

# Internal Medicine Services

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**Kate Mason**  
Executive Director  
Internal Medicine Services

Internal Medicine Services has a diverse and vibrant research culture that is imbedded within our departments and across disciplines. We are proud of the achievements of the staff in Internal Medicine that contribute to the body of knowledge that improves the care provided to our patients. This research covers pure scientific research to translating research outcomes into practice. It is a dynamic time to be in health and specifically at RBWH. Internal Medicine is involved in research collaborations with most academic institutions in Queensland and many of the research endeavours are multidisciplinary and multi-site. Due to the nature of many of our services medicines play a vital role in therapeutic management of our patients. Clinical trials of medicines play an important part of the research of new pharmaceuticals that will eventually be able to be used more broadly for patient treatment. The involvement of the Nuclear Medicine Department in the Herston Imaging Research Facility is exciting and at the cutting edge of diagnostic care. The depth of IMS research work presented at the annual RBWH Health care Symposium is indeed inspiring and one indicator of the extent of research activities throughout the service. Enquiring minds and curiosity will always encourage the best patient care outcomes in our service.



**Sandy Jamieson**  
Nursing Director  
Internal Medicine Services

## Department of Cardiology

The cardiology department has a broad investigator-driven research program with a focus on health service research and evaluation. Much of this research has grown from the efforts of clinicians to improve models of care with interdisciplinary collaboration within RBWH and with other centres nationally and internationally.

### Highlights of 2015:

The evaluation of chest pain has involved a collaboration with the emergency department and internal medicine, and resulted in numerous collaborations internationally, successful grant funding, and industry partnerships. We have unique cardiac obstetric (collaboration with Internal Medicine and Obstetric Medicine) and cardiac genetic (collaboration with Genetic Health Queensland) clinics that receive statewide referrals. We have steering committee membership on the European Cardiac Obstetric Registry (as the only Australian representative), and the Australian National Genetic Heart Disease Registry. Our research interests also include investigating ways to detect presymptomatic heart disease with the use of biomarkers (salivary program), initially in the setting of heart failure. We are also investigating the feasibility of training nurses to perform echocardiography to assess left ventricular function. We have a strong clinical trials research program and have been the lead national and global recruiting site for a number of multicentre trials.

### Benefits for clinical practice:

Research into the evaluation of patients presenting with chest pain is being actively translated into clinical practice throughout Queensland by the Health Innovation Fund supported Accelerated Chest pain Risk Evaluation (ACRE) clinical redesign project. This research is informing the evaluation of chest pain across Queensland and internationally. We have developed pathways to investigate families who have suffered a sudden death at a young age, which involves collaboration with clinical genetics, forensic pathology and the Coroner's office.

We have commenced a Cardiac Catheter Laboratory database with comprehensive mandatory complication tracking, which will inform the Queensland Cardiac Outcomes Registry and the Australian Cardiac Outcomes Registry. We informed the development of the statewide heart failure outcomes reporting (HERO) database, which was commenced in January 2015. This will track process and outcome measures of healthcare for all patients referred to heart failure nursing services in Queensland.

We are investigating the role of training echocardiography-naïve nursing staff to assess LV function. This could allow a paradigm shift of echocardiography to affordable population screening and disease monitoring. We are collaborating with a QUT-based group of researchers to investigate the role of salivary biomarkers in heart failure and cardiovascular disease detection. This may allow non-invasive and cost-effective early disease detection and monitoring in heart failure.

### Editorial positions:

Associate Editor, Heart Lung Circulation  
Editorial board for Cardiac Failure Review

### Supervised Post-graduate Research Students

Name	Current Studies University (duration)	Research Project Title	Supervisors (RBWH staff in bold)
Kris Guppy-Coles	PhD, UQ (2013–2017)	Novel 3D echocardiography techniques of left ventricular functional assessment: <i>Utilisation in routine clinical practice and screening</i>	<b>John Atherton, Sandhir Prasad</b> , Arnold Ng
Rohan Poulter	PhD, UQ (2012–2017)	Evaluating the diagnostic performance of dual energy cardiac computed tomography.	<b>John Atherton, John Younger</b>
Ada Lo	PhD, UQ (2014–2017)	Identification of new echocardiographic parameters in distinguishing between familial cardiomyopathy genotypic positive patients with and without phenotypic expression	<b>John Atherton</b> , Arnold Ng, William Wang
Victoria McCreanor	PhD, QUT (2016–2019)	Identifying high value care for stable coronary artery disease in Australia	Nick Graves, Adrian Barnett, <b>William Parsonage</b>

## Department of Cardiology (cont)

### Current RBWH Led Research Activity

RBWH Lead Researchers	Collaborative Researchers (RBWH staff in bold)	Research Project Title
Jonathan Hall, Michael Barras	<b>John Atherton, Serena Rofail, Mohnsina Khatun</b>	Mineralocorticoid receptor antagonists in heart failure: <i>Incidence of hyperkalaemia and the effect of GFR estimation</i>
Kris Guppy-Coles, John Atherton, Sandhir Prasad	<b>Arun Dahiya, Arnold Ng</b>	Novel 3D echocardiography techniques of left ventricular functional assessment: <i>Utilisation in routine clinical practice and screening</i>
Ada Lo, John Atherton	Arnold Ng, William Wang	Identification of new echocardiographic parameters in distinguishing between familial cardiomyopathy genotypic positive patients with and without phenotypic expression
Alison Mudge	<b>Charles Denaro, Adam Scott, Julie Adsett, Robert Mullins, George Javorsky, John Atherton, Paul Scuffham, Thomas Marwick, Peter O'Rourke</b>	A supervised exercise programme following hospitalisation for heart failure: <i>Does it add to disease management?</i>

### Other Current Collaborative Research Activity

Collaborative Lead Researchers	RBWH Researchers	Research Project Title
Mary Courtney, Jo Wu, Steven McPhail	John Atherton	The Cardiac/Diabetes TRANS-CARE Project
Jo Wu, Anne Chang, Mary Courtney, Esben Strodl, Steven McPhail (QUT)	John Atherton	Improving delivery by Ehealth-Assurance for Life (IDEAL)
Chamindie Punyadeera, Benjamin Schulz, Goce Dimeski, Karam Kostner (QUT)	John Atherton	Novel diagnostics for heart failure
Annabel Hickey, George Javorsky, Andrew Munns, Louise Marquart	Jessica Suna, John Atherton, Charles Denaro, Alison Mudge	Enhancing medication titration in patients with heart failure
Robyn Clark, Vincent Versace, Munir Chowdhury, Alexandra McCarthy, Bogda Koczwara, David Roder (Flinders University)	John Atherton	Characteristics of haematologic and breast cancer patients (1996-2009) who died of heart failure – related causes with and without a prior heart failure hospitalization – A linked health data analysis
Robyn Clark, Alexandra McCarthy, Robyn Peters (Metro South HHS)	John Atherton	A retrospective clinical audit of medical records to examine the journey through the healthcare system of patients who have developed cardiomyopathy after anticancer therapy
Robyn Clark, Alexandra McCarthy, Bogda Koczwara, Narelle Berry, Tania Marin, Kerri Gillespie, Jonathon Foote, Sina Vatandoust (Flinders University)	John Atherton	Development of a cardiotoxicity cardiovascular risk assessment tool
Dike Ojji, Karen Sliwa, Simon Stewart, Elena Libhaber, Bolaji Abdullahi, Ada Nwankwo, Alfa Jacob, Ngabea Murtala, Lionel Opie, Samuel Ajayi, Manmak Mamven (University of Abuja)	John Atherton	Studies of hypertension and heart failure in Nigeria
Adrienne O'Neil, Aaron Fisher, Katherine Kibbey, Felice Jacka, Mark Kotowicz, Lana Williams, Amanda Stuart, Michael Berk, Paul Lewandowski, Craig Taylor, Julie Pasco (University of Melbourne)	John Atherton	The addition of depression to the Framingham risk equation
Robyn Clark, Bronwyn Fredericks, Natahlia Buitendyk, Michael Adams, Jill Howie-Esquivel, Kathleen Dracup, Narelle Berry, Stella Johnson (Flinders University)	John Atherton	Development and feasibility testing of an education program to improve knowledge and self-care among Aboriginal and Torres Strait Islander patients with heart failure



## Department of Cardiology *(cont)*

### Current RBWH Led Research Activity *(cont)*

RBWH Lead Researchers	Collaborative Researchers <i>(RBWH staff in bold)</i>	Research Project Title
Sanjoy Paul, Olga Montvida Kerenaftali Klein, Julius Agbeve (QIMR Berghofer)	John Atherton	Evaluation of the association of old and new anti-diabetes drugs with the risk of heart failure in patients with type 2 diabetes
Joseph Selvanayagam, Sanjay Prasad, Andrew McGavigan, Graham Hillis, Werner Jung, Laurent Billot, Suchi Grover	John Atherton	Cardiovascular Magnetic Resonance GUIDEd management of mild-moderate left ventricular systolic Heart Failure (CMR GUIDE HF)
Richard Bagnall, Robert Weintraub, Jodie Ingles, Johan Duflo, Laura Yeates, Lien Lam, Andrew Davis, Tina Thompson, Vanessa Connell, Jennie Wallace, Charles Naylor, Jackie Crawford, Donald Love, Lavinia Hallam, Jodi White, Christopher Lawrence, Matthew Lynch, Natalie Morgan, Paul James, Desirée du Sart, Rajesh Puranik, Neil Langlois, Jitendra Vohra, Ingrid Winship, Jonathan. Skinner, Christopher Semsarian (University of Sydney)	John Atherton, Julie McGaughran	A prospective study of sudden death in the young

### Research Awards and Achievements

Recipient	Award	Event
John Atherton	Best Poster Diploma	European Society of Cardiology Congress 2015, London, UK
William Parsonage	MNHHS Research Awards	Awarded to the Emergency Cardiology Research Group



## Department of Clinical Pharmacology

The Department of Clinical Pharmacology has a number of research focuses, across multiple professional disciplines, reflecting the multidisciplinary makeup of the department. Research staff work collaboratively with the Department of Pharmacy, in areas related to medication safety, the quality use of medicines and the expanding professional role of pharmacists. Clinical Pharmacology continues to work collaboratively with other hospitals within Metro North Hospital and Health Service (TPCH) and Brisbane (PAH) relating, in particular, to the quality use of medicines. In addition, the department has begun to focus on the role of individualised feedback, of both nursing and medical staff, related to the safety of prescribing and administration of medicines. Karen Davies, Clinical Nurse Consultant for Medication Safety published results on a pilot study that demonstrated remarkable improvements in the safety of medication administration following immediate, individualised feedback on practice. Karen continues to pursue this work and has recently enrolled in PhD studies. Karen was a winner of Excellence in Performance and Best Clinical, Educational and Health Services Poster presentation at the 2015 RBWH Quarrie Awards for this work. Further, Dr Peter Donovan, Director of Clinical Pharmacology, was a chief investigator on a successful RBWH Hospital Foundation grant in 2015 that will expand upon pilot work that demonstrated similarly remarkable improvements in the accuracy and safety of medical officer prescribing after individualised feedback on prescribing practices. Dr Donovan continues to expand his research interests in the cost-effectiveness of health care and continues to work collaboratively with researchers from within and external to RBWH. In 2015, Dr Donovan completed some collaborative work with Dr Susan Jordan from QIMR Berghofer relating to nation-wide variations in chemotherapy for ovarian cancer.

### Supervised Post-graduate Research Students

Name	Current Studies University (duration)	Research Project Title	Supervisors (RBWH staff in bold)
Brooke Myers	PhD, UQ (2014-2016)	Role of the Pharmacist on the Medical Post-Take Ward Round	<b>Ian Coombes</b> , Charles Mitchell, <b>Peter Donovan</b> , Jennifer Whitty

### Current RBWH Led Research Activity

RBWH Lead Researchers	Collaborative Researchers (RBWH staff in bold)	Research Project Title
Peter Donovan (Clinical Pharmacology)	Christine Rowland (Greenslopes Private Hospital), <b>Emma Duncan (Endocrinology)</b> , <b>Alison Mudge (Internal Medicine)</b> , <b>Paul Tesar (Radiology)</b>	Teriparatide for Pelvic Fracture Healing
Peter Donovan (Clinical Pharmacology)	<b>Donald McLeod (Endocrinology)</b> , Louisa Gordon (QIMR Berghofer)	Cost Utility Analysis of the Primary Therapies for Graves' Disease
Donald McLeod (Endocrinology)	<b>Peter Donovan (Clinical Pharmacology)</b> , <b>Michael Keogh (Endocrinology)</b>	Treat-to-Target TRAb in Graves' Disease
Phillip Robinson (Rheumatology)	<b>Peter Donovan (Clinical Pharmacology)</b> , Nicola Dalbeth (University of Auckland, Auckland Hospital)	A Health Economic Analysis Of The American College Of Rheumatology Guideline To Monitor Serum Urate Every 6 Months After Reaching Target In Gout Treatment
Ian Coombes (Pharmacy)	<b>Peter Donovan (Clinical Pharmacology)</b> , <b>Michael Barras (Pharmacy)</b> , Charles Mitchel (UQ), Brooke Myers, Christy Noble, Trudy Teasdale, Linda Stockwell (Gold Coast University Hospital)	Improving Intern Medical Officer Prescribing through an Intervention of Self-Assessment and Feedback
Hannah Farquhar (Medicine)	<b>Don McLeod (Endocrinology)</b> , <b>Peter Donovan (Clinical Pharmacology)</b> , <b>Roger Allison (Cancer Care)</b> , <b>Susan Thomas (Cancer Care)</b> , <b>Lee Tripcony (Cancer Care)</b>	Validating a response to therapy risk stratification system for Medullary Thyroid Cancer

### Other Current Collaborative Research Activity

Collaborative Lead Researchers	RBWH Researchers	Research Project Title
Susan Jordan (QIMR Berghofer)	Peter Donovan (Clinical Pharmacology), Jeffrey Goh (Medical Oncology)	Variations in adjuvant chemotherapy and survival in women with epithelial ovarian cancer
Brooke Myers (Gold Coast University Hospital)	Ian Coombes (Pharmacy), Peter Donovan (Clinical Pharmacology)	Role of the Pharmacist on the Medical Post-Take Ward Round

## Department of Endocrinology

The Department of Endocrinology and Diabetes is staffed by 13 medical, two administrative, four allied health professionals, three research nurses, two diabetes nurse educators, one podiatrist, one dietitian and three scientists.

Clinical services provided include in-patient consultative services at RBWH and specialised out-patient clinics at RBWH and Bundaberg Hospital.

The department contributes to the Statewide Thyroid Cancer Clinic held with members of Cancer Care Services. It also supports the Obstetric Endocrine Clinic service for Women's and Newborn Services. It provides outreach services to Bundaberg and telehealth services in maternity health, endocrinology and complex Type 2 Diabetes to hospitals in the Central zone.

Clinical research activities include an active clinical trials unit. Chronic disease funding is underwriting projects in management of Diabetes in Pregnancy and Type 2 Diabetes. The Conjoint Endocrine Laboratories, a joint venture of Internal Medicine Services and Pathology Queensland undertakes studies at a basic science level of placental iodide and thyroid hormone handling as well as assessing testosterone transport and action.

Associate Professor Emma Duncan has a major role within the Department to promote and undertake research. There are now 3 doctoral students. The department has developed strong links with several research departments and has started major clinical studies in several areas including:

- HIV disease and bone
- Pheochromocytoma and bone disease
- Genetics of Pheochromocytoma
- Genetics of Thyroid Cancer
- Genetics of Skeletal Dysplasia
- Genetics of Osteogenesis imperfecta
- Genome wide association studies of osteoporosis.

Dr Don McLeod has joined the Department and is pursuing research in aspects of the epidemiology of Thyroid Cancer.

The department has developed the first gestational diabetes decision support tool for the management of diabetes. Data on all patients managed in the department is now captured at every clinic visit. This has led to the potential to do clinical trials and outcome audit of all patients with diabetes in pregnancy. This has led to collaboration with the Departments of Obstetric Medicine and Neonatology.



## Genetic Health Queensland

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**Assoc Prof. Julie McGaughran**  
**Director**  
**Genetic Health Queensland**

Genetic Health Queensland is a state-wide service which provides clinical genetics services for all age groups in the state of Queensland. The service is based at RBWH and undertakes clinics at many locations throughout the state including Cairns, Townsville, Mackay, Rockhampton, Bundaberg, Toowoomba, Nambour and Gold Coast.

There are six consultant staff positions, two advanced trainees and an intern on elective placement. As a state-wide service, GHQ contributes to education and grand rounds both at RBWH and LCCH and across the state. All clinical staff undertake a number of presentations locally to other health professional groups and to non-government organisations. Genetic counsellors work with the medical staff both at RBWH and at sites throughout Queensland. Medical students and genetic counselling students may undertake elective placements in the department. The Queensland Familial Cancer Registry is also part of the department. There is a research assistant employed by the ICCOn familial cancer project. There is a weekly in service, journal club and clinical review meeting. Research interests include dysmorphology, prenatal genetics, cardiac genetics, renal genetics and cancer genetics.

Given the rarity of many genetic conditions and the availability of some genetic testing only out of state or in a research setting, there is considerable collaboration between staff of the department and national and international colleagues.





# Genetics of Epilepsy

**Aim:** To identify genes and genetic pathways whose epigenetic state associates with epilepsy with the goal being to isolate potential biomarkers for epilepsy.

**Clinical Benefits:** Patient care would be enhanced by the capacity to develop new diagnostic tests for epilepsy in the form of predictive biomarkers and the future potential for development of new treatment modalities for epilepsy.

## Supervised Post-graduate Research Students

Name	Current Studies University <i>(duration)</i>	Research Project Title	Supervisors <i>(RBWH staff in bold)</i>
Namitha Mohandas	University of Melbourne (July 2015 – June 2018)	An epigenomic and twins approach to neurodevelopmental disorders	Jeffrey Craig, Alicia Oshlack, Kylie Crompton, <b>Lata Vadlamudi</b> , Charles Claudianos





## Geriatric and Rehabilitation Services

Research at the Geriatric and Rehabilitation Service (GRS) is mainly conducted at the Memory clinic in collaboration with UQ, UQCCR and International multicentre trial sponsors. Memory disorder research conducted at GRS is mainly in Alzheimer's disease (AD) aimed at finding more effective treatments for this chronic neurodegenerative disorder that is significantly increasing in prevalence worldwide including Australia. Alzheimer's disease has become the 3<sup>rd</sup> main cause of mortality in Australia especially in females and the leading cause of morbidity in Australia. In the next 20-30 years, a 5-6 fold increase in prevalence of AD in Queensland is estimated.

Clinical research in AD at the Memory clinic will add to the worldwide literature and knowledge in the management of this devastating illness. Local research plays a vital part in not only adding to the literature but also providing a better understanding of local variables in response to treatment.

A RBWH Foundation and RBWH Research Grant in 2015 totalling \$31,000 helped partly fund a pilot study in "*Transcranial direct current stimulation to improve cognition and learning in prodromal Alzheimer's disease*". This was a collaborative research between RBWH Memory clinic and UQCCR.

Collaborative research in AD has also been conducted with local and international researchers as part of multicentre drug trials.

### Other Current Collaborative Research Activity

Collaborative Lead Researchers	RBWH Researchers	Research Project Title
TauRx Therapeutics Ltd	Kana Appadurai (Geriatric and Rehabilitation Service), Gerard Byrne (Mental Health Centre)	Randomized, Double-Blind, Placebo-Controlled, Parallel-Group, 15-Month Trial of Leuco-methylthioninium bis(hydromethanesulfonate) in Subjects with Mild to Moderate Alzheimer's Disease (Phase 3)
TauRx Therapeutics Ltd	Kana Appadurai (Geriatric and Rehabilitation Service), Gerard Byrne (Mental Health Centre)	Randomised, double-blind, parallel-group, placebo-controlled study of Lu AE58054 in patients with mild-moderate Alzheimer's disease treated with an acetylcholinesterase inhibitor; Study 3



## Department of Infectious Diseases

The Department of Infectious Diseases aims to conduct high quality clinical and translational research to improve real-world outcomes for people with infections, by collaboration with national and international partners.

The Infectious Diseases Department has very strong links with other medical research facilities in Queensland, including: UQ (School of Medicine, School of Population Health and UQCCR); QIMR Berghofer; Wesley Medical Research; and QUT.

The two main foci of research efforts in the Department of Infectious Diseases focus on the leadership of our key clinician academics, Professor James McCarthy and Professor David Paterson.

The principal focus of Professor McCarthy's group is to undertake clinical trials to develop new antimalarial drugs. As well as testing experimental antimalarials in clinical trials, research encompasses the development of methods to investigate transmission of malaria from experimentally infected human host to mosquito vectors, the discovery of molecular markers of the sexual stages of the malaria parasite that can be measured in the blood of experimentally infected human volunteers, development of methods to produce malaria parasite banks suitable for human use and the design of statistical methods for measuring the effectiveness of antimalarial drugs. Antimalarial drug development has been transformed by the application of human challenge studies to evaluate drug efficacy. Professor McCarthy's group has successfully developed international links with pharma and philanthropy, resulting in over A\$4 million of funding for research and clinical trials in Brisbane. This has included over A\$1.2 million of funding from the Medicines for Malaria Venture to undertake clinical trials of novel antimalarials, a \$10 million from the Bill and Melinda Gates Foundation to support clinical trial infrastructure and ongoing funding from the NHMRC to facilitate vaccine development. Professor McCarthy serves on the editorial boards of PLoS Neglected Tropical Diseases, and the International Journal for Parasitology, and has provided invited reviews for Nature, Lancet, Lancet Infect Dis, J Inf Dis, Clin Inf Dis.

The other main focus of research in the department is clinical research in antibiotic-resistant bacteria based on Professor Paterson's global leadership in the fight against gram-negative "superbug" infections, including clinical, epidemiological and translational research. In 2015, RBWH participated in major clinical trials such as the MERINO study of antibiotic therapy options for life-threatening bloodstream bacterial infections.

The department of infectious diseases also conducts clinical research to help people living with bloodborne-virus infections, particularly human immunodeficiency virus (HIV) and hepatitis C virus infection.

### Supervised Post-graduate Research Students

Name	Current Studies University (duration)	Research Project Title	Supervisors (RBWH staff in bold)
Hugh Wright	PhD		David Paterson
Patrick Harris	PhD		David Paterson
Sumudu Britton	PhD, UQ (2011–2016)	Plasmodium vivax high-throughput loop mediated isothermal amplification (LAMP): <i>Improving the diagnostic repertoire for malaria elimination</i>	James McCarthy, Qin Cheng, Colin Sutherland

### Research Fellows

Name	Type of Fellowship	Research Program	University (years)
James McCarthy	Government of Queensland, Health Research Fellowship	Improving the care of patients with infectious diseases	RBWH, QIMR Berghofer (2010 – 2016)
James McCarthy	National Health and Medical Research Centre, Practitioner Fellowship	Developing drugs and vaccines for malaria by undertaking experimental studies in humans	RBWH, QIMR Berghofer (2013 – 2018)
John Woodford	Clinical Research Fellow, supported by Bill and Melinda Gates Foundation	Developing drugs and vaccines for malaria by undertaking experimental studies in humans	2016

## Department of Infectious Diseases *(cont)*

### Other Current Collaborative Research Activity

Collaborative Lead Researchers	RBWH Researchers	Research Project Title
Sharon Chen (University of Sydney)	Krispin Hajkovicz	2 <sup>nd</sup> Australian National Candidaemia Study
Archie Clements, Darren Gray, Susana Vaz Nery	James McCarthy	WASH for Worms
Kate Mounsey	James McCarthy	Treatment and Control of Scabies
Alan Cowman, Krystal Evans, Louis Schofield	James McCarthy	Clinical Trial of a Genetically attenuated malaria parasite
Stephen Trowell, Amalia Berna	James McCarthy	Investigation of the transmission of malaria to mosquitoes
Stephen Trowell, Amalia Berna	James McCarthy	Volatiles in Malaria





## Internal Medicine and Aged Care

The Internal Medicine Research Unit supports a broad range of investigator initiated research across the lifespan, from pre-conception to old age. Our main areas of research investigate the care and outcomes of acutely hospitalised older people; people with chronic disease; and pregnant women. Our research includes basic, clinical and translational studies intended to directly improve outcomes of our target populations.

Our health services research group focuses on collaborative, multidisciplinary clinical research to improve health systems during hospitalisation for older people, and optimising treatment following hospitalisation for common conditions including heart failure, thyroid disease, bone disease and multimorbidity. Our researchers actively engage in translation activities including presenting at national and international forums, teaching, high level leadership and clinical redesign of services based on emerging evidence. We were finalists in the 2015 Health Excellence Awards for the Eat Walk Engage program, now being tested in the multi-site CHERISH project led by Dr Mudge and funded by a \$1.5 million Queensland Accelerate Partnership grant.

The Obstetric Medicine research group intends to improve the outcomes of complex pregnancy for women and their infants through basic and clinically applied research. We have a broad interest in maternal health, with studies addressing areas from anaesthetics, maternal obesity and diabetes as well as asthma and psychological status. Our research laboratory is currently focussing on placental metabolism in maternal diabetes and preeclampsia as well as the relationship between the maternal gut microbiome and pregnancy outcomes. In 2015, Professor Leonie Callaway led a NHMRC funded randomised controlled trial from RBWH – the SPRING study of probiotics for the prevention of GDM. We also collaborated on the BLT (breathing for life trial) of asthma management in pregnancy, a multicentre Australian trial led by Newcastle University. Other grants included > \$160,000 in project grant funding addressing maternal metabolism, and the microbiome.

### Supervised Post-graduate Research Students

Name	Current Studies University (duration)	Research Project Title	Supervisors (RBWH staff in bold)
Prue McRae	M Phil, UQ (completed 2015)	Understanding the occurrence of geriatric syndromes in older surgical patients	<b>Alison Mudge, Philip Walker, Nancye Peel</b>
Julie Adsett	PhD, Griffith (2012–)	Aquatic exercise for patients with stable heart failure	
Angela Byrnes	PhD, UQ (2015–2018)	Investigating the nutritional care and status of older patients on two surgical wards: a multi-phase action research study	Judy Bauer, <b>Adrienne Young, Alison Mudge, Merrilyn Banks</b>
Catherine Kilgour	PhD (completed 2015)	Communication between Hospital Clinicians, General Practitioners and Women: Postpartum Follow-up of Mothers with Gestational Diabetes Mellitus	Fiona Bogossian, <b>Leonie Callaway, Cindy Gallois, David McIntyre</b>
Helen Robinson	PhD (2015–)	Carbohydrate Restriction in the Management of Gestational Diabetes	<b>Leonie Callaway, Helen Barrett, Marloes Dekker Nitert</b>
Fiona Britten	PhD (2014–)	Breastfeeding in women with Type 2 diabetes	<b>Leonie Callaway, Emma Duncan</b>
Naomi Achong	PhD (2010–)	Insulin requirements in pregnant women with type 1 diabetes mellitus during late pregnancy and the peripartum period	<b>Leonie Callaway, Emma Duncan, David McIntyre</b>
Victoria Eley	PhD (2013–)	Clinical guidelines relating to the anaesthetic management of obese parturients: An evaluation of their clinical utility and supporting evidence	<b>Leonie Callaway</b>
Luisa Gomez Arango	PhD (2014–)	Microbiome in pregnancy	<b>Leonie Callaway, Marloes Dekker Nitert</b>
Cara Odenthal	MPhil (2013–)	Can MRI at 3 and 5 years after first demyelinating event detect reduction in rain volume in patients who progress to clinically definite MS compared to those who do not?	<b>Leonie Callaway</b>
Kristine Matusiak	MPhil, (2012–)	Effects of preconception weight loss on the HPA axis	Marloes Dekker Nitert, <b>Leonie Callaway</b>
Angela North	MPhil, (2015–)	Therapeutic heparin antenatal and peripartum	<b>Karen Whitfield, Karin Lust, Helen Barrett</b>
Brooke Myers	PhD, UQ (2014–2016)	Role of the Pharmacist on the Medical Post-Take Ward Round	<b>Ian Coombes, Charles Mitchell, Peter Donovan, Jennifer Whitty</b>

## Internal Medicine and Aged Care (cont)

### Research Fellows

Name	Type of Fellowship	Research Program	University (years)
Alison Mudge	Queensland Health and Medical Research Fellowship	Improving acute and post-hospital care of older patients	QH (2014–2017)
Julie Adsett	National Heart Failure or Australia Postgraduate Scholarship	Safety and efficacy of aquatic exercise in patients with stable heart failure	(2012–2017)
Helen Barrett	ADS-Skip Martin Early Career Fellowship	Triglycerides in pregnancy	UQ (2015–2016)
Helen Robinson	NHMRC PhD scholar	Carbohydrate Restriction in the Management of Gestational Diabetes	UQ (2015–2018)
Helen Robinson	RBWH foundation research higher degree scholarship	Carbohydrate Restriction in the Management of Gestational Diabetes	UQ (2015–2018)
Fiona Britten	RBWH foundation research higher degree scholarship	Breastfeeding in women with Type 2 diabetes	UQ (2015–2018)
Fiona Britten	Diabetes QLD scholarship	Breastfeeding in women with Type 2 diabetes	UQ (2015–2018)

### Current RBWH Led Research Activity

RBWH Lead Researchers	Collaborative Researchers (RBWH staff in bold)	Research Project Title
Alison Mudge	<b>Prue McRae, Merrilyn Banks, Adrienne Young,</b> Adrian Barnett (QUT), Irene Blackberry (Latrobe), Ann Chang (QUT), Nick Graves (QUT), Ruth Hubbard (UQ), Sharon Inouye (Harvard), Sue Kurrle (Uni of Sydney), Kwan Lim (Univ of Melbourne), Nancy Peel (UQ)	CHERISH: Collaborative for Hospitalised Elders Reducing the Impact of Stays in Hospital
Carol Douglas (Palliative Care), Alison Mudge	<b>Cheryl Blaber, S Murray, Michael Tresillian, Xanthe Sansome</b>	Point prevalence survey of end of life predictors and care in a major tertiary hospital
Alison Mudge, Prue McRae	P Bew (Brighton), J Ylarde (Brighton), D Leahy (Brighton), S Smith (QUT)	Moving Brighton Forward: <i>Mobility in a subacute setting</i>
Julie Adsett	<b>Alison Mudge, Jennifer Paratz,</b> N Morris (Griffith), S Kuys (ACU)	Aquatic exercise compared to land based exercise for heart failure
Alison Mudge, Robert Carroll	<b>Jessica Suna, Charles Denaro, John Atherton</b>	Medication titration in patients enrolled in HF disease management programs: <i>Substudy of the EJECTION-HF study</i>
Leonie Callaway	Harold David McIntyre, Marloes Dekker Nitert, J Tobin, P O'Rourke, S Wilkinson, C McSweeney, H Barrett	SPRING trial
Peter Donovan	Christine Rowland (Greenslopes Private Hospital), <b>Emma Duncan (Endocrinology), Alison Mudge, Paul Tesar (Radiology)</b>	Teriparatide for Pelvic Fracture Healing
Peter Donovan	<b>Donald McLeod (Endocrinology),</b> Louisa Gordon (QIMR Berghofer)	Cost Utility Analysis of the Primary Therapies for Graves' Disease
Donald McLeod (Endocrinology)	<b>Peter Donovan, Michael Keogh (Endocrinology)</b>	Treat-to-Target TRAb in Graves' Disease
Phillip Robinson (Rheumatology)	<b>Peter Donovan,</b> Nicola Dalbeth (University of Auckland, Auckland Hospital)	A Health Economic Analysis Of The American College Of Rheumatology Guideline To Monitor Serum Urate Every 6 Months After Reaching Target In Gout Treatment
Ian Coombes (Pharmacy)	<b>Peter Donovan, Michael Barras (Pharmacy),</b> Charles Mitchel (UQ), Brooke Myers, Christy Noble, Trudy Teasdale, Linda Stockwell (Gold Coast University Hospital)	Improving Intern Medical Officer Prescribing through an Intervention of Self-Assessment and Feedback
Hannah Farquhar (Medicine)	<b>Don McLeod (Endocrinology), Peter Donovan, Roger Allison (Cancer Care), Susan Thomas (Cancer Care), Lee Tripcony (Cancer Care)</b>	Validating a response to therapy risk stratification system for Medullary Thyroid Cancer

## Internal Medicine and Aged Care (cont)

### Other Current Collaborative Research Activity

Collaborative Lead Researchers	RBWH Researchers	Research Project Title
Jon Golledge (JCU)	Philip Walker, Alison Mudge	Brief behavioural counselling intervention for peripheral arterial disease
Rita Hwang (PAH)	Alison Mudge, Jessica Suna, Julie Adsett	Timed up and go test: reliability and validity in heart failure patients
Katherine Poulsen (TPCH), Claire Barrett (Redcliffe), Laurel Young (Redcliffe)	Helen Barrett	Pregnancies exposed to biologics (PEB) study
Susan Jordan (QIMR Berghofer)	Peter Donovan, Jeffrey Goh	Variations in adjuvant chemotherapy and survival in women with epithelial ovarian cancer
Brooke Myers (Gold Coast University Hospital)	Ian Coombes, Peter Donovan	Role of the Pharmacist on the Medical Post-Take Ward Round

### Research Awards and Achievements

Recipient	Award	Event
Helen Robinson	ADIPS Novo Nordisk Grant 2015	ADIPS Annual Scientific Meeting





## Kidney Health Service

The Kidney Health Service (KHS) aims to translate new knowledge and improvements in practice into the clinical care of people with kidney and related diseases. We do this through generating new knowledge of novel mutations causing kidney disease, identifying which people are likely to experience progressive loss of kidney function and how the innate immune system drives the progression of kidney injury. The research is translated into innovative models of care in combined renal genetics disease, kidney diabetes and kidney supportive care programs. We influence the practices of clinicians outside the RBWH through our publications and co-authorships of treatment guidelines and Cochrane systematic reviews.

In this report we describe the work of young investigators who we are training for independent research careers. Two early career researchers were awarded NHMRC project grants in 2015 - Dr Andrew Kassianos CIA and Dr Andrew Mallett CID:

- **Kassianos A, Healy H, Wilkinson R, Francis L, Francis R.** Pathogenic dendritic cells in human kidney disease. Total \$370,983
- Little M, Smyth I, Simons C, **Mallet A**, Alexander S, Wovetang E, Oshlack A, Patel C, **Healy H**, Bennetts B, Tchan M, Quinlan C, Walker A, White S, Stark Z. Applying functional genomics to kidney disease. Total \$1,299,316.

Three young researchers were recipients of scholarships in their PhD programs - Ms Leanne Brown is the recipient of an NHMRC postgraduate scholarship, Mr Sandeep Sampangi a QUT doctoral studies scholarship and Mr Meng-Po Lo a Queensland Pathology Scholarship.

Researchers in the Kidney Health Service are Chief Investigators on 2 NHMRC Centres of Research Excellence:

- Hoy W, **Healy H**, Connelly L, Mitchell G, Panaretto K, Endre Z, Coombes J, Gobe G, **Bonner A**, Fassett R. NHMRC Centre of Research excellence in Chronic Kidney. Total \$2,496,981.45
- Yates P, Mitchell G, Currow D, Eagar K, Edwards H, Gardner G, Willmott L, Bonner A, Clark R, Tieman J. NHMRC Centre of Research Excellence, End of Life Care. Total \$2,495,543.

The successful research programs are the outputs of productive collaborations with:

- Genetics Health Queensland and the Department of Supportive and Palliative Care at the RBWH
- Endocrinologist specialising in Diabetes at TPC and Members of Executive Team, MN HHS
- all the specialty kidney services, Queensland Health, with specific projects of research with Dr Ross Francis Department of Nephrology, PAH
- the Departments of Chemical and Anatomical Pathology, Queensland Pathology
- Children's Hospital Westmead Molecular Genetics Laboratory.

And researchers at:

- QIMR and the Translational Research Institute
- Universities of Queensland, Melbourne, Monash and Washington (Seattle) and QUT.

### Supervised Post-graduate Research Students

Name	Current Studies University (duration)	Research Project Title	Supervisors (RBWH staff in bold)
Sadia Afrin	Masters, QUT – completed	Defining a 3D in vitro model to study immune cell and renal cell interactions	Ray Wilkinson, Travis Klein, Karsten Schrobback, <b>Andrew Kassianos</b>
Hajar Alasari	PhD (3 <sup>rd</sup> year), QUT	Examining intensive care nurses' clinical decision-making associated with acute kidney injury and continuous renal replacement therapy	<b>Ann Bonner, Fiona Coyer</b>
Hayfa Almutary	PhD (3 <sup>rd</sup> year), QUT	Exploring symptom clusters in people with chronic kidney disease	Ann Bonner, Clint Douglas
Kylie Barr	PhD (1 <sup>st</sup> year), UWS	Evaluation of the effectiveness of intradialytic yoga for patients with end stage kidney disease	Caroline Smith, Bobby Cheema, <b>Helen Healy</b>
Leanne Brown	PhD (3 <sup>rd</sup> year), QUT	Evaluating patient-centred decision making for end stage kidney disease	Glen Gardner, <b>Ann Bonner</b>
Ha Thi Thuy Dinh	PhD (3 <sup>rd</sup> year), QUT	Exploring teach-back as a method for improving Heart Failure knowledge and self-management	<b>Ann Bonner</b> , Joanne Ramsbotham, Robyn Clark

## Kidney Health Service (cont)

### Supervised Post-graduate Research Students (cont)

Name	Current Studies University (duration)	Research Project Title	Supervisors (RBWH staff in bold)
Kathryn Havas	PhD (2 <sup>nd</sup> year), QUT	Comparison of a brief and an in-depth intervention to support self-management in people with chronic kidney disease	<b>Ann Bonner</b> , Clint Douglas
Bronwyn Hayes	DHlthSc, QUT – <i>completed</i>	Job satisfaction, stress and burnout in haemodialysis nurses	<b>Ann Bonner</b> , Clint Douglas
Wei He	PhD, QUT – <i>completed</i>	Exploring the factors associated with concordance with lifestyle modifications in Chinese people with hypertension	<b>Ann Bonner</b> , Debra Anderson
Meng-Po (Becker) Lo	PhD (1 <sup>st</sup> year), QUT	Functional characterisation of lymphocyte subsets in human kidney disease	<b>Andrew Kassianos</b> , Ray Wilkinson, Ken Begley, <b>Helen Healy</b>
Andrew Mallett	PhD (3 <sup>rd</sup> year), UQ SoM	Genetic Diagnostics in Genetic Renal Disease – <i>Methods, Applications and Therapeutics</i>	<b>Helen Healy</b> , Wendy Hoy, Val Hyland, David Johnson
Molly Milazi	DHlthSc (2 <sup>nd</sup> year), QUT	Nurse-led teach back intervention to improve people with end stage kidney disease adherence with phosphate binders	<b>Ann Bonner</b> , Clint Douglas
Nguyet Thi Nguyen	PhD (2 <sup>nd</sup> year), QUT	Self-management of people with early stages of chronic kidney disease in Hanoi, Vietnam	<b>Ann Bonner</b> , Clint Douglas
Sandeep Sampangi	PhD, QUT – <i>completed</i>	The role of renal proximal tubular epithelial cells (PTEC) in autologous immune modulation	Ray Wilkinson, Ken Beagley, Travis Klein, <b>Andrew Kassianos</b> ,
Haunnah Rheault	DHlthSc (2 <sup>nd</sup> year), QUT	Health literacy and chronic disease self-management in Indigenous Australians	<b>Ann Bonner</b> , <b>Fiona Coyer</b>
Colette Wembenyui	MAppSc (2 <sup>nd</sup> year), QUT	Self-management in people with chronic kidney disease	<b>Ann Bonner</b> , Clint Douglas

### Research Fellows

Name	Type of Fellowship	Research Program	University (years)
Jenny Zhang	NHMRC post doctoral	NHMRC Centre of Research Excellence	3 years

### Current RBWH Led Research Activity

RBWH Lead Researchers	Collaborative Researchers (RBWH staff in bold)	Research Project Title
Ann Bonner, Helen Edwards	<b>Patsy Yates</b> , Geoff Mitchell, David Currow, Kathy Eagar, Glenn Gardner, Lindy Willmott, Robyn Clark, Jennifer Tieman	NHMRC funded End of Life CRE
Ann Bonner, Helen Healy, Adrian Kark, Sharad Ratanjee	<b>Patsy Yates</b> , Shirley Chambers, S Chhabra, Wendy Hoy	A feasibility study to track the last 12 months of life in chronic kidney disease patients: <i>Baseline characteristics</i>
Helen Healy	<b>Andrew Kassianos</b> , <b>Ray Wilkinson</b> , Xiangju Wang, Sandeep Sampangi, Meng-Po Lo, Leo Francis, Ross Francis	Identifying biologically relevant control and switch points driving progression of chronic kidney disease
Ann Bonner, Helen Healy, Adrian Kark, Sharad Ratanjee	Wendy Hoy, Geoffrey Coombes, Zoltan Endre, Robert Fassett, Glenda Gobe, Geoffrey Mitchell	NHMRC funded CKD.CRE
Helen Healy	Wendy Hoy, Ann Bonner	Co-Chair CKD.Qld – <i>A multidisciplinary research and practice collaborative network</i>
Helen Healy	Tracey Johnson, Sue Williams, Wendy Hoy	Keeping Kidneys in the Community
Andrew Mallett, Chirag Patel	<b>Helen Healy</b> , Julie McGaughan, Melissa Little, Lorna Hale, Ernst Wolvetang, Cas Simons, Jo Crawford, Ian Smyth, Peter Trnka, Hugh McCarthy, Steve Alexander, Amali Mallawaarachchi, Cathy Quinlan, Zornitsa Stark	NGS and iPSC Applications in Genetic and Inheritable Kidney Disease

## Kidney Health Service (cont)

### Supervised Post-graduate Research Students (cont)

RBWH Lead Researchers	Collaborative Researchers (RBWH staff in bold)	Research Project Title
Dwarakanathan Ranganathan	Burns and Critical Care Unit	POEMSLUN – Pharmacokinetics of Enteric coated Mycophenolate Sodium in Lupus Nephritis
Dwarakanathan Ranganathan	Radiology	RadCath Study
Dwarakanathan Ranganathan	Burns and Critical Care Unit	An ex vivo evaluation of clearance and circuit sequestration of immunosuppressants during renal replacement therapy

### Other Current Collaborative Research Activity

Collaborative Lead Researchers	RBWH Researchers	Research Project Title
Martin Gallagher, Kevan Polkinghorne, Nicholas Gray, Stephen McDonald, Alan Cass	Sharad Ratanjee, David McIntye	REDUCTION Study – REDUcing the burden of dialysis Catheter ComplicaTIONS: <i>A National approach</i>

### Research Awards and Achievements

Recipient	Award	Event
Ann Bonner	2015 Vice Chancellor Award	QUT
Ann Bonner, Sonya Coleman, Kathryn Havas, Bernadette Taylor, Lorraine Bublitz, C Stone, Susanne Ehrsam, A Graham	Best Poster – 2 <sup>nd</sup> prize	European Dialysis and Transplant Nurses Association/European Renal Care Association Conference, Dresden Germany
Leanne Brown, Glen Gardner, Ann Bonner	Best Paper	2015 Australian College of Nurse Practitioner Conference, Melbourne
Leanne Brown, Glen Gardner, Ann Bonner	Best Poster	2015 Australian College of Nurse Practitioner Conference, Melbourne
Andrew Mallett	RBWH Foundation Award for Best Overall Research	2015 RBWH Symposium
Andrew Mallett	RBWH Alumni Research Encouragement Award for Highest Ranked Project Grant Application	RBWH Foundation Research Grants
Andrew Mallett	UQ Graduate School International Travel Award	Doctoral sabbatical in Cambridge – refining candidate gene libraries
Meng-Po Lo	Queensland Pathology Scholarship	PhD studies – commenced 2015
Sandeep Sampangi	QUT Scholarship	PhD studies – completed 2015



## Liver Trials Group

The Liver Trials Group, under Prof Barbara Leggett and Dr Richard Skoien, remains an important centre for international clinical/therapeutic trials in the areas of chronic Hepatitis C, Fatty Liver Disease and Hepatocellular Carcinoma (HCC). Dr Richard Skoien has also continued his work, in collaboration with the Hepatic Fibrosis Group (Prof Grant Ramm, QIMR Berghofer), on the study of circulating microRNAs as potential biomarkers in chronic liver disease. A number of projects examining their roles as potential predictors of cirrhosis-related complications and diagnostic markers of HCC are ongoing. A successful SEED application also supported a project to prospectively assess the cost-effectiveness and efficacy of the Hepatoma and Compensated Cirrhotic Follow-up (HAC-FOL) programme as a new standard of care in HCC surveillance at the RBWH.

The work of the colorectal cancer research group led by Barbara Leggett has been pivotal in the recognition that cancer can arise in serrated colorectal polyps. Previously these polyps were regarded as having no malignant potential and were not targeted for removal at colonoscopy. In fact, approximately 20% of all colorectal cancers arise in serrated polyps. Since colorectal cancer is one of the most common malignancies in Australia with over 14,000 cases annually, this equates to about 2,800 cases of serrated pathway cancers per year. Discoveries by this group have changed the practice of colonoscopy to better prevent cancer. Ongoing research aims to understand the underlying molecular pathology to identify high risk polyps for enhanced surveillance and to develop chemoprevention. The importance of the work is reflected in frequent invitations for Prof Leggett and her collaborators to speak at international and national meetings.

The endoscopy research group is currently involved in projects about novel endoscopic techniques, small bowel endoscopy, endoscopy outcomes and familial cancer syndromes.

The GI inflammation/Inflammatory Bowel Diseases group led by Graham Radford-Smith continues to play a lead role across the state and the region with multiple clinical and research initiatives focused on optimization of patient care and improved understanding of disease pathogenesis. The work includes the development of revolutionary, bespoke software for IBD management, the further development of the charity – Crohn's Colitis Cure, chairing of the ANZ IBD Consortium, and identifying variance in care for IBD patients across different jurisdictions. Ongoing research aims to improve the treatment of acute IBD, particularly for those individuals living in regional and remote Australia, and to identify more cost-effective biomarkers for the early diagnosis of colonic polyps, GI cancers and IBD.

### Supervised Post-graduate Research Students

Name	Current Studies University (duration)	Research Project Title	Supervisors (RBWH staff in bold)
Anna Weis	PhD, UQ (2014–2017)	New non-invasive methods to detect progression of liver disease and identify patients at highest risk of cirrhosis-related mortality	<b>Richard Skoien</b> , Grant Ramm
Mark Bettington	PhD, UQ (2013–2015)	Identification of molecular features of high risk colorectal polyps	<b>Barbara Leggett</b> , Vicki Whitehall, Neal Walker
Yoon An	MPhil, UQ (2015–2016)	Improving the quality of colonoscopy (candidature start date extended)	<b>Mark Appleyard</b> , David Hewett
James Irwin	MPhil, UQ (2013–2016)	Longitudinal predictors of poor outcome in Crohn's disease	<b>Graham Radford-Smith</b> , James Doecke
Des Patrick	MPhil, UQ (2015–2017)	Effect of pre-admission immunosuppressive therapy and regional versus metropolitan hospital presentation on colectomy rates in acute severe ulcerative colitis (ASUC)	<b>Graham Radford-Smith</b> , <b>Mariko Howlett</b>
Richard Cheng	MPhil, UQ (2015–2017)	Host and Environmental Factors Determining the Timing of First Intestinal Resection and Surgical Recurrence in a Crohn's Disease Inception Cohort	<b>Graham Radford-Smith</b> , <b>Mariko Howlett</b> , James Irwin

### Research Fellows

Name	Type of Fellowship	Research Program	University (years)
Des Patrick	Conjoint Fellow	Inflammatory Bowel Diseases	UQ (2015–17)
Richard Cheng	Conjoint Fellow	Inflammatory Bowel Diseases	UQ (2015–17)

## Liver Trials Group (cont)

### Current RBWH Led Research Activity

RBWH Lead Researchers	Collaborative Researchers (RBWH staff in bold)	Research Project Title
Richard Skoien	Anna Weis, Grant Ramm Leesa Wockner	Serum markers in atypical liver lesions (SMALL) study
Richard Skoien	<b>Olivia Cullen, Alicia Braund, Mary Fenech, Karen Beckman, Deborah McIntyre, Joanne Mina</b>	The Hepatoma and Compensated Cirrhotic Follow-up (HACC-FOL) programme – a new streamlined, safe and cost-effective model of hepatocellular carcinoma surveillance
Richard Skoien	Anna Weis, Leesa Wockner, Grant Ramm	MicroRNAs as potential serum biomarkers of fibrosis progression and hepatocellular carcinoma development in chronic Hepatitis C
Richard Skoien	<b>Barbara Leggett, Olivia Cullen, Karen Beckman,</b> Anna Weis, Emily Duggan, Grant Ramm	Establishment of a clinical and scientific hepatology database to study factors associated with chronic liver disease
Richard Skoien	Grant Ramm, Paul Clark, Anna Weis	Developing a novel blood test to improve the early diagnosis of liver cancer
Barbara Leggett	Vicki Whitehall (Pathology Queensland)	Molecular genetics of colorectal serrated neoplasia
Mark Appleyard	<b>Florian Grimpen,</b> Dr Schoeman (Royal Adelaide), Dr Lim (Christchurch, NZ)	Randomised control trial of preparation prior to capsule endoscopy
Graham Radford-Smith	Members of the ANZ IBD Consortium (Grant Montgomery, Jane Andrews, Ian Lawrance, Richard Geary, Susie Connor et al)	Genomic Medicine: Predictors of refractory ulcerative colitis and its response to treatment
Graham Radford-Smith	Simon Keely	Serum hypoxia markers as biomarkers for IBD
Graham Radford-Smith	Lisa Simms, Mark Appleyard	Optimizing Gastrointestinal (GI) cancer screening in Queensland: the application of clinical, genetic and faecal biomarkers to improve the early detection of GI cancers
Helen Mar Fan	<b>Barbara Leggett</b>	Identification of the Gene Causing Hereditary Flat Adenoma Syndrome

### Other Current Collaborative Research Activity

Collaborative Lead Researchers	RBWH Researchers	Research Project Title
Jolieke Van der Pols (UQ)	Barbara Leggett	Barbara Leggett
Daniel Worthley (University of Adelaide)	Barbara Leggett	Barbara Leggett
Futoshi Kawamata (Hokkaido University)	Barbara Leggett	Barbara Leggett
Finlay Macrae (Royal Melbourne Hospital)	Mark Appleyard	Mark Appleyard
Gregor Brown (Alfred Hospital, Melbourne)	Florian Grimpen	Florian Grimpen
CSIRO UQCCR	Florian Grimpen	Florian Grimpen
Jane Andrews (Royal Adelaide Hospital, University of Adelaide)	Graham Radford-Smith	Graham Radford-Smith
Greg Anderson (QIMR Berghofer)	Graham Radford-Smith	Graham Radford-Smith
John Croese (TPCH)	Graham Radford-Smith	Graham Radford-Smith

## Liver Trials Group *(cont)*

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### Research Awards and Achievements

Recipient	Award	Event
Mark Bettington	Best Basic Clinical Science Research	RBWH Healthcare Symposium
Mark Bettington	Young Investigator Awards Finalist	Gastroenterology Society of Queensland
Winnie Fernando	Young Investigator Award	Gastroenterology Society of Australia
Mark Bettington	Dean's award for outstanding PhD	UQ
Des Patrick	Young Investigator Awards Finalist	Gastroenterology Society of Queensland
Anna McMahon	Young Investigator Awards Finalist	Gastroenterology Society of Queensland
Richard Cheng	Young Investigator Awards Finalist	Gastroenterology Society of Queensland
Des Patrick	UQ scholarship (2015–2 years)	UQ
Richard Cheng	RBWH scholarship (2015–1 year)	RBWH Foundation

## Motor Neurone Disease Research

The Motor Neuron Disease (MND) research team under Dr Rob Henderson and Prof Pam McCombe has expanded and implemented new strategies during this period to maximise recruitment and provide additional support to facilitate research participation for interested patients. The team now includes neurologists, scientists, nurses, a PhD student and a neuropsychologist. The team has links to University of Qld, Qld Brain Institute and other Australian and overseas MND research collaborators.

A dedicated MND Research Clinic was established twice a month to allow interested patients to meet the research team and discuss the various MND projects. Patients are encouraged to ask questions and the patient then has a contact person to clarify any concerns or queries that may later arise. The clinic also allows additional time apart from the clinical visit to collect information related to specific MND projects from consenting patients in a more relaxed and informal environment.

The appointment of a neuropsychologist into the research team has allowed an increased focus on cognitive and behavioural research for MND patients. She has also been involved with collaborative research with another MND centre within Australia. Part of her research involves feedback to patients and carers regarding their neuropsychological testing and providing strategies to help manage deficits found.

A novel project has been commenced investigating metabolism in MND patients which has suggested some patients experience hypermetabolism as a mechanism for rapid weight loss. Work is ongoing to develop clinical strategies for at risk patients and to expand the project to other centres.

The causes of MND are not well understood. There are also limited treatment options available for these patients. MND research explores progress, causes and potential treatments for the disease. It allows the patient an opportunity to be involved in clinical drug trials as available as well as investigator-led research projects.

### Supervised Post-graduate Research Students

Name	Current Studies University (duration)	Research Project Title	Supervisors (RBWH staff in bold)
Zara Ioannides	PhD, UQ (2015–2018)	Energy metabolism and lipid storage in motor neurone disease (MND)	<b>Rob Henderson</b>
Zhouwei Xu	PhD, UQ (2014–2017)	Cognitive dysfunction in motor neurone disease	<b>Pam McCombe, Rob Henderson</b> , Shyuan Ngo, Frederick Steyn

### Current RBWH Led Research Activity

RBWH Lead Researchers	Collaborative Researchers (RBWH staff in bold)	Research Project Title
Rosemary Argall	<b>Rob Henderson, Pam McCombe</b> , Gail Robinson (UQ)	Assessment of cognition and behaviour in Motor Neuron Disease in a clinical setting and the impact of education sessions on care giver well-being
Rob Henderson, Pam McCombe	Shyuan Ngo	Assessment of biomarkers in Motor Neurone Disease (MND)
Kimberley Forrest	<b>Rob Henderson, John O'Sullivan, Anna Farrell</b>	Botulinum Toxin for Sialorrhoea in Amyotrophic Lateral Sclerosis – <i>Does Ultrasound Guidance and Submandibular Infection Improve Outcomes?</i>
Rob Henderson, Pam McCombe	Stephen Rose, <b>Alan Coulthard</b>	Measuring disease of upper and lower motor neurons in Amyotrophic Lateral Sclerosis (ALS)

### Other Current Collaborative Research Activity

Collaborative Lead Researchers	RBWH Researchers	Research Project Title
Zara Ioannides, Shyuan Ngo, Frederick Steyn	Rob Henderson, Pam McCombe	Energy metabolism and Lipid storage in motor neurone disease (MND)
Christine Guo, Gail Robinson	Michael Breakspear, Rob Henderson	Neurobiology-informed diagnostic toolkit for neurodegenerative diseases
Peter Noakes	Rob Henderson	Abnormalities of muscle and neuromuscular junction in motor neuron disease (MND)



## Motor Neurone Disease Research *(cont)*

### Research Awards and Achievements

Recipient	Award	Event
Shyuan Ngo	Senior Researcher Award	Australian Society for Medical Research (ASMR) Queensland Health and Medical Research Awards
Frederik Steyn	RBWH Clinical Research presentation award	-



## Department of Neurology

Professor Theresa Green leads the Stroke Nursing Professorial Unit at RBWH and is currently a Principal Investigator on two state-wide grants. One is a rehabilitation pathway study, *Building efficient and equitable pathways to and through rehabilitation in stroke* (BEEPRS) which spans the entire MNHHS with eight participating sites; Prof Green is coordinating four sites – RBWH, TPCB, Redcliffe and Caboolture. The second project – *Collaborative for Hospitalised Elders: Reducing the Impact of Stays in Hospital* (CHERISH) – is a multi-site RCT examining the “Eat Walk Engage” program at four metropolitan, community and regional hospital sites.

The aim of the Stroke Nursing Professorial Unit is to develop and expand research capacity in stroke nursing at Metro North Hospital and Health Service, and to engage clinical nursing staff in critical thinking about evidence informed nursing practice in the delivery of stroke care in the acute setting. As the professorial unit develops, research projects will span the continuum of stroke and neurological care across multiple settings and services including acute care, rehabilitation services and community reintegration.

During the first year of this professorial unit, we have submitted a grant application to the NMWB of AU and there has been an increase in the number of stroke-related abstract presentations (oral and poster) at national and international conferences, with systematic review publications pending. It is expected this number will continue to grow as research proposals, based on clinical needs identified by practicing clinicians are moved forward over the upcoming year. Networks have been established with stroke nursing and allied health professionals across MNHHS and similar collaborative relationships developed across the state of QLD.

Prof Green has many international links; this year she was invited to sit on the editorial board of the American Rehabilitation Nursing Journal, the scientific review committee for the International Stroke Conference Nursing Symposium, and the Stroke Nursing Committee of the Council on Cardiovascular and Stroke Nursing. She was an invited speaker at an International Cardiovascular conference and has presented locally at workshops and symposiums. She is a peer reviewer for several high ranking nursing and medical journals, including Stroke, the International Journal of Stroke, Rehabilitation Nursing, Journal of Advanced Nursing and Journal of Clinical Nursing.

### Supervised Post-graduate Research Students

Name	Current Studies University (duration)	Research Project Title	Supervisors (RBWH staff in bold)
Nicole Coghlan	MPhil	Factors affecting adherence to compression garments in an adult burns population	<b>Sue Laracy</b> , Jenny Strong, Jodie Copely, Tammy Aplin
Michelle Donovan	MPhil (2010–2016)	Improving donor site epithelisation and scar maturation times following split skin grafting in Burns patients: <i>A novel research study using compression therapy</i>	<b>Michael Muller</b> , <b>Jennifer Paratz</b> , Zephania Tyack.
Sarah Kekki	Masters in Clinical Rehabilitation Flinders University	Intensity of UL practice in occupational therapy treatment in adult stroke population	<b>Sue Laracy</b> , Chris Barr, <b>Giovanna Tornatore</b>
Emma Schleiger	PhD, UQ (2012–2016)	Investigating the ability of post-stroke eeg measures of brain dysfunction to inform early prediction of cognitive impairment or depression outcomes	<b>Simon Finnigan</b> , <b>Andrew Wong</b> , Stephen Read

### Research Fellows

Name	Type of Fellowship	Research Program	University (years)
Nicole Coghlan	Crammond Fellow in Pain Management	M Phil	UQ

## Department of Neurology (cont)

### Current RBWH Led Research Activity

RBWH Lead Researchers	Collaborative Researchers	Research Project Title
Kirsten Cook	<b>Sue Laracy, Shireen Senewiratne</b>	Occupational Therapy in the Treatment of Carpal Tunnel Syndrome for Patients Referred for Surgical Opinion in an Australian Public Hospital
Tennille Rowland	<b>Sue Laracy, Giovanna Tornatore, Beverley Lewis,</b> Simon Finnigan	Occupational therapy stroke audit: Measuring compliance of occupational therapy practice with evidence-based guidelines
Sue Laracy	Cate Fitzgerald, <b>Bev Lewis</b>	Supporting the transition to practice of new graduate occupational therapist using a clinical education framework
Nicole Andrews	Jenny Strong, Pamela Meredith, <b>Julia Fleming,</b> Kellie Gordon, Karl Bagraith, Genevieve Donohue, Rachel D'Arrigo	An exploration of overactivity in chronic pain
Robyn Scheer	<b>Emma Foley, Nicole Andrews, Sue Laracy</b>	The effect of limb position on leg circumference measurements in patients diagnosed with lower limb lymphoedema
Andrew Wong	Geoffrey Donnan (The Florey Institute of Neuroscience and Mental Health), Stephen Davis (Royal Melbourne Hospital)	A randomised, multicentre, double blinded, placebo controlled phase 3 trial in ischaemic stroke patients with significant penumbral mismatch at 4.5 – 9 hours post onset of stroke or after 'wake up' stroke comparing intravenous tPA with placebo
Andrew Wong	Mark Parsons (John Hunter Hospital)	A multicentre, prospective, randomised open-label blinded endpoint phase III study in stroke thrombolysis patients to compare tenecteplase and alteplase for an outcome of less disability at three months
Andrew Wong	Han-Christoph Diener	A randomized, double-blind, evaluation in secondary stroke prevention comparing the efficacy and safety of the oral thrombin inhibitor dabigatran etexilate versus acetylsalicylic acid in patients with embolic stroke of undetermined source
Andrew Wong	S. Claiborne Johnston	A randomised, double-blind, multinational study to prevent major vascular events with ticagrelor compared to aspirin in patients with acute ischaemic stroke or TIA

### Other Current Collaborative Research Activity

Collaborative Lead Researchers	RBWH Researchers	Research Project Title
Emma Schleiger (UQCCR)	Tennille Rowland (Occupational Therapy), Andrew Wong (Stroke Unit)	Quantitative EEG in Stroke: Role of quantitative EEG in diagnosis, prognostication and management of acute stroke.
Alexia Rohde (UQ)	Anna Farrell (Speech Pathology), Andrew Wong (Stroke Unit), Genevieve Skinner (Stroke Unit)	Interrater and intrarater reliability of tasks used in the identification of acute post-stroke aphasia: <i>A rational clinical examination approach.</i>
Dominique Cadilhac (Monash University)	Andrew Wong (Stroke Unit)	A collaborative, national effort to monitor, promote and improve the quality of stroke care in hospitals and patient outcomes.
Lucy Thomas (UQ)	Andrew Wong (Stroke Unit)	An evaluation of the seasonal variability of the incidence of cranio-cervical dissection in the CADISS trial.

### Research Awards and Achievements

Recipient	Award	Event
Nicole Andrews, Jenny Strong, Pamela Meredith, Kellie Gordon, Karl Bagraith	PAIN's 2015 most cited paper award	-



## Department of Nuclear Medicine/Specialised PET Services QLD

The Department of Nuclear Medicine at RBWH is one of the largest in Australia. It provides a referral, diagnostic and therapeutic nuclear medicine service with four SPECT/CT gamma cameras, one solid state cardiac camera, BMD dual energy X-ray absorptiometry (DEXA) and a pQCT scanner. Research interests in nuclear medicine include image reconstruction methodologies, application of gating and bone mineral densitometry in various disease states.

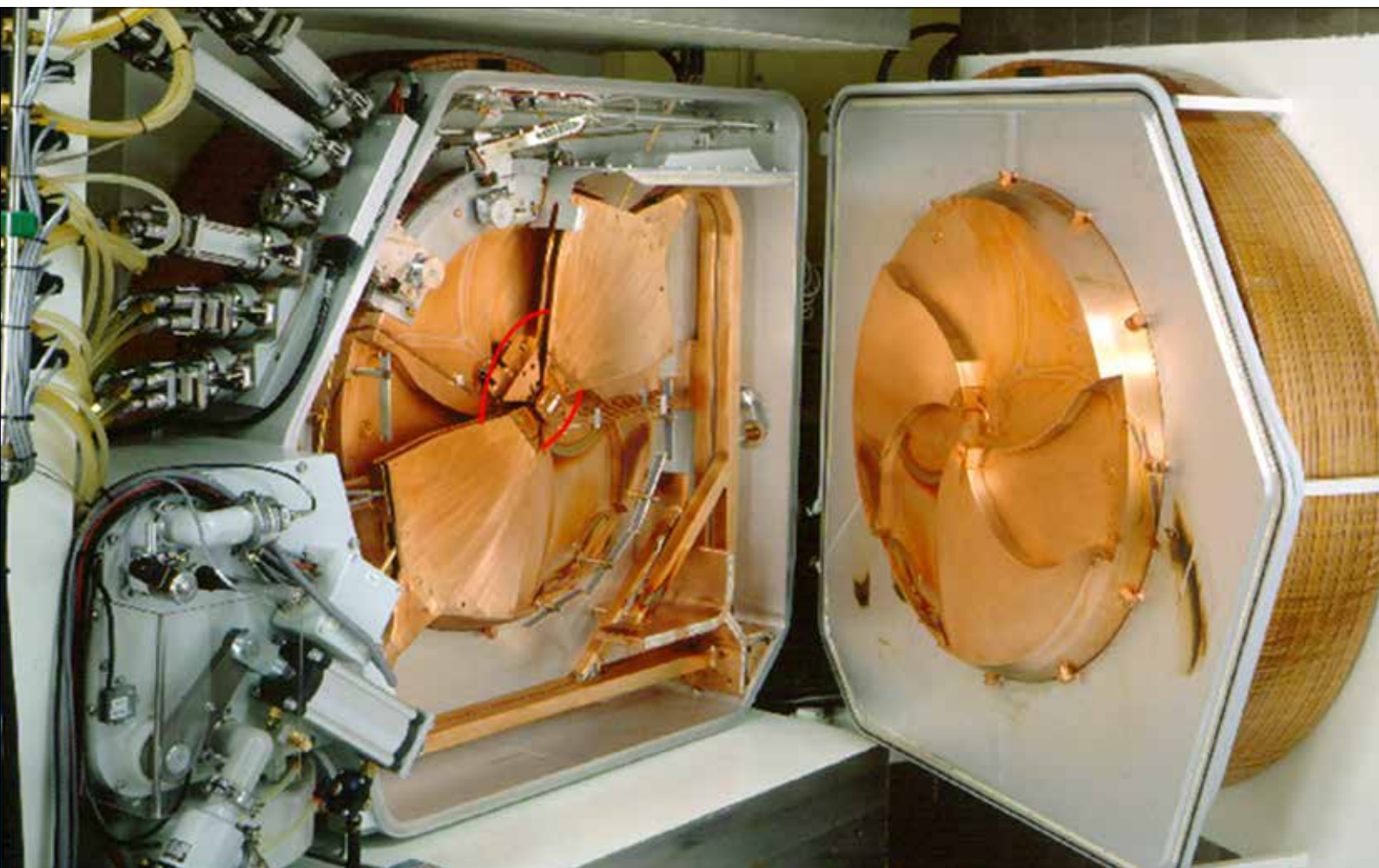
The department hosts the state-wide Specialised PET Services Queensland, which operates two state-of-the-art PET/CT scanners and a TGA accredited radio laboratory operating a cyclotron. It offers research facilities to a wide variety of investigators. In addition to conventional tracers such as fluorodeoxyglucose (18FDG), the Service also conducts research using 18FDOPA, 18FMISO and 68Ga-DOTATATE and 68Ga-PSMA. 68Ga-Pentixafor is currently being used in animal studies, allowing for the study and research of a greater range of diseases. There is also ongoing research interest in image reconstruction algorithms, respiratory gating and image analysis techniques.

### Supervised Post-graduate Research Students

Name	Current Studies University <i>(duration)</i>	Research Project Title	Supervisors <i>(RBWH staff in bold)</i>
Ghazi Albaroum	M App Sc (2015)	Monte Carlo Modelling of Radio nuclides	<b>Jye Smith</b>

### Current RBWH Led Research Activity

RBWH Lead Researchers	Collaborative Researchers <i>(RBWH staff in bold)</i>	Research Project Title
Paul Thomas	<b>Roger Allison, Graeme Dickie</b>	A Pilot Project on the impact of PSMA PET on radiotherapy planning in high risk prostate cancer.
Manoj Bhatt		Comparison of Ga-68-DOTATATE PET-CT with dynamic PET, post-contrast MRI and PET-MRI in patients with known Neuroendocrine tumour with liver metastases.





## Palliative and Supportive Care

In 2015, SEED funding from Metro North HHS enabled the Palliative and Supportive Care Service to undertake an important piece of work that will support the evidence required to understand the population needs for end of life care.

This study was undertaken as a Point Prevalence Survey project to enable the RBWH Palliative Care service to profile the in-patient hospital population using internationally validated criteria to identify those acute patients with short life expectancy with a view to improving care at the end of life.

The prevalence tool was based upon the SPICT TOOL, the application of 'the Surprise Question' from the UK Gold Standards Framework, and a FRAILTY scale.

Clinical charts of patients identified in the point prevalence audit as likely entering the final year of life were analysed for evidence of Advance Care Planning documentation and Goals of Care.

The Project outcome will be a definitive in-patient profile which demonstrates the number and nature of end of life/palliative care needs. This will allow for discussion among treating and supporting teams regarding determining goals of care, optimal collaboration and care for patients approaching the end of life.

A major outcome of the Project will be the establishment of a standardized, accessible and tested tool for assessing end of life/palliative care needs status by multidisciplinary clinical teams. It will include the potential for transferability to other MN facilities, for collaboration across State-wide and National Palliative Care Networks and for international learning.

### Dr Carol Douglas

External Reviewer

Journal Palliative Medicine and Internal Medicine Journal

### Current RBWH Led Research Activity

RBWH Lead Researchers	Collaborative Researchers <i>(RBWH staff in bold)</i>	Research Project Title
Carol Douglas	<b>Alison Mudge</b>	End of Life Point Prevalence Survey



## Department of Rheumatology

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The rheumatology department provides a comprehensive range of diagnostic and therapeutic services to patients with acute and chronic musculoskeletal disease. Areas of research interest include assessment and management of autoimmune inflammatory arthritis, gouty arthritis, eye conditions related to systemic arthritis and Systemic Lupus Erythematosus (SLE). Specifically, the department has a research interest in applying therapeutic drug monitoring to clinical practice with the aim of providing individualised medicine management. Gout research involves epidemiology and clinical outcomes.

The department liaises closely with other medical specialties, clinical pharmacy services, allied health and community service providers to optimise patient outcomes. There is a monthly combined renal-rheumatology clinic (vasculitis and SLE) which provides clinical outcome data and reporting.

