

# Surgical and Perioperative Services

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**Dr Barry O'Loughlin**  
Executive Director  
Surgical and Perioperative Services

Surgical research links biological science to the patient's bedside and to the operating room. It assists surgical staff to think critically and evaluate data without bias.

The Royal Australasian College of Surgeons (RACS) recognises research as one of the pillars underpinning the practice of surgery and includes bench and clinical research as a basic component of surgical training.

Surgical and Perioperative Services has traditional strong links with UQ and QUT as well as collaborations with the research institutes on the Herston campus. There are some joint appointments of key staff. In 2015 we mourned the premature loss of Professor Phillip Walker, Professor of Surgery UQ and former Director of the Department of Vascular Surgery at RBWH. He was a surgeon scientist of the highest order and an exemplary role model for academic surgery for many years.

In 2015 Associate Professors Michael Muller, Burns Trauma and General Surgeon, and Owen Ung, Breast Endocrine and General Surgeon were granted full Professorial titles by UQ in recognition of their academic contributions. Professor Ung was appointed to the role of Scientific Convenor by RACS in advance of its Annual Scientific Meeting in Brisbane in May 2016.

A number of important clinical trials were underway in 2015. Of particular note, Professor Frank Gardiner, Urology, with colleagues Dr Geoff Coughlan and Dr John Yaxley, continued to recruit patients to the first prospective randomised controlled trial in the world of Robotic Assisted Laparoscopic Prostatectomy versus Radical Open Prostatectomy, with publication anticipated in 2016. This is an important study as many surgical techniques have been introduced in the past with little evidence base.

## Department of Anaesthesia and Perioperative Medicine

Our research group in anaesthesia (RIGA) aims to provide optimal anaesthetic care for patients based on world class, research-based clinical practice. Our research foci are airway management particularly video-laryngoscopy and laryngeal mask airways, ultrasound-guided regional blocks, obstetric care of bariatric patients and protocols for blood management.

Clinical benefits of research / how does your research help your patients

Our research activities contribute to improved patient outcomes by using a collaborative approach to translate clinical research knowledge into clinical practice with a strong focus on a safe anaesthetic environment which aligns with practice guidelines.

Professor Andre van Zundert was made an Honorary Member of the Belgian Society of Anaesthesia and Reanimation.

**Research collaborations with other departments within RBWH as well as MNHHS and externally with other institutes locally, nationally and internationally.**

2015 has seen the department expanding their research collaborations with RBWH's Intensive Care Unit/Burns, Trauma and Critical Care Research Centre, The University of Queensland. Current collaborative studies include:

- Surgical antibiotic cover in bariatric patients;
- Antibiotic cover + oxytocin in bariatric Caesarean patients with epidurals;
- Planned study of bacteraemia/surgical site infections by retrospective audit of blood stream infection;
- Optic nerve sheath diameter for measurement of intracranial pressure;
- Insertion and maintenance care bundles for peripheral arterial catheters.

The department has joined a large multi-centre trial, the BALANCED Anaesthesia Study to investigate the depth of anaesthesia in elderly surgical patients. This study is in collaboration with the Australian and New Zealand College of Anaesthetists Trials Group.

### Supervised Post-graduate Research Students

Name	Current Studies University (duration)	Research Project Title	Supervisors (RBWH staff in bold)
Victoria Eley	PhD, UQ (2014 – 2016)	Clinical Guidelines relating to the anaesthetic management of obese parturients: An evaluation of their utility in clinical practice and the evidence <sup>3</sup> supporting the recommendations	<b>André van Zunder</b>
Julie Lee	PhD, UQ (2015 – 2017)	ROTEM <sup>®</sup> thromboelastometry in obstetrics	<b>André van Zundert</b>

### Research Fellows

Name	Type of Fellowship	Research Program	University (years)
Julie Lee	Research, Quality Assurance and Regional Anaesthesia Fellowship	Investigating ROTEM <sup>®</sup> thromboelastometry in obstetrics	UQ (2015–2016)

### Current RBWH Led Research Activity

RBWH Lead Researchers	Collaborative Researchers (RBWH staff in bold)	Research Project Title
André van Zundert	<b>Niall Higgins</b>	NIRVANA (Near Infra Red Vascular ANALysis)
Kersi Taraporewalla	Penelope Sanderson (UQ), <b>Heather Reynolds</b> , Marcus Watson (UQ)	Respiratory Sonification Trial
Heather Reynolds	<b>Martin Culwick</b> , Amanda Ullman, Gabor Mihala, Evan Alexandrou, Claire Rickard (Griffith University)	Cochrane Protocol and Review: Dressings and Securement Devices for Peripheral Arterial Catheters
Gareth Collins	<b>André van Zundert</b> , <b>Lizanne Dagleish</b> , <b>Cienwen Town</b> , <b>Jeffrey Lipman</b>	Collaboration with ICU: Optic nerve sheath study to measure ICP



## Nursing and Midwifery Research Centre *(cont)*

### Department of Anaesthesia and Perioperative Medicine *(cont)*

RBWH Lead Researchers	Collaborative Researchers <i>(RBWH staff in bold)</i>	Research Project Title
Rochelle Ryan	<b>Rebecca Christensen, Dwane Jackson, Victoria Eley, André van Zundert, Jason Roberts, Jeffrey Lipman</b>	Collaborative ICU study: Therapeutic concentrations cephalosporin in bariatric surgical patients
Heather Reynolds	<b>André van Zundert, Kersi Taraporewalla, John Gowardman</b> , Claire Rickard (Griffith University)	Bundled interventions for safe care of peripheral arterial catheter in adult patients: the ALICE (Arterial Line Insertion and CarE) protocol

### Other Current Collaborative Research Activity

Collaborative Lead Researchers	RBWH Researchers	Research Project Title
Kate Leslie	Michael Edwards, Lizanne Dagleish, Cienwen Town	BALANCED
Jing He, Prof Yang	Michael Steyn, Charles Cheung	Predictive Software Analysis for Patient Outcomes

### Research Awards and Achievements

Recipient	Award	Event
André van Zundert	Honorary Member	Belgian Society of Anaesthesia and Reanimation Meeting



# Department of Ear Nose and Throat Surgery

## Rhinology

Using local probiotic treatment of the nasal cavity to displace colonisation of pathogenic bacteria from the upper respiratory tract in chronic rhinosinusitis and ear disease

### Clinical Benefits

An alternative to antibiotics and a possibility to restore airway health.

### Grants

Microbiota of the Human Sinuses. It's role in health and disease, The Garnett Passe and Rodney Williams Memorial Foundation Conjoint Grant.

### Research Collaborations

UQCCR; Centre for Children's Health Research, Brisbane; Lund University, Sweden

## Supervised Post-graduate Research Students

Name	Current Studies University <i>(duration)</i>	Research Project Title	Supervisors <i>(RBWH staff in bold)</i>
Andrea Coleman	PhD	Aboriginal and Torres Strait Islander Bacterial Interference in Otitis Media Explorative Study	<b>Anders Cervin,</b> Seweryn Bialasiewicz

## Current RBWH Led Research Activity

RBWH Lead Researchers	Collaborative Researchers <i>(RBWH staff in bold)</i>	Research Project Title
Anders Cervin	Seweryn Bialasiewicz (LCCH)	Microbiota of the Human Sinuses. It's role in health and disease
Anders Cervin	Hanna Sidjabat (UQCCR)	Probiotic Discovery and Development

## Department of General Surgery

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The general surgeons at the Royal Brisbane have a long history of innovative surgery, and this has led to a respected worldwide reputation, especially in the field of minimal access or laparoscopic surgery. This is particularly so in the subspecialty fields of Hepato-Pancreato-Biliary (HPB), Colorectal and Bariatric surgery. The academic output from the breast and endocrine surgical unit, led by Prof Owen Ung, has also greatly increased over recent years.

### *Hepato-Pancreato-Biliary (HPB) Surgery (Dr Nick O'Rourke):*

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Eight papers were published in 2015. Dr Richard Bryant, HPB surgeon can write database software from scratch. Combined with fellow HPB surgeon, Dr David Cavallucci (Masters in Statistics UQ 2015) we have a unit capable of generating short and long term quality surgical data.

Academic output was enhanced by two visiting fellows from Singapore, Dr Adrian Chiow and Dr Terence Huey. Both came sequentially to the Royal for twelve months, and were fully funded by the Singapore government.

### *Projects ongoing or published in 2015:*

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Collaborating with the Wesley hospital led to a publication in HPB (the leading international journal in HPB surgery) on a comparative study of laparoscopic vs open liver resection for colorectal metastases. Dr David Cavallucci's Masters Thesis investigated a method of comparing datasets, using Inverse Probability Weighting to make Propensity Scoring far more accurate. We continue to collect data and reanalyse the histological subtypes of hepatic adenoma, in collaboration with senior pathologists, Prof Andrew Clouston and Dr Mahendra Singh. We published locally (ANZ J of Surg) on our experience with synchronous colorectal liver metastases in pregnancy and postpartum. We collaborated with Dr Matthew Burge (oncologist) and Dr David McFarlane (Nuclear Physician) in a prospective evaluation of FDG PET scans for Pancreas Cancer. This led to another publication in 2015 in HPB. Dr Nick O'Rourke continued his collaboration with a group of International Laparoscopic Liver Surgeons as an organiser and chief investigator at the Second Consensus Meeting on this subject. This Japanese Meeting produced multiple publications, including the main report in the Annals of Surgery. Dr O'Rourke was made the Secretary General of ILLS (International Laparoscopic Liver Society)

### *National Research roles:*

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Dr O'Rourke convened the annual scientific meeting of the ANZHPBA in Cairns in October, 2015.

He is also co-chair, with Prof J Fawcett of QLPIG (Qld Liver Pancreas Interest Group). This new organization has been set up to collect state wide data on the outcomes of surgery for cancers involving the liver and pancreas.

Dr David Cavallucci is head of the Research Committee of the ANZHPBA.

### *HPB Invited International /National Presentations in 2015:*

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#### *Dr Nick O'Rourke:*

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April, Singapore Asia/Pacific HPBA meeting, "The classification of Biliary Strictures", "Laparoscopic Hepatectomy";

May, Amsterdam, (Medtronic workshop), "Methods of hepatic parenchymal transection";

August, Kandy, Sri Lanka, "Laparoscopic HPB Surgery"

September, Korea, ELSA, "Laparoscopic Right Hepatectomy";

November, Hangzhao, China, "Advanced Laparoscopic Liver Surgery".

## Dr David Cavallucci:

October, Sydney, RPA annual Pancreaticobiliary meeting, “Robotic Pancreatic Surgery’

November, Cairns, “Robotic HPB Surgery”

Multiple free papers were presented at international and national meetings by staff including registrars Dr Dan Kilburn and Dr Joel Lewin.

## Bariatric Surgery (Headed by Dr George Hopkins):

We are currently investigating the outcomes of sleeve gastrectomy in patients with Crohn’s Disease; and revisional single anastomosis gastric bypass (SAGB) for complicated laparoscopic adjustable gastric banding (LAGB). The incidence of Portomesenteric Vein Thrombosis following Sleeve Gastrectomy is being examined through retrospective data collection from 5 bariatric centres across Australia and a single district in Russia.

## Trauma Surgery (Dr Darryl Wall):

### Projects:

- Outcome study of pelvic packing
- Outcome study of seatbelt for pregnant injured patients
- Red Blanket outcome study
- Outcome audit of elderly in trauma care
- Outcome of regional analgesia in severe chest injuries
- Analysis of benefit of digital rectal examination in initial assessment in trauma
- Hospital related complications
- Goal directed therapy for massive haemorrhage
- Role of ROTEM in goal directed care of massive haemorrhage
- Tertiary survey analysis of outcomes of trauma nurse coordinators compared with doctors
- Role of CT of the abdomen in avoiding unnecessary trauma laparotomy
- Analysis of FAST ultrasound in directing decision making in trauma
- Randomised study of the use of tranexamic acid for haemorrhage
- An analysis of the quality of inter-hospital transfer of the severely injured
- The role of interventional radiology as an alternative to surgical haemostasis
- The future use of tourniquets in civilian trauma

## Breast and Endocrine Unit (Prof Owen Ung)

The Breast and Endocrine Unit have had an active 2015 with articles in press and grants pending. In particular we have developed collaborations with researchers at University of Auckland, University of Sydney, QUT, Translational Research Institute, UQCCR, HIRF to progress various projects, some of which are listed below. It has been a year of constructing and maintaining a prospective database that will provide us with much reliable clinical outcome data into the future and facilitate clinical research. This significant initial body of work will deliver a greater ability to collaborate with basic and translational researchers and aid the supervision of medical students, junior doctors and surgical trainees in their research endeavours.

### Research Fellows

Name	Type of Fellowship	Research Program	University (years)
Mui Heng GOH	Breast and Trauma Fellow – Singapore	To evaluate the impact of One Step Nucleic Acid Assessment (OSNA) of sentinel lymph nodes which is new intraoperative SLN assessment technique operative management of the axilla.	UQ (2015–016)



## Breast and Endocrine Unit (Prof Owen Ung) *(cont)*

### Current RBWH Led Research Activity

RBWH Lead Researchers	Collaborative Researchers <i>(RBWH staff in bold)</i>	Research Project Title
Clement Wong, Owen Ung	QUT Centre for biomedical innovation. Lead researcher: Dietmar Hutmacher	Tissue engineering and regenerative medicine  3D printed biodegradable scaffolds with tissue-engineered nipple constructs.
Kowsalya Murugappan, Owen Ung	<b>Ben Green</b> , Alison Bullen, <b>Bartholomew McKay</b> , Denver Khoo	Optimizing the surgical management of the axilla in breast cancer.  Investigating the role of theranautic PET/MRI and identification of positive axillary nodes for invasive breast cancer
Benjamin Green, Kowsalya Murugappan, Owen Ung		Evaluation and implementation of two stage and single stage implant based immediate reconstruction at RBWH: a prospective database
Owen Ung, Mui Heng Goh	<b>Kowsalya Murrugappan, Ganeev Malhotra, Clement Wong, Ben Green, Sunil Lakhani</b>	First Australian Centre: Implementation and evaluation of One-Step Nucleic Acid Amplification (OSNA) in Management of Axilla in Breast Cancer

### Other Current Collaborative Research Activity

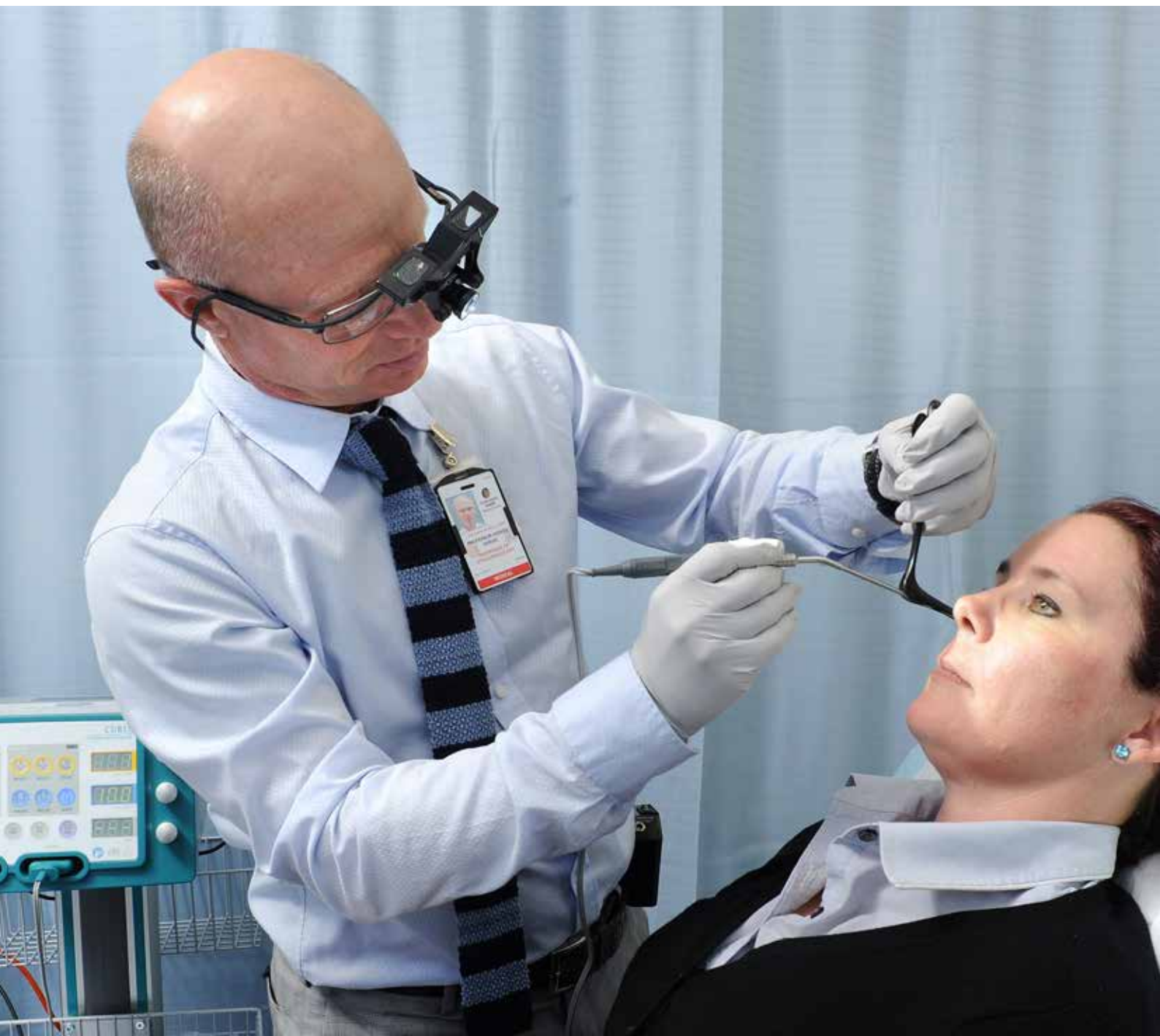
Collaborative Lead Researchers	RBWH Researchers	Research Project Title
Rachel Flanagan (North Shore Hospital, NZ), Richard Harman (North Shore Hospital, NZ)	Kowsalya Murugappan, Owen Ung, Clement Wong, Ben Green	Why do Australian women have better breast cancer survival ratios than NZ women? A study comparing breast cancer patients treated at two large hospitals in Auckland and Queensland



# Department of Oral Maxillofacial Surgery

## Supervised Post-graduate Research Students

Name	Current Studies University (duration)	Research Project Title	Supervisors (RBWH staff in bold)
Nicolas Beech	MPhil UQ (2015–2016)	The impact of dental extractions on Osteoradionecrosis and quality of life in irradiated head and neck cancer patients.	<b>Martin Batstone</b>
Michael Hurrell	PhD UQ (2013–2017)	The effects of treatment timing on the outcomes of facial fractures.	<b>Martin Batstone</b>
Timothy Liu	(MPhil) UQ (2016–2017)	The utility of radiotherapy in intermediate risk oral cavity SCC.	<b>Martin Batstone</b>
Benjamin Fu	(MPhil) UQ (2015)	CT Scanning in odontogenic infections of the head and neck.	<b>Martin Batstone</b>





## Trauma Service

The staff of the Trauma Service (TS) provide continuous comprehensive care and communications for severely injured patients from around Queensland and northern New South Wales. These activities include the constant entry of verified patient data for the RBWH Trauma Registry (TR). The TR information provides daily service to the members of the Trauma Review Committee and the Trauma Advisory Committee both of which serve to support Quality and Safety of care. The information also serves to support researchers both within and without the TS. The TR also serves to provide guidance professional development, safety of patient transfers, safety of women in pregnancy, development of training workshops, presentation of trauma advancement symposia and for improvement of trauma care in regional centres. TR information also guides the TS provision of prevention activities such as P.A.R.T.Y. (Prevent Alcohol and Risk-related Trauma in Youth) and consumer engagement duties such as preparing the patient trauma care passport and follow up planning.

### Research Awards and Achievements

Recipient	Award	Event
P.A.R.T.Y. Program	Excellence in Leadership	2015 Premiers Awards for Excellence
Stephanie Tan	Registrar prize	51 <sup>st</sup> Provincial Surgeons of Australia annual conference – Rural surgery



## Department of Vascular Surgery

Dr Jason Jenkins is the chief investigator on a number of National Health and Medical Research Council funded clinical trials aimed at improving the management of vascular disease. Dr Jenkins has significant research collaborations with Professor Jon Golledge's group at James Cook University, Dr Chris Askew at the University of the Sunshine Coast, Professor Rob Fitridge at the University of Adelaide, Professor Bronwyn Kingwell at the Baker IDI Heart and Diabetes Research Institute and Professor Malcolm West's group at TPCH.

During 2015, under the supervision of Dr Jason Jenkins and in collaboration with UQ, the Department of Vascular Surgery participated in a variety of research projects in the area of vascular disease. Research ranged from basic science investigation into the aetiology of aortic aneurysmal disease, through to studies of devices for the endoluminal management of aortic pathology. The department played a key role in the recruitment of participants to multicentre clinical trials assessing medical therapies for the management of abdominal aortic aneurysm (AAA), as well as a behavioural intervention trial for patients with peripheral artery disease (PAD).

Research carried out by the Vascular Department has the potential to significantly improve the management of patients with PAD. At present there is no known medical therapy for the treatment of AAAs. The clinical trials underway within the department aim to identify an agent which may be used to slow down the growth of AAAs, with the long-term goal of reducing the numbers of patients required to undergo AAA repair. Research into novel endoluminal devices aims to identify a more clinically effective solution for endovascular repair of AAAs.

### Current RBWH Led Research Activity

RBWH Lead Researchers	Collaborative Researchers <i>(RBWH staff in bold)</i>	Research Project Title
Jason Jenkins	Jon Golledge - James Cook University (JCU)	Telmisartan in the management of abdominal aortic aneurysm (TEDY)
Jason Jenkins	Jon Golledge (JCU)	Fenofibrate in the management of abdominal aortic aneurysm (FAME)
Jason Jenkins	Jon Golledge (JCU)	Fenofibrate in the management of abdominal aortic aneurysm-2 (FAME-2)
Jason Jenkins	Jon Golledge (JCU)	Effect of a dietary supplement on abdominal aortic aneurysm growth (IMAGEN)
Jason Jenkins	Jon Golledge (JCU)	Brief behavioural counselling intervention for peripheral arterial disease (BIP)
Jason Jenkins	Julie Jenkins	The Endurant Stent Graft Natural Selection Post-market Registry (ENGAGE)

### Other Current Collaborative Research Activity

Collaborative Lead Researchers	RBWH Researchers	Research Project Title
Chris Askew	Jason Jenkins	The effect of acute exercise on vascular function and inflammation in abdominal aortic aneurysm patients (AAAEP)