang G, Zhao Y, Hayes AJ, Psaltis AJ, Wormald PJ, Vreugde S. *Staphylococcus aureus* small colony variants: Prevalence in chronic rhinosinusitis and induction by antibiotics. *Allergy: European Journal of Allergy and Clinical Immunology.* 2018 Dec;73(12):2403-2405.
67. Zhang G, Zhao Y, Paramasivan S, Richter K, Morales S, Wormald PJ, Vreugde S. Bacteriophage effectively kills multidrug resistant *Staphylococcus aureus* clinical isolates from chronic rhinosinusitis patients. *International Forum of Allergy and Rhinology.* 2018;8(3):406-414.
68. Zhao YC, Bassiouni A, Tanjararak K, Vreugde S, Wormald PJ, Psaltis AJ. Role of fungi in chronic rhinosinusitis through ITS sequencing. *Laryngoscope.* 2018;128(1):16-22.
69. Zysk A, DeNichilo M, Zinonos I, Hay S, Liapis V, Ponomarev V, Evdokiou A, Panagopoulos V. Zoledronate Enhances the Cytotoxicity of Gamma Delta T Cell Immunotherapy in an Orthotopic Mouse Model of Osteolytic Osteosarcoma. *Journal of Cancer Science & Therapy.* 2018;10(9): 262-266.

THERAPEUTICS RESEARCH CENTRE, UNIVERSITY OF SOUTH AUSTRALIA

1. Abd E, Benson HAE, Roberts MS, Grice JE. Follicular Penetration of Caffeine from Topically Applied Nanoemulsion Formulations Containing Penetration Enhancers: *In vitro* Human Skin Studies. *Skin Pharmacol Physiol.* 2018;31(5):252-260.
2. Abd E, Benson HAE, Roberts MS, Grice JE. Minoxidil Skin Delivery from Nanoemulsion Formulations Containing Eucalyptol or Oleic Acid: Enhanced Diffusivity and Follicular Targeting. *Pharmaceutics.* 2018 Jan 25;10(1).
3. Abraham J, Sinollareddy M, Roberts MS, Williams P, Peake SL, Lipman J, Roberts JA. Plasma and interstitial fluid population pharmacokinetics of vancomycin in critically patients with sepsis. *Int J Antimicrob Agents.* 2018 Oct 5. pii: S0924-8579(18)30280-2.
4. Alahakoon C, Dassanayake TL, Gawarammana IB, Sedgwick EM, Weerasinghe VS, Abdalla A, Roberts MS, Buckley NA. Prediction of organophosphorus insecticide-induced intermediate syndrome with stimulated concentric needle single fibre electromyography. *PLoS One.* 2018 Sep 27;13(9):e0203596.
5. Amarah AA, Petlin DG, Grice JE, Hadgraft J, Roberts MS, Anissimov YG. Compartmental modeling of skin transport. *Eur J Pharm Biopharm.* 2018 Sep;130:336-344.
6. Andréo-Filho N, Bim AVK, Kaneko TM, Kitice NA, Haridass IN, Abd E, Santos Lopes P, Thakur SS, Parekh HS, Roberts MS, Grice JE, Benson HAE, Leite-Silva VR. Development and Evaluation of Lipid Nanoparticles Containing Natural Botanical Oil for Sun Protection: Characterization and *in vitro* and *in vivo* Human Skin Permeation and Toxicity. *Skin Pharmacol Physiol.* 2018;31(1):1-9.
7. Brooks A, Futrega K, Liang X, Hu X, Liu X, Crawford DHG, Doran MR, Roberts MS, Wang H. Concise Review: Quantitative Detection and Modeling the *In Vivo* Kinetics of Therapeutic Mesenchymal Stem/Stromal Cells. *Stem Cells Transl Med.* 2018 Jan;7(1):78-86.
8. Chan BS, Becker T, Chiew AL, Abdalla AM, Robertson TA, Liu X, Roberts MS, Buckley NA. Vasoplegic Shock Treated with Methylene Blue Complicated by Severe Serotonin Syndrome. *J Med Toxicol.* 2018 Mar;14(1):100-103.
9. Chan BS, Chiew AL, Grainger S, Page CB, Gault A, Mostafa A, Roberts MS, Buckley NA, Isbister GK. Bromoxynil and 2-methyl-4-chlorophenoxyacetic acid (MCPA) poisoning could be a bad combination. *Clin Toxicol.* 2018;1-3.
10. Chhatwal J, Chen Q, Ayer T, Bethea ED, Kanwal F, Kowdley KV, Wang X, Roberts MS, Gordon SC. Hepatitis C virus re-treatment in the era of direct-acting antivirals: projections in the USA. *Aliment Pharmacol Ther.* 2018 Apr;47(7):1023-1031.
11. Chiew AL, Page CB, Clancy D, Mostafa A, Roberts MS, Isbister GK. 2-Methyl-4-chlorophenoxyacetic acid (MCPA) and bromoxynil herbicide ingestion. *Clin Toxicol (Phila).* 2018 May;56(5):377-380.
12. Chiew AL, Wright DFB, Dobos NM, McArdle K, Mostafa AA, Newth A, Roberts MS, Isbister GK. 'Massive' metformin overdose. *Br J Clin Pharmacol.* 2018 Dec;84(12):2923-2927.
13. Chiew AL, Wright DFB, Roberts MS, Isbister GK. Response to 'Comment on "Massive" metformin overdose' by Chiew et al.' *Br J Clin Pharmacol.* 2018 Dec;84(12):2940-2941.

14. Garcia MTJ, de Vasconcellos FLL, Raffier CP, Roberts MS, Grice JE, Benson HAE, Leite-Silva VR. Alternative Methods to Animal Studies for the Evaluation of Topical/ Transdermal Drug Delivery Systems. *Curr Top Med Chem*. 2018;18(4):287-299.
15. Holmes AM, Kempson I, Turnbull T, Paterson D, Roberts MS. Imaging the penetration and distribution of zinc and zinc species after topical application of zinc pyrithione to human skin. *Toxicol Appl Pharmacol*. 2018 Mar 15;343:40-47.
16. Khan MS, Roberts MS. Challenges and innovations of drug delivery in older age. *Adv Drug Deliv Rev*. 2018 Oct;135:3-38.
17. Le T, Gong Y, Wang G, Davies NM, Lillico R, Lakowski T, Roberts MS, Burczynski FJ. The Antioxidant Activity of Recombinant Rat Hepatic Fatty Acid Binding Protein T94A Variant. *J Pharm Pharm Sci* 2018; 21(1s), 309s – 324s.
18. Jin W, Liang X, Brooks A, Futrega K, Liu X, Doran MR, Simpson MJ, Roberts MS, Wang H. Modelling of the SDF-1/CXCR4 regulated *in vivo* homing of therapeutic mesenchymal stem/stromal cells in mice. *Peer J*. 2018 Dec 6;6:e6072.
19. Mohammed YH, Holmes A, Haridass IN, Sanchez WY, Studier H, Grice JE, Benson HAE, Roberts MS. Support for the Safe Use of Zinc Oxide Nanoparticle Sunscreens: Lack of Skin Penetration or Cellular Toxicity after Repeated Application in Volunteers. *J Invest Dermatol*. 2018 Nov 13. pii: S0022-202X(18)32655-1.
20. Rainsford KD, Roberts MS, Nencioni A, Jones C. Rationale and evidence for the incorporation of heparin to the diclofenac epolamine medicated plaster. *Curr Med Res Opin*. 2018 Nov 26:1-28.
21. Rzhavskiy AS, Telaprolu K, Mohammed YH, Grice JE, Roberts MS, Anissimov YG. Using a simple equation to predict the microporation-enhanced transdermal drug flux. *Eur J Pharm Biopharm*. 2018 Jun;127:12-18.
22. Sinnollareddy MG, Roberts M, Lipman J, Peake S, Roberts J. Pharmacokinetics of piperacillin in critically ill patients with acute kidney injury and receiving sustained low efficiency dialysis. *Journal of Antimicrobial Chemotherapy*. 2018 Jun 1;73(6):1647-1650.
23. Vieira CO, Grice JE, Roberts MS, Haridass IN, Duque MD, Lopes PS, Leite-Silva VR, Martins TS. ZnO:SBA-15 Nanocomposites for Potential Use in Sunscreen: Preparation, Properties, Human Skin Penetration and Toxicity. *Skin Pharmacol Physiol*. 2018 Oct 31;32(1):32-42.
24. Wang H, Li X, Tse BW, Yang H, Thorling CA, Liu Y, Touraud M, Chouane JB, Liu X, Roberts MS, Liang X. Indocyanine green-incorporating nanoparticles for cancer theranostics. *Theranostics*. 2018 Feb 2;8(5):1227-1242. Review.
25. Wang H, Yang H, Xu ZP, Liu X, Roberts MS, Liang X. Anionic Long-Circulating Quantum Dots for Long-Term Intravital Vascular Imaging. *Pharmaceutics*. 2018 Nov 20;10(4).
26. Warren SC, Nobis M, Magenau A, Mohammed YH, Herrmann D, Moran I, Vennin C, Conway JR, Méléneć P, Cox TR, Wang Y, Morton JP, Welch HC, Strathdee D, Anderson KI, Phan TG, Roberts MS, Timpson P. Removing physiological motion from intravital and clinical functional imaging data. *Elife*. 2018 Jul 9;7.
27. Wei JCJ, Haridass IN, Crichton ML, Mohammed YH, Meliga SC, Sanchez WY, Grice JE, Benson HAE, Roberts MS, Kendall MAF. Space- and time-resolved investigation on diffusion kinetics of human skin following macromolecule delivery by microneedle arrays. *Sci Rep*. 2018 Dec 10;8(1):17759.
28. Yamada M, Tayeb H, Wang H, Dang N, Mohammed YH, Osseiran S, Belt PJ, Roberts MS, Evans CL, Sainsbury F, Prow TW. Using elongated microparticles to enhance tailorable nanoemulsion delivery in excised human skin and volunteers. *J Control Release*. 2018 Sep 15;288:264-276.
29. Yang H, Villani RM, Wang H, Simpson MJ, Roberts MS, Tang M, Liang X. The role of cellular reactive oxygen species in cancer chemotherapy. *J Exp Clin Cancer Res*. 2018 Nov 1;37(1):266. Review.

HIGH PROFILE INTERNATIONAL TALKS 2018



CONFERENCE/MEETING	TITLE OF PRESENTATION	SIGNIFICANCE	LOCATION	DATE
WENDY INGMAN BREAST BIOLOGY AND CANCER UNIT				
Lactation Consultants of Australia and New Zealand	Understanding the biology of lactation: Challenging old paradigms to improve breastfeeding outcomes	Plenary	Adelaide, Australia	October
JOHN HOROWITZ CARDIOVASCULAR PATHOPHYSIOLOGY AND THERAPEUTICS GROUP				
11 th International Conference on Acute Cardiac Care	A new look at N-acetylcysteine in acute heart disease	Plenary	Tel Aviv, Israel	June
11 th International Conference on Acute Cardiac Care	Coronary Spasm	Plenary	Tel Aviv, Israel	June
JOHN BELTRAME TVFRC				
American College of Cardiology 67 th Annual Scientific Sessions	The Syndromes of MINOCA and TINOCA: One Diagnosis Does Not Fit All	Invited Speaker	Orlando, USA	March
SIVABASKARI (THARSHY) PASUPATHY TVFRC				
European Society of Cardiology Congress	The What, When, Who, Why, How & Where of MINOCA	Invited Speaker	Munich, Germany	August
ROB FITRIDGE VASCULAR SURGERY RESEARCH GROUP				
Joint meeting of the Interventional Radiology Society of Australasia and the Vascular Society of New Zealand	Global Vascular Guideline for the Management of Chronic Limb-Threatening Ischemia: A proposed new classification system for infrainguinal arterial intervention: Anatomical staging (GLASS)	Plenary	Auckland, New Zealand	March
Joint meeting of the Interventional Radiology Society of Australasia and the Vascular Society of New Zealand	Global Vascular Guideline for the Management of Chronic Limb-Threatening Ischaemia (CLTI): Structured decision-making framework for revascularization in chronic limb-threatening ischaemia- assessing the Patient, the Limb and the Anatomy (PLAN)	Plenary	Auckland, New Zealand	March
Australia and New Zealand Society for Vascular Surgery, Annual Scientific Conference	Clinical Guidelines for the Management of the Diabetic Foot	Plenary	Auckland, New Zealand	September

L-R: **Professor John Beltrame** (Director of Research, CALHN), Professor Peter Rathjen (Vice-Chancellor, The University of Adelaide and TQEH Research Expo Plenary Lecturer), Jenny Richter (CEO, CALHN) and **Professor Guy Maddern** (Director of Research, BHI, TQEH).

HIGH PROFILE INTERNATIONAL TALKS 2018

CONFERENCE/MEETING	TITLE OF PRESENTATION	SIGNIFICANCE	LOCATION	DATE
JOE DAWSON VASCULAR SURGERY RESEARCH GROUP				
Australia and New Zealand Society for Vascular Surgery, Annual Scientific Conference	Cognitive function post carotid procedures: what is the current evidence?	Plenary	Auckland, New Zealand	September
SANDRA PEAKE INTENSIVE CARE MEDICINE RESEARCH GROUP				
European Society Intensive Care Medicine Congress	The Augmented versus Routine approach to Giving Energy Trial: A randomised controlled trial	President's Ground-breaking Research session	Paris, France	October
CATHERINE HILL RHEUMATOLOGY RESEARCH GROUP				
Immune Mediated Inflammatory Disease Meeting	term information about disease management: Learning from Australian Rheumatology Association Database (ARAD)	Plenary	Auckland, New Zealand	September
GUY MADDERN SURGICAL SCIENCE RESEARCH GROUP				
4 th Great Britain & Ireland Hepato Pancreato Biliary Association Scientific Meeting	What don't we know about HPB surgery	Keynote Lecture	Birmingham, UK	March
MICHAEL ROBERTS THERAPEUTICS RESEARCH CENTRE				
Perspectives in percutaneous penetration, 16 th international conference		Invited speaker, Session Chair	La Grand Motte, France	April
12 th workshop and conference Advanced Multiphoton and Fluorescence Life time Imaging Techniques FLIM		Invited Speaker, Session Chair Facilitator	Berlin, Germany	June
BRANKA GRUBOR-BAUK VIROLOGY GROUP				
Harvard Medical School	A DNA vaccine for Zika virus	Invited Seminar	Boston, USA	July
DANUSHKA WIJESUNDARA VIROLOGY GROUP				
Vaccines R&D	Development of a vaccination strategy to elicit a frontline defence against HCV in the liver	Invited Speaker	Baltimore, USA	November
PJ WORMALD ENT SURGERY				
8 th Emirates Otorhinolaryngology, audiology and communication disorders congress	Managing the difficult frontal sinus	Plenary	Dubai, UAE	January
50 th MAA Workshop on FESS	Medical Management of CRS	Plenary	Hyderabad, India	March
ALKIS PSALTIS ENT SURGERY				
FabFESS International Surgical workshop	International Frontal Sinus Classification System	Plenary	Mangalore, India	February
European Rhinologic Society Meeting	Management of minimal sinus disease	Expert Panel	London, UK	April
2 nd International Conference on ENT Endoscopic Nasal Surgery	Aetiopathogenesis of Chronic Rhinosinusitis	Plenary	Athens, Greece	May
19 th Asian Research Symposium in Rhinology	Management of Major Vascular Injuries	Plenary	Bali, Indonesia	July
2 nd Indonesian Rhinology Conference	International Microbiome Collaboration	Plenary	Bali, Indonesia	July

HIGH PROFILE INTERNATIONAL TALKS 2018

CONFERENCE/MEETING	TITLE OF PRESENTATION	SIGNIFICANCE	LOCATION	DATE
ALKIS PSALTIS ENT SURGERY cont.				
American Rhinologic Society	Zinc Deficiency in Nasal Polyposis	Top Rated Scientific Paper Presentations	Atlanta, USA	October
American Academy of Otolaryngology Head and Neck Surgery	Empty Nose Syndrome	Expert Panel	Atlanta, USA	October
PJ WORMALD, ALKIS PSALTIS & ROWAN VALENTINE ENT SURGERY				
American Academy of Otolaryngology Head and Neck Surgery	3D sinus and Skull base anatomy	Expert Seminar	Atlanta, USA	October
SAM COSTELLO INFLAMMATORY BOWEL DISEASE RESEARCH GROUP				
Digestive Diseases Week	Digestive Diseases Week	Invited presentation: Cochrane Symposium	Washington DC, USA	June
New Zealand IBD symposium	Faecal microbiota transplantation in IBD	Invited presentation	Wellington, New Zealand	July
ROB BRYANT INFLAMMATORY BOWEL DISEASE RESEARCH GROUP				
New Zealand IBD symposium	Diet in the treatment of IBD	Invited presentation	Wellington, New Zealand	July



The scope and quality of the research presented continues to be of a consistently high standard, making the judging process harder each year!



After the resounding success and positive feedback received following the 2017 TQEH Research Days, we were delighted to again present the world-class research being conducted at The Queen Elizabeth Hospital and Basil Hetzel Institute over two consecutive days on Thursday 18th and Friday 19th October 2018. Due to this expansion, we also underwent a small name change to TQEH Research Expo to encompass both research days and their activities.

We extend our congratulations to all the undergraduate and postgraduate students and registrars who participated in TQEH Research Expo 2018. The scope and quality of the research presented continues to be of a consistently high standard, making the judging process harder each year!

Now in its 27th year, TQEH Research Expo has continued its long-standing purpose of providing an opportunity for our post-graduate students and those in training to develop and practice writing their presentation skills under conditions that are typical of most professional society congresses.

Students are required to submit an abstract and prepare either a 10-minute oral presentation or a poster with a 3-minute oral presentation. Guidance and encouragement is provided by their supervisors and peers during preparation of both the abstract and oral and poster presentations to ensure the most is obtained from this professional development activity. With this experience, it is hoped that the students will feel more confident when they are presenting their studies at major national and international conferences.

On the Thursday afternoon, TQEH Research Expo included our Researcher Showcase, highlighting our own research superstars, including Early and Mid-Career Fellowship Researchers and recently successful The Hospital Research Foundation and NHMRC Project and Fellowship awardees. This session emphasised the amazing work being performed by both early and senior researchers at our research institute.

Supporters of The Hospital Research Foundation were invited to attend this session to hear of the latest medical advances they are supporting from some of our brightest medical and scientific minds.

The highly anticipated 2018 Plenary Lecture was given by Professor Peter Rathjen, Vice-Chancellor and President of The University of Adelaide. Professor Rathjen took us through the great research achievements of our state, institute and hospital and postulated on what will be required by our government, universities, hospitals, research facilities and general research community, to continue our research successes into the future.

TQEH Research Expo has long been recognised as a significant event in the TQEH research calendar and this would not be possible without the many volunteers who contribute to its successful organisation.

We extend our thanks to all the judges of the abstract, poster and oral sessions, session chairs, and all the members of the Research Expo Organising Committee. Special thanks must go to The Hospital Research Foundation for their wonderful support over the years in underwriting the day, as well as sponsoring two of the oral speaker prizes and providing the coffee baristas! Many thanks also to our other University and Trade sponsors.

TQEH Research Expo 2019 is planned for Thursday 10th and Friday 11th October so please be sure to lock these dates in your calendars now.

LISA LEOPARDI

Chair, Organising Committee
TQEH Research Expo 2018

L-R: **Professor Guy Maddern** (Director of Research BHI), **Lisa Leopardi** (Chair, TQEH Research Expo), Anna Nolan (Chief Financial Officer THRF).

TQEH RESEARCH EXPO 2018 AWARD WINNERS



AWARD CATEGORY	AWARD SPONSOR	WINNER	BHI RESEARCH GROUP
Best Oral Presentation: Honours and Summer Students	The Hospital Research Foundation	Ashley Twigger	ENT Surgery
Best Oral Presentation: Junior Laboratory PhD Students	co-sponsored by ThermoFisherScientific and The University of Adelaide	Giri Krishnan	ENT Surgery
Best Oral Presentation: Senior Laboratory PhD Students	The University of Adelaide	Lisa Cherian	ENT Surgery
Best Oral Presentation: Clinical Trainees	The Hospital Research Foundation	Rachel Goggin	ENT Surgery
Best Oral Presentation: Clinical Higher Degree Students	University of South Australia	Anupam Gupta	Adelaide G-TRAC Centre
Poster Prize	Southern Cross Science	Namfon Pantarat	Breast Cancer Research Unit
Best Lay Description	Lonza	Rachel Goggin	ENT Surgery
Ivan De La Lande Award (for eligible Clinical Pharmacology or Cardiology student/trainee)		Clementine Labrosciano	TVFRC

L-R: **Clementine Labrosciano**, **Rachel Goggin**, Anna Nolan (Chief Financial Officer THRF), **Ashley Twigger**, **Anupam Gupta**, **Professor Guy Maddern** (Director of Research BHI), **Lisa Cherian**, **Namfon Pantarat**. Absent from photo: **Giri Krishnan**.

AWARDS 2018

RECIPIENT	AWARD	SPONSOR	VALUE
ADELAIDE G-TRAC CENTRE			
Agathe Jadcak October	Robert Penhall Research Award	Australian Association of Gerontology	\$1000 and a complimentary annual membership to the AAG
Agathe Jadcak October	Travel Grant	Faculty Health and Medical Sciences, The University of Adelaide	\$ 1010
BREAST BIOLOGY AND CANCER UNIT			
Sarah Bernhardt August	Finalist, Endocrine Society of Australia New Investigator Award	Novartis	
Sarah Bernhardt September	Research and Business Partnerships Prize	CMAX, at Florey Postgraduate Research Conference, The University of Adelaide	\$200
Sarah Bernhardt September	Finalist, 3MT University Award	The University of Adelaide	
TVFRC			
Tharshy Pasupathy June	Finalist, Fresh Science	Science in Public, Australia	
Tharshy Pasupathy August	Travel Grant to attend European Society of Cardiology Congress, Munich Germany	The University of Adelaide	\$3,000
Christopher Zeitz October	Finalist, SA Local Hero category as a "pioneer in rural health services"	2019 South Australia Australian of the Year Awards	
Tharshy Pasupathy November	Early Career Blogger	American Heart Association	
VASCULAR SURGERY RESEARCH GROUP			
Prue Cowled December	Dean of Medicine Higher Degree Research Award	Adelaide Medical School, The University of Adelaide	
PSYCHIATRY RESEARCH GROUP			
Scott Clark December	Dean of Medicine Clinical Teaching Award	Adelaide Medical School, The University of Adelaide	
RHEUMATOLOGY RESEARCH GROUP			
Charlotte Proudman November	Best Clinical Prize	Australian Rheumatology Association	\$1,000
SURGICAL SCIENCE RESEARCH GROUP			
Guy Maddern December	Elected as member	French Académie nationale de médecine	
VIROLOGY GROUP			
Danushka Wijesundara June	Chris Burrell International Travel Award	Australian Centre for HIV and Hepatitis Virology (ACH2 conference)	\$4,000
Zelalem Mekonnen June	ACHV Domestic Travel Award	Australian Centre for HIV and Hepatitis Virology (ACH2 conference)	\$1,000
Zelalem Mekonnen September	Adelaide Medical School Prize	Florey Postgraduate Research Conference, The University of Adelaide	\$200

AWARDS 2018



RECIPIENT	AWARD	SPONSOR	VALUE
ENT SURGERY			
Katharina Richter March	Pitch it Clever Delegates' Choice Award	Universities Australia	\$1,500
Sathish Paramasivan June	Finalist, ASMR Ross Wishart Memorial Award	Australian Society for Medical Research, SA Branch	
Katharina Richter June	ASMR Ross Wishart Memorial Award, SA ASMR Meeting	Australian Society for Medical Research, SA Branch	\$1,000
Katharina Richter June	SA Young Tall Poppy Award	Australian Institute of Policy & Science	
Katharina Richter July	SA Science Excellence Award: PhD Research Excellence	Government of South Australia, Department for Industry and Skills	\$10,000
Sathish Paramasivan August	Best scientific presentation	Australian Society of Immunology annual retreat	
Mian Li Ooi August	IMPACT7 2018 People's Choice Award	CSIRO and Australian Government	
Katharina Richter October	Women's Research Excellence Award	The University of Adelaide	\$5,000
Lisa Cherian November	ASMR Champion Playoust award, 57 th ASMR National Scientific Conference	Australian Society for Medical Research	

L-R: **Dr Danushka Wijesundara**, **Makutiro Masavuli**, Professor Jens Bulch (University of Copenhagen, Denmark), **Dr Branka Grubor-Bauk**, **Zelalem Mekonnen** at the Australian Centre for HIV and Hepatitis Virology (ACH2) Conference in June.



RECIPIENT	AWARD	SPONSOR	VALUE
ENT SURGERY cont.			
Katharina Richter November	One of top 10 innovators under 35 yrs for Australia, Hong Kong, New Zealand, Southeast Asia and Taiwan Region	MIT Technology Review Innovators	
PJ Wormald November	Elected as Fellow	Australian Academy of Health and Medical Sciences	
Katharina Richter December	Dean of Medicine Junior Research Award	Adelaide Medical School, The University of Adelaide	

Top: **Dr Katharina Richter** receiving the SA Science Excellence Award for PhD Research Excellence.
Bottom: **Dr Mian Li Ooi** was awarded the IMPACT7 2018 People's Choice Award.

Science Alive! 2018

Work Experience School Students

Early Career Blogger

Community Engagement Activities 2018



SCIENCE ALIVE! 2018

For the 5th consecutive year, the Basil Hetzel Institute participated in Science Alive! which forms part of the celebrations for National Science Week. The Adelaide Showground provided the venue, with year 7-12 students visiting on Friday 3rd August, and the general public over the weekend. Organisers estimate that more than 25,000 people visited Science Alive! during the 3-day event.

At the BHI booth, two “laparoscopic box-trainers” on loan from the Royal Australasian College of Surgeons, allowed people of all ages to test their surgical skills, while hand-held spirometers allowed people to measure one aspect of their lung function, namely how much air they can force out in 1 second.

We thank the following TQEH surgeons and BHI researchers for volunteering during the event:

BHI RESEARCHERS	TQEH SURGEONS
Sarah Bernhardt	Shantanu Bhattacharjya
Prue Cowled	Martin Bruening
Jo Dollard	Mark Harris
Kevin Fenix	Guy Maddern
Amita Ghadge	Gian Prevost
Ha Nguyen	Markus Trochsler
Beula Panchatcharam	
Mahnaz Ramenzapour	
Kati Richter	
Ashley Twigger	
Rajan Sundaresan Vediappan	
Joe Wrin	
Kathryn Hudson	
Rebecca Anderson	





WORK EXPERIENCE SCHOOL STUDENTS

In 2018 researchers at the Basil Hetzel Institute hosted ten students in Year 10 and 11 from Glenunga International High School, Pulteney Grammar School, Portside Christian College, Concordia College, Westminster School and Saint Aloysius College to undertake their work experience placement.

Portside Christian College awarded BHI researchers the “John Ridley Service Award” in recognition of our service to their students. BHI researchers have hosted a Portside Christian College student each year since 2014.

In addition, 40 Year 11 students from Tyndale Christian School worked with BHI researchers Dr Rosanna Tavella and Clementine Labroschiano (TVFRC), Dr Kati Richter and Catherine Bennett (ENT Surgery) and Dr Pallave Dasari (Breast Biology and Cancer Unit) in April to develop research projects. The students then returned to the BHI in June to present the findings of their group projects.

EARLY CAREER BLOGGER

Sivabaskari (Tharshy) Pasupathy, a postdoctoral researcher with the TVFRC group, was the only Australian selected to be part of an Early Career Blogging Program [https://professional.heart.org/professional/MembershipCouncils/ScientificCouncils/UCM_483446_AHAASA-Early-Career-Blogging-Program.jsp] by the American Heart Association (AHA).

This program is an innovative platform that provides early career professionals with the opportunity to establish a robust digital portfolio by writing blog articles to be featured on the AHA Early Career Voice and News website [<https://earlycareervoice.professional.heart.org/blog/>].

Tharshy attended the AHA meeting in 2018 and found her participation in the Early Career Blogging Program to be a rewarding experience. “I had the privilege to attend the embargoed sessions and late breaking trials at the conference and had the opportunity to both share my opinion on the American Heart Association website and the twitter feed. I was able to present my first blog on MINOCA

on the AHA website [<https://earlycareervoice.professional.heart.org/minoca-the-new-unique-type-of-myocardial-infarction/>]. As an Australian Early Career Tharshy will be writing monthly blogs until November 2019.

I had the privilege to attend the embargoed sessions and late breaking trials at the conference and had the opportunity to share my opinion on the American Heart Association website.

Sivabaskari (Tharshy) Pasupathy



Top: ENT Surgery researcher **Catherine Bennett** with a group of year 11 students from Tyndale Christian School.

Bottom: **Professor John Beltrame**, **Dr Rosanna Tavella** and **Dr Tharshy Pasupathy** at the American Heart Association meeting in Chicago, November 2018.

COMMUNITY ENGAGEMENT 2018



COMMUNITY ENGAGEMENT ACTIVITIES 2018

NAME OF INDIVIDUAL	TOPIC OR TITLE	DELIVERED TO	ACTIVITY
AGEING AND EXTENDED CARE SERVICES			
Anupam Gupta 1/3/2018		General Public	TV - Ten Eyewitness News Adelaide
Anupam Gupta 18/4/2018	Australian-first trial using botox as a medical therapy for stroke patients	General Public	THRF online article ► https://www.hospitalresearch.com.au/australian-first-trial-using-botox-medical-therapy-stroke-patients/
Danielle Taylor 20/6/2018	Geographic perspectives to promote Healthy Ageing	Marion VIEW Club	THRF Talk and Lab Tour
Adelaide G-TRAC Centre 1/08/2018	The Science of Healthy Ageing	General Public	Research showcase
BREAST BIOLOGY AND CANCER UNIT			
Sarah Bernhardt 01/02/2018	New tests to improve breast cancer diagnosis: are they useful for younger women?	U3A - University of the Third Age	Talk
Pallave Dasari each month (except January)	Host of 'Science in the Pub' talks, Rob Roy Hotel	General Public	Talks
Pallave Dasari each month (except January)	Regular segment to promote upcoming 'Science in the Pub' event	General Public	Radio - ABC AM 891 'Mornings' with David Bevan
Wendy Ingman 6/02/2018	About INFORMD	General Public	Online interview for eCancer ► http://ecancer.org/journal/12/interview/807/40-wendy-ingman.php
Pallave Dasari 13-14 February	Science Meets Parliament	Federal Government Members of Parliament	face-to-face meetings ► https://scienceandtechnologyaustralia.org.au/event/science-meets-parliament-2018/

PhD Student Joe Wrin (left) with participants at The Day of Immunology talks and tours.

COMMUNITY ENGAGEMENT 2018

NAME OF INDIVIDUAL	TOPIC OR TITLE	DELIVERED TO	ACTIVITY
BREAST BIOLOGY AND CANCER UNIT cont.			
Joe Wrin 27/4/2018	Breast Cancer: Prevention beats treatment every time	General Public	World 'Day of Immunology' Public Lecture at the BHI and Lab tour
Joe Wrin 27/4/2018	My story: Mother's Day Classic	General Public	TV - Channel 9 news
Joe Wrin 12/05/2018	My story: Mother's Day Classic	General Public	Radio - ABC AM891
Joe Wrin 13/05/2018	One minute silence: Mother's Day Classic	General Public	Talk
Pallave Dasari 03/07/2018		General Public	Radio – ABC Darwin 'Mornings' with Lyrella Cochrane
Joe Wrin 03/08/2018	Promoting science at BHI	High School Students attending Science Alive!	Talk
Pallave Dasari 16/08/2018	Tall Tales of Science, event for National Science Week	General Public	Talk
Pallave Dasari 16/8/2018	Radio promotion for Tall Tales of Science	General Public	Radio - 5AA AM 1395, and ABC AM 891
Wendy Ingman 04/09/2018	Interview for expert comment in article on breast cancer risk factors	General Public	Newspaper - The Advertiser
Wendy Ingman 04/10/2018	Breast Cancer Awareness Month	General Public	Radio – Coast FM 88.7
Joe Wrin October 2018	Breast cancer research at the BHI	General Public	Interview for Australian Breast Cancer Research
Wendy Ingman 18/10/2018	Towards zero deaths from breast cancer	General Public	THRF Talk
Sarah Bernhardt 31/10/2018	New tests to improve breast cancer diagnosis: are they useful for younger women?	Women's Only Community Group Talk	Talk
Wendy Ingman 08/11/2018	Targeting breast density to prevent breast cancer	The Sharon Forrester-Jones Racing Group	THRF Talk and Lab tour
LIVER METASTASIS RESEARCH GROUP			
Kevin Fenix 27/4/2018	Using the immune system to find new targets for bowel cancer		World 'Day of Immunology' Public Lecture at the BHI and Lab tour
Ehud Hauben April	Colorectal cancer liver metastasis: can we prevent it?	U3A	THRF Talk
Kevin Fenix May	New Candidate Biomarkers of CRC	General Public	THRF online article and Radio Interview
Kevin Fenix 27/6/2018	The Immune System could help save lives from bowel cancer	General Public	THRF online article ► https://www.hospitalresearch.com.au/immune-system-help-save-lives-bowel-cancer/
Kevin Fenix 8/11/2018	Cancer and the immune system	The Sharon Forrester-Jones Racing Group	THRF Lab Tour

COMMUNITY ENGAGEMENT 2018

NAME OF INDIVIDUAL	TOPIC OR TITLE	DELIVERED TO	ACTIVITY
SOLID TUMOUR GROUP			
Tim Price 19/2/2018	Cancer drug Rose Bengal lets Michael Button walk his daughter down the aisle	General Public	The Advertiser print and online article ► https://www.adelaidenow.com.au/news/south-australia/cancer-drug-rose-bengal-lets-michael-button-walk-daughter-down-the-aisle/news-story/98f49f66a47d733130a20efadae15e29
Joanne Young September	Bowel Cancer in Young Adults is on the Rise	U3A	THRF Talk
SURGICAL SCIENCE RESEARCH GROUP			
Guy Maddern 22/3/2018	Interview about TQEH history, and Bill Proudman's book "In the beginning"	General Public	Radio interview - ABC AM 891 'Mornings with David Bevan' ► http://www.abc.net.au/radio/adelaide/programs/mornings/qeh/9575884
CARDIOVASCULAR PATHOPHYSIOLOGY AND THERAPEUTICS GROUP			
Sven Surikow & John Horowitz 23/3/2018	Yes, you can die from a broken heart	General Public	The Advertiser print and online article
TRANSLATIONAL VASCULAR FUNCTION RESEARCH COLLABORATIVE			
John Beltrame 16/1/2018	National support boosts local heart care	General Public	THRF online article ► https://www.hospitalresearch.com.au/national-support-boosts-local-heart-care/
John Beltrame 16/1/2018	Study takes a stab at chest pain mystery	General Public	The Advertiser print and online article
Clementine Labrosicano 1/2/2018	Hospital Readmissions	General Public	Radio Interview - Coast FM 88.7
Tharshy Pasupathy 20/2/2018	Myocardial Infarction Research at BHI	Prospect Probus Club	THRF Talk
Rosanna Tavella 2/5/2018	Cardiac Procedures in SA – update from CADOSA	Drakes Showbag Thank you Morning Tea	THRF Talk
Rosanna Tavella 29/5/2018	Tablets or Stenting for stable heart disease	U3A Port Adelaide	THRF Talk
Tharshy Pasupathy 1/11/2018	What is MINOCA?	U3A Flinders	THRF Talk
ENDOCRINOLOGY UNIT			
David Jesudason 3/6/2018	Endocrinology	Pan Arcadian Club	THRF Talk
STROKE RESEARCH PROGRAMME			
Anne Hamilton-Bruce 9/6/2018	The Beauty of Biology	General Public	Opening speaker at launch at Burra Art Gallery
Anne Hamilton-Bruce & Austin Milton 9/6/2018	Stroke Research Programme	U3A	THRF Talk and Lab Tour

COMMUNITY ENGAGEMENT 2018

NAME OF INDIVIDUAL	TOPIC OR TITLE	DELIVERED TO	ACTIVITY
STROKE RESEARCH PROGRAMME cont.			
Simon Koblar 12/11/2018	Stroke Forum, SAHMRI	Members of public and professional researchers	Panel member
Chelsea Graham November/December	Help save the Tasmanian Devil	Crowdfunding with The University of Adelaide	The Advertiser online article, social media
THE HEALTH OBSERVATORY			
Robert Adams 9/7/2018	Social Jet Lag	General Public	Radio interviews and news stories including Australian Financial Review, Daily Mercury and The Coffs Coast Advocate
Sarah Appleton 9/9/2018	Obstructive Sleep Apnoea and links with heart disease	General Public	The Advertiser print and online article
HEALTH PERFORMANCE AND POLICY RESEARCH UNIT			
Dennis Horton 24/3/2018	Analyse this - how data gives doctors power to beat bugs	General Public	The Advertiser print and online article
INTENSIVE CARE MEDICINE RESEARCH GROUP			
Sandra Peake October	The Augmented versus Routine approach to Giving Energy Trial: A randomised controlled trial	General Public	Televised Interviews at European Society Intensive Care Medicine Congress and on-line articles
PSYCHIATRY RESEARCH GROUP			
Scott Clark 19/11/2018	The Impact of Psychosis on Diabetes Risk and Management	Adelaide Diabetes & Mental Health Network Meeting	Talk
Scott Clark 22/11/2018	Biological Mechanisms in Psychotic Disorders	General Public	RAH Research Showcase
RHEUMATOLOGY RESEARCH GROUP			
Catherine Hill 12/10/2018	Update on arthritis	General Public	World Arthritis Day Public Lecture at The University of Adelaide
THERAPEUTICS RESEARCH CENTRE			
Michael Roberts August	Performance Based Research Fund 2018-Quality Evaluation	New Zealand Government	Invited member of Health Panel for New Zealand
Suleman Khan October	Challenges and innovations of drug delivery in older age	General Public via UniSA website	UniSA's Talking Papers podcast series ► https://soundcloud.com/universitysa/talking-paper-challenges-and-innovations-of-drug-delivery-in-older-age
Amy Holmes November	Zinc oxide nanoparticle and sunscreen use	General Public	Radio Interview - ABC Sunshine Coast
Amy Holmes November	Sunscreen efficacy and safety	General Public	Radio Interview - ABC National Radio News
Amy Holmes November	Sunscreen efficacy and safety	General Public	TV News Interview - Channel 7
Michael Roberts December	Universities performance in Health Research	New Zealand Government	Invited Panel work



NAME OF INDIVIDUAL	TOPIC OR TITLE	DELIVERED TO	ACTIVITY
VIROLOGY GROUP			
Danushka Wijesundara 27/4/2018	Immunology	General Public	World 'Day of Immunology' Public Lecture at the BHI and Lab tour
Danushka Wijesundara May	Vaccine Research		Radio interview - Coast FM 88.7
ENT SURGERY			
Katharina Richter March	Winner of Fresh Science SA	General Public	TV interviews on Channel 9, ABC. Radio interviews on The World Today, FIVEaa, Triple J, ABC. Print/online articles in The Lead, The Advertiser, ABC News
PJ Wormald & Sarah Vreugde 28/3/2018	Prawn shells helping peel back the pain of scarring	General Public	The Advertiser print and online article
Katharina Richter 14-16 May	'Pint of Science' Festival, science talks in pubs	General Public	SA Coordinator of 3 night festival. ABC Radio AM 891, Channel 9 TV interview
Katharina Richter July	Toxic snack kills superbugs	General Public	Scope TV (season 4, episode 57) on Tenplay/Channel 11 ► https://www.youtube.com/watch?v=4-BH9pMwles ► https://tenplay.com.au/channel-eleven/scope/season-4/episode-57 from 17min32sec

Dr Dan Wijesundara (Virology Group) shows Bianka Uzelac around the BHI Laboratories during The Day of Immunology event.

COMMUNITY ENGAGEMENT 2018

NAME OF INDIVIDUAL	TOPIC OR TITLE	DELIVERED TO	ACTIVITY
ENT SURGERY cont.			
Katharina Richter August	Science for Big and Little Kids	General Public	Public speaker for the National Science Week, Hut Community Centre, Stirling
Katharina Richter October	The University Adelaide staff, students, alumni, distinguished guests	MC for the 120 th Anniversary of Howard Florey dinner	
Katharina Richter December		General Public	Radio interview - 5AA AM 1395 Rilka Warbanoff
INFLAMMATORY BOWEL DISEASE RESEARCH GROUP			
Sam Costello & Rob Bryant March	Gut Health	General Public	Radio Interview - 5AA 1395 AM
Sam Costello 21/3/2018	You need guts to donate poo	General Public	The Advertiser print and online article
Sam Costello 21/3/2018	Getting to the bottom of gut health	General Public	THRF online article ► https://www.hospitalresearch.com.au/getting-bottom-gut-health/
Sam Costello April	Faecal Microbiota Transplantation	General Public	Radio Interview - ABC 891 AM

SUPPORT STRUCTURES 2018



The Basil Hetzel Institute (BHI) Policy Committee provides strategic advice for the running of the BHI and optimises the available support for research programs across The Queen Elizabeth Hospital (TQEH).

The Committee is comprised of senior representatives from:

- The two universities with whom the hospital has strong affiliations, The University of Adelaide and the University of South Australia
- University of Adelaide academic heads of departments at TQEH (Medicine and Surgery)
- Chair, Strategic Research Directions Working Group
- Chair, BHI Management Committee
- BHI Facility Manager
- TQEH scientific community

CURRENT MEMBERS DECEMBER 2018

Professor Guy Maddern
Professor John Beltrame
Professor Alastair Burt (proxy Professor Andrew Zannettino)
Professor Susan Hillier
Professor Michael Roberts (proxy Dr Lorraine Mackenzie)
Professor Eric Gowans
Dr Rosanna Tavella
Dr Prue Cowled
Dr Peter Zalewski
Dr Dan Wijesundara
Dr Chandra Kirana
Associate Professor Anne Hamilton-Bruce
Mr Paul Flynn
Ms Kathryn Hudson
Dr Rebecca Anderson
Executive Support: Ms Gwenda Graves

BHI MANAGEMENT COMMITTEE

THE INSTITUTE LEVEL	REPRESENTATIVE
Level 1	Dr Sarah Vreugde Dr Chandra Kirana Dr Clare Cooksley Dr Dan Wijesundara (ECR position) Dr Kevin Fenix (ECR position)
Level 2	Dr Lorraine Mackenzie Ms Irene Stafford
Surgical Suite	Mr Matthew Smith
External Representative	Dr Tony Cambareri
Postgraduate Representatives	Level 1 Mr Christopher DiFelice (July 2017 – June 2018) Ms Maddison Archer (July 2017 – June 2018) Ms Sarah Bernhardt (July 2018- June 2019) Mr Joe Wrin (July 2018- June 2019) Level 2 Ms Zenab Dudhwala (July 2016 – June 2018) Ms Clementine Labroschiano (July 2018- June 2019)
Chair	Dr Rosanna Tavella (Aug 2017 – June 2020)
BHI Facility Manager	Ms Kathryn Hudson
Executive Support	Ms Gwenda Graves

Top: Members of the BHI Management Committee 2018.

SUPPORT STRUCTURES 2018

Several sub-committees assist The Institute (BHI) Policy Committee as required, notably the:

- **Research Expo Organising Committee**, chaired by Lisa Leopardi, and also supported by co-chair, Dr Prue Cowled, both from The University of Adelaide Discipline of Surgery, in the planning and running of the 2 day Research Expo in 2018.
- **BHI Scholarship Selection Committee**, chaired by Professor Maddern, in awarding a range of scholarships funded by The Hospital Research Foundation.
- **BHI Management Committee**, in managing the Basil Hetzel Institute, chaired by Dr Rosanna Tavella.
- **The Basil Hetzel Institute Strategic Research Directions Group** provides a forum for BHI researchers to interact and discuss Institute issues and initiatives as well as focus on academic issues such as teaching and postgraduate student recruitment and completions. It reports to The Institute (BHI) Policy Committee, and provided recommendations to The Hospital Research Foundation on the 2018 funding framework.

All TQEH researchers at Associate Professor level, Postgraduate coordinators, Heads of departments, and Chief Investigators on Category 1 grants are eligible to attend each forum, as well as a postdoctoral representative. Professor Eric Gowans has chaired the group since 2012, with Executive Support provided.

Professor Guy Maddern was reappointed for a five-year term to the position of Director of Research (April 2015-31 March 2020). This leadership position has been critical to furthering the aims of research excellence and enhancing the research reputation of TQEH.

TQEH Research Secretariat undertakes a range of activities to assist the Director of Research in supporting, fostering and administering quality research activity across TQEH.

SEMINARS

A number of regular seminar programs were held in 2018, including:

- **Postgraduate Research seminars** which provided all BHI based higher degree students an opportunity annually to brief staff and students on the progress of their research.
- **Invited external speaker research seminars**, held weekly between April and the beginning of October 2018, and chaired by postdoctoral and senior researchers. The Research Secretariat coordinated this program;
- **Staff seminars**, coordinated by Dr Chandra Kirana, provided new and existing staff an opportunity to brief other BHI staff and students about their research.

Thanks are extended to the Chairs, coordinators and staff and students for supporting these important programs.

RESEARCH TRAINING

The BHI Policy Committee aims to support the research capacity within basic and clinical areas through its strategy of providing a number of scholarships at postgraduate, Honours and Vacation levels.

Promotion

In 2018 research training opportunities and scholarship support were actively promoted through the BHI website with links to key university research training sites.

Vacation Research Scholarships

Over the 2018-2019 summer vacation, 11 undergraduate placements provided scholars with the opportunity to gain valuable research experience in a clinical/laboratory environment. These placements were funded by individual departments and The Hospital Research Foundation.

Honours Research Scholarships

Honours Scholarships continued to be offered at TQEH in 2018 and will continue to be supported through The Hospital Research Foundation.

Higher Research Degree Scholarships

In 2018 over ninety scholars undertook research towards Higher Degrees at TQEH, with seven students supported either through The Hospital Research Foundation (THRF) 3 year Scholarships, Top Up or half Scholarships. Selection and award of THRF Honours and Postgraduate scholarships in 2018 was primarily the responsibility of the BHI Scholarship Selection Committee.

The Committee draws representatives from clinical academic and scientist streams, with both The University of Adelaide and University of South Australia represented. Scholarships provide stipends that match the Research Training Program Scholarship (RTPS) rate. Other higher degree students at TQEH had scholarship support from a range of funding bodies, including NHMRC, The University of Adelaide and University of South Australia (International scholarships, RTPS, and The University of Adelaide Faculty of Health and Medical Sciences 'Divisional' scholarships).

STATISTICAL SUPPORT SERVICE, TQEH

The Statistical Support Service, jointly funded by BHI and the Faculty of Health Sciences at the University of Adelaide, provided 7.5 hours per week on site of statistical assistance to staff and students at the BHI and TQEH more generally. In 2018 the Statistical Service was provided by Dr Stuart Howell of the Data, Design and Statistics Service, Adelaide Health Technology Assessment (AHTA), School of Public Health at The University of Adelaide.

The range of services has included advice to research staff and postgraduate students about:

- Design of health-related research
- Statistical aspects of research programs
- Preparing data for analysis
- Data analysis
- Manuscript preparation
- Analysis of data from research programs based at BHI and TQEH.

CALHN HREC AND RESEARCH OFFICE REPORT 2018



It has been particularly beneficial for the HREC Chair to be regularly on-site at the Basil Hetzel Institute where researchers are able to drop in to ask questions and discuss their studies.



2

2018 saw the first year of operation of the Central Adelaide Local Health Network Human Research Ethics Committee (CALHN HREC) the new HREC formed from the merger of the Human Research Ethics Committee (TQEH/LMH/MH) and the RAH Research Ethics Committee.

Taking on the CALHN HREC Chair role following previous work external to state government has presented unique challenges and opportunities. The large tertiary hospitals within CALHN and NALHN provide a significant opportunity for clinical research, and it is positive to see strong research collaborations with academic and external research institutions. It has been particularly beneficial for the HREC Chair to be regularly on-site at the Basil Hetzel Institute where researchers are able to drop in to ask questions and discuss their studies.

On behalf of the members of the two HRECs and the CALHN Research Office, we would like to thank Associate Professor Andrew Thornton and Professor Richard Ruffin for their outstanding dedication to the RAH REC and Human Research Ethics Committee (TQEH/LMH/MH) respectively, and for their continued support for research in CALHN and NALHN.

In 2018 the HREC has welcomed new legal, pastoral care, statistician and nurse clinician members. Thank you to all members for their contribution to the HREC this year, and in particular, to those members of the two HRECs who have continued their representation on the new merged HREC.

The Investigational Drug Sub-Committee (IDSC) has continued in 2018 with a new Chair appointment Dr Rami Tadros. The IDSC provides valuable support for the HREC through its thorough scientific and pharmacological review of studies involving investigative drug administration. Our thanks to Executive Officer Peter Slobodian and Ada Lam for their work in supporting the running of the IDSC.

In July Heather O'Dea announced her retirement from the CALHN Research Office. Heather has been a stalwart of human ethics administration in CALHN for over 10 years and we wish her all the very best for the future.

The CALHN Research Office is committed to training and development, both for Human Research Ethics Committee

members, and for researchers working across the health networks. All new HREC members have had the opportunity for ongoing training on issues relating to ethical review. We have also received excellent feedback on the two Good Clinical Practice Awareness training sessions held by the Research Office this year and will be running additional quarterly sessions in 2019 at BHI and RAH.

This year the CALHN Research Office has commenced and completed an audit of annual reporting for investigator-initiated studies in CALHN. Ongoing monitoring of the progress of research studies is essential for maintaining high ethical standards of research conduct, and will be a key focus of the CALHN Research Office in 2019.

In 2019 the CALHN HREC will have two submission dates and two meeting dates. Each meeting group will have a full quorum as prescribed by the NH&MRC and researchers can submit an application to either meeting group. The CALHN Research Office will continue to be available to assist with any queries relating to research ethics, governance and finance.

We wish everyone a relaxing holiday break and look forward to seeing the research to come in CALHN and NALHN in 2019.

IAN TINDALL

CALHN HREC Chair (pictured)

BERNADETTE SWART

CALHN Research Office Manager

CEO Report

THRF Grants and Fellowships

BHI Research Equipment

Additional Sponsorship

Community Engagement



THE HOSPITAL RESEARCH FOUNDATION

**BECAUSE OF YOU
WE CAN BRING HOPE
FOR BETTER CARE,
TREATMENTS AND
CURES.**

For over 50 years, The Hospital Research Foundation has supported world-leading medical research that translates into the prevention of disease, the relief of suffering, improved patient care and restoration of health and wellness for all in our community.

In 2018 we awarded \$2.53 million in grant funding to researchers based out of the BHI and TQEH in many different areas including new treatments for colorectal cancer, improving post-surgery outcomes and heart failure in diabetes.



It has been an incredible year of growth for The Hospital Research Foundation (THRF), enabling us to support even more world-class medical research and patient care initiatives which translates to save lives.

Thanks to the generous support of the South Australian public through regular donations and the Hospital Research Home Lottery, we have been able to provide more than \$24 million in funding to a range of projects and equipment to improve healthcare in South Australia.

This is by far our largest ever commitment and helps us meet the huge need in our community for these funds.

While we have been expanding the areas we support, we are still hugely committed to the Basil Hetzel Institute (BHI) and The Queen Elizabeth Hospital (TQEH).

In 2018 we awarded \$2.53 million in grant funding to researchers based at the BHI and TQEH in many different areas including new treatments for colorectal cancer, improving post-surgery outcomes and heart failure in diabetes.

A further \$80,000 was provided for new equipment, helping to increase the BHI's cryogenic storage capacity and to purchase an echocardiatic probe to assist with heart research.

We also announced funding for four BHI/TQEH specific PhD scholarships, in addition to holding our first ever statewide PhD scholarship grant round. We are proud to be contributing over \$1 million towards postgraduate scholarships in the coming years for students focusing on clinical and scientific medical research. Congratulations to the postgraduates who received these scholarships, you are the future of research and we look forward to supporting you through your studies to improve clinical and medical outcomes for patients.

Being able to demonstrate how research translates 'from bench to bedside' is a key focus for THRF. We are committed to enhancing the health and wellbeing of our family, friends and the broader community through the provision of improved treatments and care informed by the latest research outcomes.

The examples outlined in this report demonstrate the incredible impact we are having on patients' lives. We thank our donors, supporters, partners and researchers for making this possible.

Looking forward to 2019, we anticipate even more growth which will enable us to provide an even greater impact in our community through vital medical research and improved patient care.

Thank you for your ongoing dedication to this cause. Together we can save lives.

PAUL FLYNN
CEO

THE HOSPITAL RESEARCH FOUNDATION

Early Career Fellowships



Each year THRF proudly provides financial support to vital medical and clinical research teams and individuals whose endeavours translate into improved treatments and healthcare outcomes for the South Australian community.

In 2018, research grants were awarded to the BHI in the form of Early Career and Mid Career Fellowships, Translational Grants, Development Grants, Project Grants and Postgraduate Scholarships.

Improving the effectiveness of infection control after surgery

\$240,000 / two years

Dr Katharina Richter

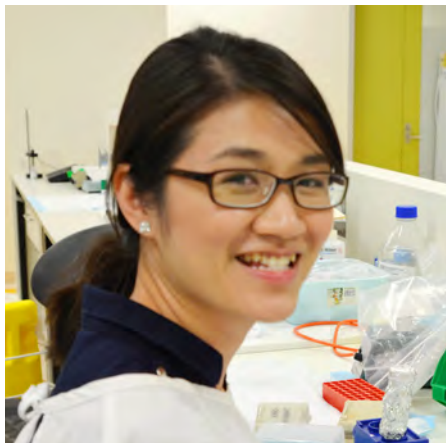
Infections and non-healing wounds after sinus and orthopaedic surgery are frequently linked to antibiotic-resistant bacteria called superbugs.

Dr Richter has developed an antibiotic-free wound healing gel that is applied locally at the site of infection to destroy the superbugs. A clinical trial on the gel is ongoing at TQEH and based on the first clinical outcomes and insights, this funding allows for the treatment to be refined.

► [Read more on page 66](#)

Dr Katharina Richter
ENT Surgery

Early Career Fellowships cont.



A new strategy to prevent heart failure in diabetes

\$240,000 / two years

Dr Cher-Rin Chong

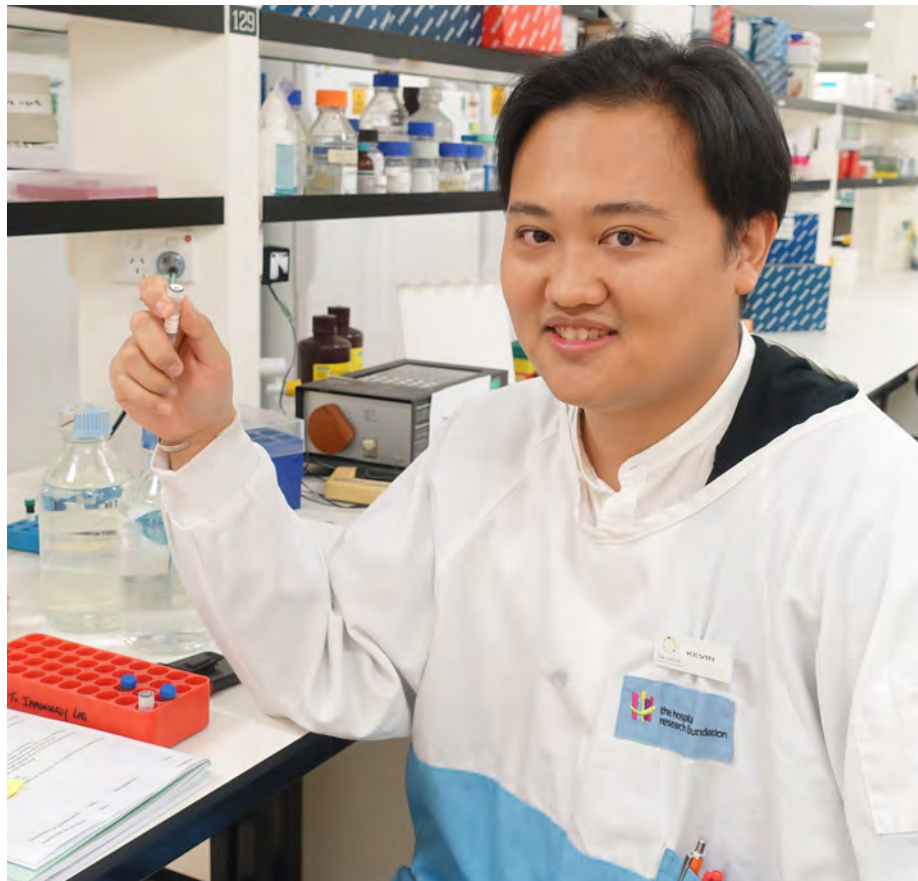
Patients with diabetes are at increased risk of heart attacks, blood clots and heart failure, possibly because the diabetic heart "runs out of energy" as it has reduced capacity to metabolise carbohydrates such as glucose.

Overactivation of an enzyme called PARP-1 could be responsible for this increased risk. This study is using non-invasive imaging techniques to determine whether PARP-1 activation is responsible for the impairment of heart function in diabetics.

It may be possible that a PARP-1 inhibitor therapy could become a routine form of treatment in patients with diabetes to prevent heart disease.

► [Read more on page 41](#)

Dr Cher-Rin Chong
Cardiovascular Pathophysiology and
Therapeutics Group



Using Tissue-Resident T cells to develop new prognostics and treatments against bowel cancer

\$240,000 / two years

Dr Kevin Fenix

Colorectal cancer (CRC) is the second most common form of cancer in Australia. The majority of people who die from CRC, die because the cancer metastasises and spreads to the liver.

Therefore there is urgent clinical need to (1) define improved diagnostic markers to reduce death rates by identifying metastasising cancers earlier, and (2) identify improved treatments that can

prevent the spread of CRC to the liver and treat existing liver metastasis.

This research is analysing tumour Tissue-Resident T cells with the aim to open new avenues to address these needs.

► [Read more on page 25](#)

Dr Kevin Fenix
Liver Metastasis Research Group

Mid Career Fellowships



Improving sleep and coping in inpatients to improve clinical outcomes and reduce hospital readmissions

\$480,000 / three years

Dr Helen Stallman

Sleep and coping problems are the main causes of psychological distress in hospital inpatients.

This project is testing whether an innovative psychological intervention developed by Dr Stallman called ‘Care · Collaborate · Connect’ will result in improved mood regulation and subsequent improvements in health outcomes.

The program uses current research to understand distress, coping and health; and normalises distress and coping. It is a brief and easily learnt program which can be applied by a range of health professionals and laypeople.

Dr Helen Stallman
The Health Observatory



A Trojan Horse strategy for antimicrobial biologicals

\$540,000 / three years

Dr Nicky Thomas

Chronic infections in wounds have a huge socioeconomic burden worldwide with alternative approaches to combat resistant bacteria required.

Antimicrobial bioactives and peptides provide opportunities to treat recurring infectious diseases, and when co-administered with antibiotics, could eradicate the infection.

This project is evaluating the use of Trojan Horse strategies (where the attack is hidden in a carrier) as a smart delivery of these antimicrobial bioactives.

Dr Nicky Thomas
ENT Surgery

Development Grant



A novel medicated resorbable adhesion barrier device for use in abdominal surgery

\$150,000 / one year

Professor Peter-John Wormald
Professor Guy Maddern
Associate Professor Sarah Vreugde

Adhesions following abdominal surgery are common with up to 17 per cent of patients requiring repeat surgeries to remove adhesions. To date, no treatment exists to prevent these adhesions and the repeat surgeries to remove them generate complications in 19 per cent of patients, with some being fatal.

This project is testing the safety and efficacy of a surgical gel, Chitogel® (delivered through a device called Def-GaPP-Chitogel) to prevent adhesions during abdominal surgery.

Professor Peter-John Wormald
ENT Surgery

Project Grant



Broken Sleep – Broken Heart? Longitudinal follow-up of cardiovascular and cognitive outcomes in middle aged and older men in North-West Adelaide

\$140,000 / one year

Dr Sarah Appleton
Professor Robert Adams
Professor John Beltrame

Sleep problems cost Australia up to \$66 billion annually, of which \$6 billion is directly attributable to obstructive sleep apnea (OSA). OSA can also lead to the development of cardiovascular disease (CVD).

Dr Appleton and her team have already conducted an initial study of 1,021 men with OSA, however this funding allows for follow-ups to be conducted with the men with mild OSA, to see whether they have progressed to a severity where CVD risks become evident.

Dr Sarah Appleton
The Health Observatory

Translational Grants



Safety, effectiveness of care and resource use among Australian hospitals (SAFER Hospitals)

\$250,000 / one year

Dr Isuru Ranasinghe
Associate Professor Martin Gallagher
Associate Professor Ian Scott

Over 10 million hospitalisations occur every year and \$60 billion spent annually, however Australian hospitals do not routinely assess the longer-term results of that care, such as how many patients suffer complications, are re-admitted, or die.

This SAFER Hospitals study is a collaboration of clinicians, researchers, economists, data scientists and industry partners to address this knowledge gap. It will, for the first time in Australia, establish a strategic national data collection that will enable important outcomes of hospital care to be assessed.

Dr Isuru Ranasinghe
Health Performance and Policy Research Unit



A new treatment for cystic fibrosis chronic relapsing upper airway infections

\$250,000 / one year

Professor Peter-John Wormald
Associate Professor Sarah Vreudge
Dr Hesham Saleh

Chronic rhinosinusitis (CRS) affects approximately 15 per cent of the general population. CRS patients may also experience multidrug resistant *S. aureus* (MRSA), including cystic fibrosis (CF) and non-CF associated recalcitrant CRS patients.

Building on the excellent results obtained by Professor Wormald and his team in comprehensive pilot studies, this funding will help develop a therapy for MRSA infections in patients suffering from CRS (CF and non-CF).

► [Read more on page 65](#)

Professor Peter-John Wormald
ENT Surgery

PhD Scholarships



Outcomes of catheter ablation for treatment of atrial fibrillation in Australia: a population-wide study

Dr Linh Ngo

Supervised by Professor Robert Adams, Dr Isuru Ranasinghe, Associate Professor Anand Ganesan

Atrial fibrillation (AF) is a condition affecting the heart, making it beat out of rhythm and increasing the risk of stroke and heart failure. Catheter ablation is the main treatment for AF patients who have debilitating symptoms or poor heart rate control, however population-wide studies that outline the use and outcomes of catheter ablation are rare.

This project is examining the early procedure-related complications and long-term outcomes of catheter ablation, identifying the factors associated with poor outcomes, and assessing procedural variation. The results will greater inform patients of the risks and benefits of catheter ablation, help care for patients undergoing treatment and encourage quality improvement efforts.

Dr Linh Ngo

Health Performance and Policy Research Unit



Development of targeted nanoparticles as preventative therapy for liver metastasis

Gohar Shaghayegh

Supervised by Professor Guy Maddern, Dr Ehud Hauben, Professor Nico Voelker

Colorectal cancer (CRC) is the second most common form of cancer in Australia, with more than 50 per cent of patients also developing liver metastases. Despite improvements in chemotherapies and biological agents, survival is rarely longer than three years.

The aim of this project is to use targeted nanoparticles as vehicles to manipulate an immunotolerant antigen in bowel tumours and liver metastases, and ultimately improve outcomes for patients.

Gohar Shaghayegh

Liver Metastasis Research Group



Chitosandextran (Chitodex) gel with and without deferiprone and Gallium Protoporphyrin: wound healing and postoperative outcomes in chronic rhinosinusitis

Dr Rajan Sundaresean VEDIAPPAN

Supervised by Professor PJ Wormald, Associate Professor Alkis Psaltis, Associate Professor Sarah Vreugde

Chronic rhinosinusitis (CRS) affects approximately 15 per cent of the general population. Patients who do not respond to oral and topical steroids, antibiotics and nasal lavage can undergo surgery, however in some cases CRS still persists after surgery.

The purpose of this study is to further develop a dissolvable nasal dressing (Chitodex gel) to improve outcomes in patients with CRS, with the ultimate goal to develop a product that will encompass all aspects of postoperative care following a sinus operation.

Dr Rajan Sundaresean VEDIAPPAN
ENT Surgery

Travel Grants

THRF provided funds for 11 researchers from the BHI to attend conferences throughout the year to share their research, build collaborations and expand their knowledge.

Dr Eric Smith and Helen Palethorpe
30th Lorne Cancer Conference, Victoria,
February 2018

Dr Branka Grubor-Bauk
13th Annual Australian Centre for HIV and
Hepatitis Virology Research Scientific
Workshop, Yarra Valley, Victoria, June 2018

Dr Saifei Liu
66th Cardiac Society of Australia and
New Zealand Annual Scientific Meeting,
Brisbane, August 2018

Dr Saranya Hariharaputhiran
66th Cardiac Society of Australia and
New Zealand Annual Scientific Meeting,
Brisbane, August 2018

Rong Hu
16th International Congress of Therapeutic
Drug Monitoring and Clinical Toxicology,
Brisbane, September 2018

Zelalem Mekonnen
International Symposium on Hepatitis C
Virus and Related Viruses, Dublin, Ireland,
October 2018

Dr Makutiro Masavuli
International Symposium on Hepatitis C
Virus and Related Viruses, Dublin, Ireland,
October 2018

Dr Lisa Cherian
Skull Base Workshop at the Ohio and
American Rhinology Society Conference,
Atlanta, USA, October 2018

Dr Sivabaskari Pasupathy
American Heart Association Scientific
Sessions, Chicago, USA,
November 2018

Dr Thanh Ha Nguyen
American Heart Association Scientific
Sessions, Chicago, USA,
November 2018



I had the opportunity to present the results of my research where I was privileged to be selected as a finalist for the Heart Failure prize. This travel experience helped me interact personally with researchers from around Australia and New Zealand, which could in future develop into potential collaborations. I would like to thank THRF for giving me the opportunity to attend the meeting.

Dr Saranya Hariharaputhiran



I am grateful for THRF for awarding me a national travel award, giving me the opportunity to obtain a more extensive understanding of the major issues currently confronting cardiologists.

Dr Saifei Liu

BHI Research Equipment

THRF is proud to fund advanced medical equipment for BHI researchers to ensure they have access to the best possible tools to conduct their lifesaving research.



In 2018, THRF supported the purchase of the following equipment:

Cryotank

\$28,000 from THRF
(total cost \$53,538)

An additional cryotank was purchased to double the size of the BHI's cryogenic storage facility.

The cryogenic facility is an extremely important piece of infrastructure required to continue health and medical research at the BHI, housing many significant biobank activities.

The original tank – donated by Professor Basil Hetzel AC in 2009 – was reaching capacity and another tank was needed.

Echocardiatic probe

\$54,000 from THRF
(total cost \$95,502)

An echocardiatic probe was purchased to support the work of Professor Betty Sallustio, Professor Andreas Evdokiou and Professor John Horowitz in their NHMRC funded project "Prevention of heart damage during anthracycline cancer".

The project aims to develop new therapies that protect the heart during cancer chemotherapy.

The probe is a non-invasive way to quickly and accurately assess the overall health of a subject's heart.

Joe Wrin, Breast Biology and Cancer Unit, with the original cryotank donated by Professor Basil Hetzel AC.

Additional Sponsorship

THRF continues to support additional activities at the BHI or involving BHI researchers.



In 2018, THRF sponsored the inaugural 'Day of Immunology Discovery Tour' in April, was platinum sponsor of ASMR (Australian Society for Medical Research) Medical Research Week, contributed to the three-night 'Pint of Science' Festival in May and sponsored the ASCEPT (Australasian Society of Clinical and Experimental Pharmacologists and Toxicologists) meeting in late November.

For the second year, THRF also sponsored two researchers to attend a full-day media and communications workshop run by 'Science in Public', along with another two researchers funded by the BHI.

This workshop was held at the BHI in May, and was attended by PhD student Sarah

Bernhardt, and postdoctoral researchers Drs Agathe Jadcak, Mahnaz Ramezanpour and Rosanna Tavella.

THRF also supported student run activities at the BHI and the three BHI 'Talking Heads' seminars held during the year.

Finally, THRF proudly continues to be the major sponsor of the annual TQEH Research Expo (formerly TQEH Research Day) held each October.

'Science in Public' hosted one of their media workshops in May, 2018.





TQEH Fundraising Gala

The wonderful staff at TQEH, led by Luisa Richards, organised the inaugural TQEH Staff Ball and raised an incredible \$6,000 towards the BHI and TQEH.

The staff arranged a Fundraising Gala on Friday 12 October 2018 at the Adelaide Entertainment Centre.

The night included a three-course meal, raffles and a silent auction with many items up for grabs.

“The idea for this event arose from a small group of nurses and doctors at TQEH who wanted to build camaraderie, boost morale and connect with and support our colleagues in the hospital,” Luisa said.

“It began conceptually as an event to foster social interaction, but evolved into an opportunity to contribute back to the BHI and TQEH.”

All proceeds from the night will go directly towards research at the BHI and TQEH.

A Moscato Mission for Breast Cancer Research

A strong sense of community spirit flows through one of Australia’s oldest wineries, Seppeltsfield. It is the same spirit that inspired the employees of this renowned winery to begin their mission of raising funds for THRF’s charitable affiliate – Australian Breast Cancer Research (ABCR).

In line with Breast Cancer Awareness month in October, the South Australian winery donated 50 per cent of each bottle of Seppeltsfield Barossa Moscato sold, raising an incredible \$10,317.

Many Seppeltsfield employees have been affected by breast cancer in some way, which was the main motivation for the team to raise funds towards breast cancer research.

Sales and Marketing Manager Chad Elson said it was an immediate choice for ABCR to be their beneficiary during Breast Cancer Awareness month.

On top of being able to contribute to ABCR’s fundraising, it has given our team a real sense of pride.

Chad Elson

“With several employees having family members directly affected by breast cancer, we felt partnering with ABCR through Moscato Mission to raise funds for breast cancer research would align strongly to our community principles,” Chad explained.

THRF is grateful for the support from Seppeltsfield which will benefit researchers at the BHI working tirelessly to stop the heartbreak of breast cancer.

The employees of Seppeltsfield with THRF’s Jody Stead and Fiona Smithson.



\$22,186 towards research and patient care thanks to the continuous support of Drakes Supermarkets

Continuous Generosity from Drakes Supermarkets

THRF was grateful to receive an incredible \$22,186 towards research and patient care thanks to the continuous support of Drakes Supermarkets, their suppliers and the South Australian community.

This generous amount was raised from sales of the popular Drakes Supermarkets Charity Show Bags during the 2018 Royal Adelaide Show. Drakes Supermarkets CEO Roger Drake and wife Wendy have produced this show bag for almost 20 years – an incredible effort which is supported by the generosity of their South Australian suppliers.

A special mention to Dr Rosanna Tavella who was one of the guest speakers at the morning tea, discussing her current research findings thanks to CADOSA (Coronary Angiogram Database Of South Australia).

L-R: Roger Drake, **Dr Rosanna Tavella**, THRF's Fiona Smithson and Antonia Costa, and Wendy Drake at the morning tea.

Vietnamese Community Fundraises for TQEH

A dedicated group of supporters, the Vietnamese Community Volunteer Group, raised an incredible \$30,100 towards TQEH on Friday 16 November 2018.

Thanh Nguyen and Ngoc Chi organised a Community Dinner Dance at Adelaide's Angkor Hall, raising funds for TQEH.

Many members of the Vietnamese community have used TQEH facilities since migrating and feel very passionate about giving back.

The group believes that the hospital serves all people, no matter where they come from, and the fundraiser was a way to say thank you and support the people who have given them such great opportunities in Australia.



THRF employees Geoff Gower and Fiona Smithson (left) with CEO Paul Flynn (right) accepting the cheque from the Vietnamese Community Volunteer Group.



Community Awareness Program

As we continue engaging with our loyal donors, THRF's Community Awareness Program is an invaluable way for researchers and clinicians to connect with our donor community, showcasing how their funds are supporting world-class research.

This year, researchers from the BHI visited local community groups including Marion VIEW (Voice, Interests and Educations of Women) Club; the University of the 3rd Age Flinders, Port Adelaide and Campbelltown; Hawthorn Women's Group; Pan Arcadian Club; Reynella Seniors Club; Adelaide-Mitcham Prostate Cancer Club and Prospect Probus Club.

Our donors also had the opportunity to tour the BHI facility, giving researchers another chance to showcase where their research takes place. The topics covered in 2018 included:

- Bowel Cancer
- Breast Cancer
- Cardiovascular Disease
- Diabetes
- Healthy Ageing
- Liver Metastasis
- Prostate Cancer
- Stroke

Thank you to those who took time to attend each Community Presentation and discuss their research with each group, including:

Dr Agathe Daria Jadcak
Associate Professor Anne Hamilton-Bruce
Dr Austin Milton
Dr Danielle Taylor
Dr David Jesudason
Dr Ehud Hauben
Associate Professor Joanne Young
Dr Paul Drew
Dr Rosanna Tavella
Sarah Bernhardt
Dr Sivabaskari Pasupathy (Tharshy)
Associate Professor Wendy Ingman

Members of the Marion VIEW Club visited the BHI facility in June, 2018.



Brooke's Courageous Shave

After watching her loving aunty battle triple negative breast cancer, 16-year-old Brooke Webber decided she would raise funds towards THRF's charitable affiliate, Australian Breast Cancer Research, by shaving her head!

New Year's Eve is a time of celebration, but that wasn't the case for Brooke's aunty Deb who was diagnosed with breast cancer around that time in 2012.

"I'm very close to my aunty. She used to walk us to school each morning so when she was diagnosed with breast cancer and began treatment it was horrible watching her go through everything," Brooke said.

Wanting to support her aunty, Brooke decided she would shave her beautiful thick auburn hair and raise vital funds towards breast cancer research and she chose New Year's Eve 2017 as the big day.

Gathering her friends and family together for the occasion, Brooke raised \$3,000!

"I chose this day as it marked the end of one year and the beginning of the next. I wanted my aunty to forget the past and be hopeful for the future," Brooke said.

"It was lovely because it brought all of the women and their partners together and touched so many people. Everyone gave so willingly.

"I was very happy with the amount we raised!"

Brooke's Aunty Deb shaving her head and her mum Shannan watching her courageous daughter.

In the Media!

THRF was proud to coordinate a number of media opportunities for the BHI and TQEH in 2018. The following outcomes were achieved, showcasing the exciting work of researchers throughout the year!

Print

Four year study into chest pain

Story in The Advertiser on Professor John Beltrame's (TVFRC) NHMRC Partnerships Grant
16 January, 2018

You need guts to donate poo

Story in The Advertiser on BiomeBank's Dr Sam Costello (Inflammatory Bowel Disease Research Group)
20 March, 2018

Yes, you can die from a broken heart

Story in The Advertiser on Sven Surikow (Cardiovascular Pathophysiology and Therapeutics Group)
22 March, 2018

Prawn shells helping peel back the pain of scarring

Story in The Advertiser on THRF Development Grant awarded to Professor PJ Wormald (ENT Surgery)
27 March, 2018

Miracle workers

Double page spread in The Advertiser on Adelaide-based medical research featuring three BHI research projects (Professor Andreas Evdokiou (Breast Cancer Research Unit), Associate Professor Wendy Ingman (Breast Biology and Cancer Unit) and Dr Anupam Gupta (Adelaide-GTRAC)
7 April, 2018

Scientists slaying superbugs

Story in The Advertiser on THRF Early Career Fellow Dr Katharina Richter (ENT Surgery)
1 September, 2018

Obesity link to breast cancer

Story in The Advertiser on Flinders University study, quoting THRF Breast Cancer Research Fellow Associate Professor Wendy Ingman (Breast Biology and Cancer Unit)
9 September, 2018

Prawn shells helping peel back the pain of scarring

ELISA BLACK
RESEARCH REPORTER



WHILE surgery for herniated disc pain is a last resort for many suffering from excruciating back pain, up to 40 per cent of those going under the knife will suffer chronic post-operative pain.

Scarring and adhesions are the reason why so many continue to suffer pain post-surgery but there are no therapies to help relieve their pain.

Until now, a research team at Woodville's Basil Hetzel Institute has discovered a gel — made from the chitosan found in prawn shells currently used to treat nasal inflammation following surgery — can also be used to prevent scarring following routine back surgery. This innovative gel will soon be available to patients through a clinical trial.

Research associate professor Sarah Vreugde says the gel prevents scarring mainly because it forms a barrier between different sides of the wound that, when in contact, can 'fuse' and form adhesions. "More than 800,000 spine surgeries occur annually globally and provide relief in some

cases," Professor Vreugde says. "The key is prevention of adhesions from forming."

"However, there are no approaches or products on the market that can do this. Once adhesions are present and cause severe pain, patients receive standard pain medication but, if not sufficient, they may need a second operation just to remove the adhesions."

It's hoped the gel — which also has a medication usually used to treat some forms of anaemia added to it — will improve wound healing and prevent the adhesions from forming, greatly improving the lives of those post-surgery.

Even those with shellfish allergy could potentially be able to use the product.

READ THE FULL SERIES:
ADVERTISER.COM.AU



PAIN RELIEF: Sarah Vreugde and Peter-John Wormald with a prawn. Picture: BIANCA DEMARCHI

While you weren't sleeping

Story in The Advertiser on THRF Project Grant awarded to Dr Sarah Appleton (The Health Observatory)
10 September, 2018

Television

Story on Channel 10 News (Adelaide and Melbourne) on Dr Anupam Gupta's (Adelaide-GTRAC Centre, Clinician and PhD student) Botox for Spasticity Clinical Trial
1 March, 2018

Story on Channel 10 News (Adelaide) on BHI Alumni Dr Victor Lamin (interviewed at the BHI), completed his PhD with the Translational Vascular Function Research Collaborative
13 August, 2018

YOU NEED GUTS TO DONATE POO

Sifting through Number Twos is a top priority for Adelaide researchers. And you won't quite believe what they're doing with it. ELISA BLACK reports

If you're a fan of the hit TV show *Shameless*, you'll know that the show's main character, Frank Gallagher, is a bit of a mess. But in the real world, there's a lot more to the story. In a recent episode, Frank is shown in a wheelchair, struggling to get around. This is a real-life story of a man who has been living with a rare genetic condition called *Spinaflex*. The condition is caused by a mutation in the *COL1A1* gene, which is responsible for producing collagen, a protein that gives our skin and bones their strength. Frank's condition is a form of *osteogenesis imperfecta*, a rare genetic disorder that affects the bones. It's a condition that can be life-threatening, but with the right care, people can live long and healthy lives. Frank is a testament to the power of resilience and the importance of medical research. He's a reminder that even the most difficult challenges can be overcome with the right support and care.



Spinaflex: Stephen Harrison had a rare genetic condition.

WILD SCIENCE

Adelaide researchers are sifting through Number Twos in a top priority for Adelaide researchers. And you won't quite believe what they're doing with it. ELISA BLACK reports

In the Media! cont.



Online

Faecal transplant can stop deadly *C.Diff* infection – if you can stomach it

Story on AdelaideNow and Cairns Post Online
20 March, 2018

Yes you can die from a broken heart

Story in The Advertiser on Sven Surikow
(Cardiovascular Pathophysiology and
Therapeutics Group)
22 March, 2018

**Prawn shells helping peel back the pain
of scarring**

Story on AdelaideNow on THRF
Development Grant awarded to Professor
PJ Wormald (ENT Surgery)
27 March, 2018

**Adelaide scientists finding ways to beat
superbugs as they evolve resistance to
standard antibiotics**

Story on AdelaideNow on THRF Early Career
Fellow, Dr Katharina Richter (ENT Surgery)
31 August, 2018

**Study examining how obstructive sleep
apnoea changes over time, links to
heart disease**

Story on Townsville Bulletin online on THRF
Project Grant awarded to Dr Sarah Appleton
(The Health Observatory)
9 September, 2018

Radio

Clementine Labroschiano

(PhD student, TVFRC) interviewed on
Coast FM
1 February, 2018

Dr Katharina Richter

(THRF Early Career Fellow, ENT Surgery)
interviewed on FIVEaa
11 March, 2018

Dr Bill Panagopolous

(THRF Early Career Fellow, Breast Cancer
Research Unit) interviewed on FIVEaa
18 March, 2018

Dr Kevin Fenix

(THRF Early Career Fellow, Liver Metastasis
Research Group) interviewed on Coast FM
5 July, 2018

Dr Irene Zinonos

(Postdoctoral Researcher, Breast Cancer
Research Unit) interviewed on FIVEaa
16 September, 2018

Associate Professor Wendy Ingman

(THRF Breast Cancer Research Fellow,
Breast Biology and Cancer Unit) interviewed
on Coast FM
4 October, 2018



Dr Danushka (Dan) Wijesundara

(THRF Early Career Research Fellow,
Virology Group) interviewed on Coast FM
1 November, 2018

Clementine Labroschiano (above), Dr Danushka
(Dan) Wijesundara (below) with Coast FM presenter
David Hearn.



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